ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF WILDLIFE CONSERVATION
PO Box 115526
Juneau, AK 99811-5526

Alaska Department of Fish and Game
Wildlife Restoration Grant

GRANT NUMBER: AKW-20 Wildlife Restoration FY2017

PROJECT NUMBER: 3.0 Caribou

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

PERIOD: July 1, 2016 – June 30, 2017

Report Due Date: June 29, 2016; Resubmitted December 1, 2017

PROJECT LOCATION: Statewide

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

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

Region II: Units 7, 8, and 15

Activity 1: Prepare information for 5-year regional caribou management operational plans.

A caribou management report was drafted during the 2015 reporting period and was recently published. 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 2018.

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 at that time. There have been no Board of Game actions relative to Region II caribou since that time.

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

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 unit specific activities.

Activities by Unit:

Unit 15 Kenai Lowland and Kenai Mountain Herds:

Activity 1: A survey was conducted in June 2017 for the Kenai Lowland herd. A total of 81 animals were counted consisting of 20 calves, and 61 unknown adults. No significant change occurred in adult or calf numbers since the previous composition count in 2016.

A survey was conducted in December 2016 for the Kenai Mountain herd. A total of 178 animals were counted. Animals were not classified by sex or age due to survey conditions. Survey numbers have increased back to levels not seen since 2011.

Activity 2: Currently 16 caribou are radio collared (2 in Fox River, 6 in Kenai Lowlands, 2 in Kenai Mountains, 6 in Killey River). Additional captures were not conducted during this reporting period.

Activity 3: 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 in the 2014-2015 reporting period. The number of state issued permits for the Kenai Mountain Herd was further reduced to 25 permits for this reporting period. This reduction greatly reduced the overall harvest to only 1 bull caribou harvested under state regulations and 2 unknown caribou under Federal harvest.

Unit 15 Killey River and Fox River Herds:

Activity 1: In cooperation with the USFWS, conduct a post-calving aerial sex and age composition survey. A survey was conducted in November 2016 for the Killey River Herd and the Fox River Herd. Count numbers were significantly higher for the Killey River Herd compared to the last survey, with 339 total animals and a composition of 33 bulls, 117 cows, 179 unknown adults, and 10 calves. The count for the Fox River Herd was 47 total animals and a composition of 3 bulls, 43 unknown adults, and 1 calf.

Activity 2: Monitor the caribou harvest through field observations, hunter harvest reports and contact with hunters. In 2016-2017, 50 permits were issued for the Killey River Herd due to the increasing population trend, almost doubling the number of permits. The increased permits significantly increased the harvest to 13 bulls and 7 cows. Four animals (3 bulls, 1 cow) were taken in the Fox River Herd during the reporting period. 10 permits were issued, and 5 people hunted.

Unit 8 Kodiak Herd:

Activity 1: 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. We estimate the population is stable at approximately 400 animals.

Activity 2: Monitor the caribou harvest through field observations, hunter harvest reports and contact with hunters. Hunters reported harvesting 46 caribou (28 males and 18 females) during this reporting period, an increase from the 2015–16 reported harvest of 39 caribou, and an increase from the previous 5-year average.

Submitted by: Cynthia M. Wardlow, Management Coordinator

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

Region III: Units 12, 19, 20, 21, 24, 25, 26B and 26C

1. Prepare 5-year caribou management reports and operational plans.

Compiled information and data for 9 Caribou Operational Reports and Plans for the Macomb, White Mountains, Delta, Galena, Ray, Wolf Mountains, Hodzana Hills, Porcupine, Central Arctic, Chisana, Fortymile, Beaver Mountains, Big River–Farewell, Rainy Pass, Sunshine Mountain, and Tonzona Caribou Herds in Units 19, 20, 21, 24, 25, 26B, and 26C.

2. Provide caribou management information to State and Federal regulatory processes.

Communicated and coordinated with and attended meetings of 15 local Fish and Game Advisory Committee, the Alaska Board of Game, 3 Federal Regional Advisory Councils, the Federal Subsistence Board, Office of Subsistence Management. numerous local village councils, Native corporations, the Porcupine Caribou Technical Committee, the International Porcupine Caribou Board, the Canadian Caribou Management Board, and the Wrangell-St. Elias Subsistence Resource Commission about caribou management and to review and analyze regulation proposals for the Alaska Board of Game and the Federal Subsistence Board.

3. Monitor harvest and analyze harvest data.

Macomb herd: Monitored harvest of caribou during a 22-day season.

Delta Herd: Monitored effort and timing and distribution of harvests through drawing and registration permit reports (152 permits, harvest= 62 bulls).

Hodzana, Ray Mtn, Wolf Mtn., and Galena Mtn. caribou herds: Monitored hunting seasons of varying lengths in 6 Game Management Units.

Beaver Mountains, Big River-Farewell, Rainy Pass, Sunshine Mountain, and Tonzona Caribou Herds: Monitored and analyzed harvest using hunter reports from general season hunts.

Central Arctic and Porcupine herds: Monitored harvest and analyzed data to determine harvest rate, effect on population and harvestable surplus for RY17.

Fortymile herd: Administered 2 registration permit hunts and 1 drawing permit hunt covering Unit 20E and portions of Units 20B, 20D, 20F and 25C during 170 days of hunting season and a total harvest quota of 1,000 caribou.

4. Capture caribou to deploy radio collars and maintain an adequate sample size of collared animals for surveys.

Macomb Herd: 9 female yearling caribou were captured on 3 October 2016 and fitted with VHF radio collars to maintain an adequate sample size of collared caribou. We retrieved 5 radio collars from dead caribou so they could be re-deployed.

Delta and White Mountains herds: Captured and radiocollared White Mountains caribou (1 event, 7 caribou).

Hodzana, Ray Mtn, Wolf Mtn., and Galena Mtn. caribou herds: Radio collar retrievals (1 flight)

Central Arctic herd: Captured 25 adult female caribou in April and 19 adult females, 13 adult males, and 18 yearling females in June.

Porcupine herds: We captured 18 adult females, 18 short yearling females, and 13 adult bulls in March 2017.

Fortymile herd: Captured and weighed 45 female calves and deployed 40 VHF collars on these female calves; captured 16 adult bulls and deployed 16 satellite collars on these bulls; captured 14 adult cows and deployed satellite collars these cows.

5. Conduct aerial surveys to assess population trends, distribution, productivity, and sex and age composition.

Macomb herd:

- Radiocollared caribou were monitored via aerial surveys 5 times during FY17 to track herd movements and distributions.
- A sex and age composition survey was conducted on 20 October.

Delta and White Mountains herds: Conducted composition surveys were conducted during October (2 flights).

Ray Mountains, Wolf Mountain, Galena Mountain, and Hodzana herds: Conducted radiotracking flights in the Hodzana (1 flight), Ray Mountains (3 flight), Wolf Mountain (0 flights), and Galena Mountain (3 flights) herds.

Beaver Mountains, Big River-Farewell, Rainy Pass, Sunshine Mountain, and Tonzona Caribou Herds: Aerial surveys were not conducted due to other area priorities.

Central Arctic herd: Conducted fall composition survey in October 2016, winter radiotracking flights in February, March, April, parturition surveys and postcalving surveys in June 2017.

Porcupine herd: Conducted parturition and postcalving surveys in June 2017

Chisana herd: Conducted a fall sex and composition survey on October 8.

Fortymile herd:

- Conducted daily to weekly aerial distribution surveys in August, September, December.
- Satellite collar locations were used to determine herd distribution during spring military exercises and provided recommendations for avoidance areas to the military every 3 days from May 15 to June 5.
- Conducted a fall sex and age composition survey on October 7.

6. Conduct photocensus of herds to determine population size.

Macomb herd: An aerial census of the herd was conducted in conjunction with the sex and age composition survey during 20 October.

Central Arctic herd: A photocensus was conducted in July 2016.

Porcupine herd: A photocensus was conducted in July 2016.

Fortymile herd: A photocensus was conducted in July 2016.

7. Conduct radiotelemetry flights to monitor distribution of herds, assess mortality, assess parturition rates and calf:cow ratios, and/or determine calving locations.

Delta & White Mountains herds: Conducted fixed-wing Radiotelemetry flights on roughly monthly basis during April-October.

Central Arctic and Porcupine caribou herds: Conducted fixed-wing radiotelemetry flights during July 2016 to monitor distribution for photocensus.

Fortymile herd: Conducted fixed-wing radiotelemetry flights during July 2016 to monitor distribution for photocensus.

8. Participate with resource management agencies to maintain a caribou herd cooperative management plan.

Worked cooperatively with the Yukon Department of Environment and US National Park Service to review the existing Chisana caribou herd management plan and update portions with recent data. This process is ongoing, with a final revision expected to be completed in FY18.

Prepared by: Doreen Parker McNeill, Region III Management Coordinator

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

PROJECT LOCATION: Game Management Units 9-11, 13, 14A, 14B, 16, and 17

Regionwide

ACTIVITY 1: Prepare biennial caribou management reports.

The biennial caribou management reports were not due during this period. Beginning in 2019, the division will be moving to a 5-year reporting cycle for caribou management operational planning.

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**
Mulchatna	24	63	14	22	39
Nelchina	28	49	23	48	57
Northern Alaska Peninsula	36	52	12	24	70
Nushagak Peninsula	27	53	21	40	50
Southern AK Peninsula	26	53	21	38	49
Unimak	19	58	23	40	33

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

	Hunters	Bulls	Cows	Unknown	Total Harvest
Mulchatna	914	225	129	2	356
Nelchina	12,159	3,488	2,789	6	6.283
Northern Alaska Peninsula	53	38	7	0	45
Nushagak Peninsula	?	188	183	0	371
Southern Alaska Peninsula	74	38	5	0	43
Unimak	0	0	0	0	0

The state hunting seasons for the Unimak caribou herd was not open during this reporting period.

Project Activities by Herd

Mulchatna Herd:

ACTIVITY 1: Conduct a photo census to estimate herd size on a projected schedule of once every two years (i.e., 2017, 2019, etc.). Censuses may be conducted more frequently if necessary.

We did not conduct a photo census during this reporting period due to inadequate aggregation of caribou.

ACTIVITY 2: Capture and collar twenty 10-month-old cow caribou to maintain a sufficient sample size and to assess body condition.

A total of 19 radiocollars were deployed on 10-month old female Mulchatna caribou during April 2014.

ACTIVITY 3: Conduct surveys via helicopter during October to assess fall composition and to retrieve dropped radiocollars

A fall composition survey of the Mulchatna caribou herd (MCH) was conducted on October 14 and 15, 2016. During this survey a total of 5,195 caribou were classified based on age and sex, yielding the following estimates: 22 calves:100 cows and 39 bulls:100 cows

ACTIVITY 4: Conduct parturition surveys during peak calving to determine pregnancy rates of age specific collared female caribou.

Over a series of several days, we visually inspected 42 radio-collared adult cows for parturition status.

- 2-year olds: n=14 (14% pregnant);
- 3-year olds: n=5 (60% pregnant);

- 4-year olds: n=10 (80% pregnant);
- 5 years or older: n=13 (77% pregnant).

Nelchina Herd:

ACTIVITY 1: Conduct a photo census to estimate herd size and define a projected schedule for future efforts. Censuses may be conducted more frequently if necessary.

A total of 49,550 caribou were counted during the post-calving photographic census (a 206 and five PA-18 were utilized to complete the survey). During the post-calving composition survey a total of 6,596 caribou were observed via R-44 helicopter: 1,303 (20%) bulls, 3,263 (50%) cows, and 2,030 calves (31%).

ACTIVITY 2: Conduct spring parturition surveys to determine herd productivity.

Four fixed-wing flights were completed in early June 2017. Eighty-one caribou 81 female caribou were observed. Seventy-three caribou had calves at heel for a minimum estimated pregnancy rate of 90%.

ACTIVITY 3: Capture and collar a sufficient number of caribou to maintain a minimum sample size to aid in conducting population assessments and monitor movements.

In October 2016, 20 caribou calves (4-month old) were captured, weighed, measured, and fitted with radiocollars. Captures were conducted via chemical immobilization darts from an R-44 helicopter with the aid of a PA-18 spotter plane.

ACTIVITY 4: Conduct surveys via helicopter during October to assess fall composition and to retrieve dropped radiocollars.

A fall composition survey of the Nelchina caribou herd was conducted in Unit 13B on October 6, 2016. A total of 5,122 caribou were classified based on age and sex, yielding the following estimates: 48 calves:100 cows and 57 bulls:100 cows.

Northern Alaska Peninsula Herd:

ACTIVITY 1: Conduct spring parturition survey to estimate pregnancy rates determine herd productivity.

A parturition survey conducted in May estimated a 71% pregnancy rate for cows that were 2 years of age or older (n = 171).

ACTIVITY 2: Capture and collar a sufficient number of caribou to maintain a minimum sample size of 30.

No captures were completed due to resource limitations.

ACTIVITY 3: Conduct an aerial post-calving photocensus to estimate population size in cooperation with the USFWS.

No photocensus was conducted in 2016-17 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 a spring parturition survey to estimate pregnancy rates and determine herd productivity.

A parturition survey conducted in June estimated 87% pregnancy rate for cows that were 2 years of age or older (n = 739).

ACTIVITY 2: Capture and collar a sufficient number of caribou to maintain a minimum sample size of 30.

No captures were completed due to resource limitations.

ACTIVITY 3: 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 2016-17 due to a lack of post-calving aggregations.

Unimak Herd:

ACTIVITY 1: Conduct a spring parturition survey to estimate pregnancy rates and determine herd productivity.

A parturition survey conducted in June estimated an 85% pregnancy rate for cows that were 2 years of age or older (n = 101).

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 2015-16 due to a lack of post-calving aggregations.

Submitted by: Todd A. Rinaldi, Region IV Regional Supervisor
Date: 1 September 2017

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

Region V: Units 18, 22, 23, and 26A

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 2016 as well as in March, April, and June 2017.

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 2016 to assist the Unit 17 staff in composition flights of the Mulchatna caribou herd (MCH). The results from the 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 three days during June 2017 (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.

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 16 was 142 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.

Teshekpuk 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.

After a successful photocensus in 2015, we were unable to conduct a photocensus during July of 2016 because of poor weather conditions (i.e., mild temperatures and moderate winds which were not conducive for caribou aggregations for insect relief). We will attempt a photocensus in July 2017.

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 Teshekpuk 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.

> Adult female mortality was 9%; lower than the long-term average of 15%, and among the lowest rate observed in the past 15 years. We have not yet summarized causes of mortality for those mortality sites that were visited.

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 could reduce harvestable surplus in the near future.

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

> We continue to work cooperatively with BLM, oil companies, and consultants to address management and mitigation concerns.

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 5 bulls. We attached no VHF collars, all where GPS collars. We replaced 1 bull vhf collar that was nearing the end of its battery life. We used blindfolds and hobbling equipment to restrain caribou. No drugs were used. There were three capture mortalities.

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 did not collect blood, fecal or hair samples, part of a transition toward using swabs and direct genetic identification of disease, rather than serology. We did collect morphometric measurements from the caribou that were captured, and weights from 20 captured yearlings, which weighed 91 lbs, on average.

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 12-13 April 2017. Data are still being analyzed, however; summary data indicate that calf:adult ratios were ~19:100 and 15.6% of the sample size were calves. Overall, all caribou observed appeared to have come out of winter in great shape.

Conduct calving location and productivity aerial surveys in June.

> Calving surveys were conducted on 5-9th June 2017. We located 46 adult cows. The

parturition rate was 82%. The parturition rate of cows 3 years and older was higher than the long-term average of 67% (2001-2015), and substantially higher than the extreme low of 28% observed in 2014. Peak calving occurred on June 6th and calving distribution was normal.

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.

A WAH photocensus was conducted on July 1, 2016; the minimum count was 194,863, and the Rivest-based abundance estimate was 200,928. A photocensus was attempted on July 9-10th of 2017 under sub optimal weather and aggregation conditions, counting of the photos has not yet begun.

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.)

34 satellite radio collars (25 GPS and 9 PTT) were deployed in the WAH during September 2016; 9 collars were deployed on bulls and 25 on cows. An additional 30 coded VHF collars were deployed on calves. There were no capture mortalities during this activity. The year-end sample of collars was over 100 on adult caribou.

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

We classified 10,178 caribou during spring 2017 and observed 22 short yearlings:100 adults. The spring calf:adult ratio during the 2017 survey was just shy of the 2016 ratio of 23:100. Ratios for 2017 are the second highest seen in the past decade.

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

We visually located 98 radiocollared female caribou and observed a ratio of 85 neonates:100 cows in June 2017.

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.)

Fall composition surveys were conducted on October 11th, 12th and 16th of 2016; a total of 9385 caribou were classified. The bull to cow ratio was calculated at 41:100 and the calf to cow ratio was 54:100. Fall bull cow ratios have been stable since 2012. Calf cow ratios were the highest recorded since 1995.

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 did not collect blood samples in 2016. Previously, blood collections and serology have been analyzed to assess haptoglobin levels, which indicate inflammation, and to evaluate exposure to *Brucella suis* bacteria. In addition to these difficulties, the increased length of time required in the field to preserve serum samples and changes in staffing led us to eliminate blood collection from the methods this year, and instead instituted the use of nasal and eye swabs, which were collected from 50 of the captured adults. These were collected for storage, and no analyses have been conducted.

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. Some communities, notably Anaktuvuk Pass and Noatak, struggled to meet their needs.

ADF&G staff has made extensive efforts to inform Unit 22, 23 and 26a villages about the new registration caribou permits, RC 800 which went into effect in RY17, and RC 907 which went into effect in RY18. The new permits are designed to capture more accurate harvest information from resident hunters.

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 over 100 WAH mandibles during this reporting period. These jaws have not been processed to date.

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 participated in state advisory committee federal advisory committee meetings within Game Management Units 22, 23, 24 and 26A summarizing the population status of the WAH during this reporting period. Additionally, staff made

multiple visits to communities throughout the range of the WAH, and produced publications for consumption by the general public, including regulatory explanations, and Caribou Trails, the publication of the Western Arctic Herd Working Group.

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 2016.

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.)

Students from Selawik (5) and the Kotzebue Magnet School (4) participated in the Onion Portage collaring project during September 2016.

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 updated models for estimating 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 Unit 23 User Conflict Working Group, and several subsistence advisory panels associated with development (e.g. Red Dog Mine, and BLM's NPR-A panels).

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

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 calving.

Submitted by: Phillip Perry, Region V Management Coordinator

II. SIGNIFICANT DEVIATIONS AND/OR ADDITIONAL FEDERAL AID-FUNDED WORK NOT DESCRIBED ABOVE THAT WAS ACCOMPLISHED ON THIS PROJECT DURING THIS SEGMENT PERIOD

Additionally, due to an unallowable expense on the FY2017, AKW-7 grant report, $12,795 will be debited to this grant in FY2018, AKW-23.

III. PUBLICATIONS

None.

IV. RECOMMENDATIONS FOR THIS PROJECT

None.

Prepared by: Lem Butler and Brenda Bowers

Date: December 1, 2017