

**FEDERAL AID  
ANNUAL PERFORMANCE REPORT**

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

**CARIBOU  
ANNUAL SURVEY AND INVENTORY**

**STATE:** Alaska

**GRANT AND SEGMENT NO.** W-33-6

**PROJECT NO.** 3.0

**PERIOD:** 1 July 2007 – 30 June 2008

**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 herd.

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

**Regionwide Activities:**

ACTIVITY 1: Prepare biennial caribou management reports.

*Mulchatna & Nushagak Peninsula:* Biennial caribou management report not scheduled for this reporting period.

*Nelchina Caribou Herd:* Biennial report was completed in 2007.

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

	<b>Bulls (%)</b>	<b>Cows (%)</b>	<b>Calves (%)</b>	<b>Calves/ 100 Cows</b>	<b>Bulls/ 100 Cows</b>
<i>Northern Alaska Peninsula</i>	343 (20)	188 (75)	88 (5)	6.8/100	26.6/100
<i>Southern AK Peninsula</i>	55 (13)	374 (87)	2 (0)	0.5/100	14.7/100
<i>Mulchatna</i>	653 (16.6)	2,841 (72.1)	449 (11.4)	15.8/100	23.0/100
<i>Nushagak Peninsula</i>	96 (21.1)	240 (52.9)	118 (26.0)	40.0/100	49.2/100
<i>Nelchina*</i>				35/100	34/100*

\* 3,027 caribou observed; \*\* 54% small, 22% medium, 24% large

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

	Hunters	Bulls	Cows	Unknown	Total
<i>Kenai Mountain</i>					18
<i>Killey River</i>					4
<i>Mulchatna</i>					639
<i>Nushagak Peninsula</i>					0
<i>Nelchina (TC566)</i>	2,035	693	272	1	

*Northern & Southern Alaska Peninsula Herds:* No hunting was authorized during the 2007-08 season.

*Kenai Lowland Herd:* There was not an open hunting season for Kenai Lowlands caribou herd during the reporting period.

*Fox River Herd:* There was not an open hunting season for Fox River Herd during the reporting period.

**Northern Alaska Peninsula Herd:**

ACTIVITY 1: Conduct an aerial post-calving photocensus to estimate population size in cooperation with USFWS.

No population surveys were conducted in 2007-08 because other herds were a higher priority for this reporting period in Southwestern Alaska.

ACTIVITY 2: Conduct periodic radio-tracking surveys to determine distribution, movement and areas of preferred use.

No radio-tracking surveys were conducted in 2007-08 because other herds were a higher priority for this reporting period in Southwestern Alaska.

**Southern Alaska Peninsula Herd:**

ACTIVITY 1: Conduct an aerial post-calving photo-census of the herd to estimate population size.

Post-calving population estimate was conducted in July 2007 resulted in an estimate of 600 caribou.

**Kenai Lowland and Mountain Herd:**

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

A survey conducted on June 19, 2008, on the Kenai Lowland Herd counted 75 adult caribou with 23 calves. No surveys were conducted for the Kenai Mountains Herd during the reporting period due to budgetary constraints.

ACTIVITY 2: Monitor trends in calf weights to evaluate herd body condition.

No captures to assess calf weights were conducted due to budgetary constraints.

### **Killey River and Fox River Herds:**

ACTIVITY 1: In cooperation with the USFWS, conduct a post-calving aerial sex and age composition survey.

No post-calving aerial sex and age composition survey were conducted in 2007-08 because other herds were a higher priority for this reporting period in Southwestern Alaska.

### **Nelchina Herd:**

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

Final 2007 herd estimate (completed in June 2007): 32,569, 48 calves: 100 cows, 24 bulls: 100 cows

ACTIVITY 2: Monitor caribou seasonal distribution through relocation of radio-collared caribou.

No post-calving census or composition survey could be completed in June/July 2008. Caribou locations were monitored via fixed-wing flights in December 2007 and May 2008.

ACTIVITY 3: Capture up to 12 caribou and replace expiring radio collars.

In October 2007, 13 caribou calves (4-month old) were captured and fitted with radio collars. One additional adult was captured and her expiring radio collar was replaced. These numbers were above what our initial plan stated due to having a couple extra collars available.

ACTIVITY 4: Collect a sample of up to 20 calves to monitor trends in body condition.

No calves were collected due to suspension of body condition monitoring for this season.

### **Mulchatna Herd (Units 9A, 9B, 9C, 17, 18, 19A and 19B):**

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.

A post-calving photo-census of the Mulchatna Herd was not conducted during this reporting period.

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

Twenty-one radio-collars were deployed on female Mulchatna caribou.

### **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.

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A census of the Nushagak Peninsula Caribou Herd was conducted on January 30, 2008, producing an estimate of 556 caribou. Assisted USFWS with radio-tracking surveys to determine distribution, movements, and areas of preferred use.

**Submitted by:** Bruce Bartley

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

### **Regionwide Activities**

ACTIVITY 1: Monitor harvest and analyze harvest data.

Monitored preliminary harvest of 1879 caribou and analyzed harvest data.

ACTIVITY 2: Deploy and maintain radio-collars as needed on herds throughout the region to maintain an adequate sample size to conduct surveys.

Deployed 48 radio collars in various herds to maintain adequate sample of radioed animals to conduct surveys, with 1 mortality due to collaring.

ACTIVITY 3: Provide caribou management information to State and Federal regulatory processes.

Provided information to 15 State fish and game advisory committees, State Board of Game and 3 Federal regional councils.

### **Units 12 and 20D (portions) Macomb Caribou Herd:**

ACTIVITY 1: Estimate status, trends, and productivity from aerial surveys.

Estimated population status and trend from aerial surveys, resulting in a population estimate of 1,305 Macomb caribou and an increasing population trend.

ACTIVITY 2: Conduct a photocensus of the herd to determine population size.

Conducted an aerial population estimate survey on 9 October 2007 resulting in an estimate of 1305 Macomb caribou, but aerial photography unnecessary.

ACTIVITY 3: Conduct a prehunt aerial distribution survey to assist with managing the hunt by EO.

Conducted a prehunt aerial distribution survey on 23 August 2007 for 6.0 hours of survey time.

### **Units 19A, 19B, 19C, 19D, 21A and 21E Beaver Mountains, Big River-Farewell, Rainy Pass, Sunshine Mountain and Tonzona Caribou Herds:**

ACTIVITY 1: Estimate status, trends and distribution of the herds from aerial surveys.

Conducted minimum population surveys in June 2008 within portions of the range of the Tonzona and Big River caribou herds and found 34 caribou within these areas.

### **Unit 20A Delta Herd:**

ACTIVITY 1: Estimate productivity and bull: cow ratios from fall sex and age composition counts.

Conducted fall composition surveys (35 bulls:100 cows, 11 large bulls:100 cows, 24 calves:100 cows,  $n = 719$ ).

ACTIVITY 2: Conduct a photocensus of the herd to determine population size.

Conducted photocensus during summer 2008 (results pending).

**Units 20B, 20C, 20D, 20E, 25C (and adjacent Yukon, Canada) Fortymile Caribou Herd:**

ACTIVITY 1: Estimate status, trends and recruitment from aerial surveys.

Conducted a fall sex and age composition survey (calf and bull/100 cow ratios were 37 and 36/100; 12% of the herd sampled).

ACTIVITY 2: Conduct a photocensus to determine herd size.

Conducted pre-census flights to monitor herd distribution through June and early July and unsuccessfully attempted a photocensus on July 5<sup>th</sup>.

ACTIVITY 3: Conduct a prehunt aerial distribution survey to assist with managing the hunt.

Conducted 7 prehunt aerial distribution surveys to assist with managing the hunt.

ACTIVITY 4: Work with land agencies, landowners, and developers to mitigate developments detrimental to Fortymile caribou.

Worked with DNR, through the Habitat Division, on proposed subdivision land sale on Taylor Mountain; and provided comments related to impacts to game populations and habitat in the area.

**Units 20F, 21C, 21D, 24, and 25A Galena Mountain, Ray Mountains, and Wolf Mountain Caribou Herds:**

ACTIVITY 1: Estimate status, trend and productivity of the herds from photocensus and aerial surveys.

*Ray Mountain Herd:* In cooperation with BLM, conducted aerial surveys of Ray Mtn. Herd and counted 1176 caribou on 10/18/07, and 430 on 3/3/08.

*Galena Mountain Herd:* In cooperation with USFWS, conducted aerial surveys of Galena Mtn. Herd and counted 92 caribou on 11/1/07, counted 14 on 5/13/08, and 36 on 5/30/08.

*Wolf Mountain Herd:* Conducted aerial surveys of Wolf Mtn. Herd and counted 30 caribou on 5/13/08, counted 198 on 6/08/08.

**Units 20B, 20F and 25C White Mountains Caribou Herd**

Activity 1: Conduct fall sex and age composition survey.

Conducted a sex and age composition survey in October (37 calves: 100 cows, 39 bulls: 100 cows).

**Units 25A, 24B, 25D, and 26C (and adjacent Yukon, Canada) Porcupine Caribou Herd**

ACTIVITY 1: Estimate status, trend, and productivity from aerial surveys.

Estimated status, trend, and productivity from aerial surveys (Parturition rate 79% for cows  $\geq$  4 years old ( $n = 63$ ), 83% for 3-year-olds ( $n = 6$ ) and 14% for 2-year-olds ( $n = 7$ ); late June calf: cow ratio 59% for radiocollared cows  $\geq$  4 years of age ( $n = 53$ ); 50% for 3-year-olds ( $n = 6$ ); and no 2-year-olds ( $n = 5$ ) observed with calves.)

ACTIVITY 2: Conduct a photocensus to determine herd size.

Conducted a photocensus on July 1, 2007, but determined that quality of photos insufficient to estimate population size.

**ACTIVITY 3: Conduct calving ground surveys.**

Conducted calving ground surveys (Parturition rate 79% for cows  $\geq 4$  years old ( $n = 63$ ), 83% for 3-year-olds ( $n = 6$ ) and 14% for 2-year-olds ( $n = 7$ ); late June calf: cow ratio 59% for radiocollared cows  $\geq 4$  years of age ( $n = 53$ ); 50% for 3-year-olds ( $n = 6$ ); and no 2-year-olds ( $n = 5$ ) observed with calves.)

**Units 26B and 26C Central Arctic Caribou Herd**

**ACTIVITY 1: Conduct a photocensus to determine herd size.**

A photocensus was not conducted due to weather and lack of aggregation.

**ACTIVITY 2: Conduct fall sex and age composition survey and determine distribution.**

No fall sex and age composition surveys were conducted because data was not needed at this time.

**ACTIVITY 3: Estimate parturition rates and calf: cow ratios in June by radio-tracking collared females.**

Parturition rate was 98% ( $n=46$ ). Late June calf: cow ratio was 91% ( $n=46$ ).

**ACTIVITY 4: Work with the oil industry and other agencies to minimize disturbance to caribou from resource development.**

Worked with oil industry via phone, email to minimize disturbance to caribou

**Submitted by:** Roy A. Nowlin, Management Coordinator

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

### **Regionwide Activities:**

ACTIVITY 1: 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 brown bear information to the State Board of Game, State Fish and Game Advisory Committees, Federal Subsistence Board, and Federal Subsistence Regional Advisory Councils.

### **Unit 18:**

ACTIVITY 1: Monitor herd dynamics using radiocollars 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 radiotelemetry flights in July 2007 to determine herd distribution and again during October 2007 to support caribou composition surveys.

ACTIVITY 2: Monitor caribou movements north of the Yukon River.

Caribou from the Western Arctic herd occasionally use the portion of Unit 18 north of the Yukon River; however, none were observed or reported in this area during this reporting period.

ACTIVITY 3: Conduct fall aerial sex and age composition counts.

We assisted with fall sex and age composition count in October 2007 by radiotracking caribou from a R-44 helicopter from Dillingham to classify Mulchatna herd caribou. The results from those flights are listed in the GMU 17 section.

ACTIVITY 4: Conduct spring aerial or ground based surveys of caribou in Unit 18 to assess recruitment and distribution.

We conducted a caribou calving flight on 29 May 2008. We did not document any caribou with calves during this flight.

ACTIVITY 5: Participate in photocensuses of caribou herds that use Unit 18.

The Mulchatna Caribou herd was photographed in July 2008. We assisted in the photocensus by radiotracking caribou once in the last week of June 2008.

ACTIVITY 6: Participate in radiocollar deployments and sample collections from caribou from herds that use Unit 18. (These captures are associated with Mulchatna Herd and totals are reported in Region II AWP.)

Caribou were poorly distributed; therefore, department staff did not complete radiocollar deployments during the reporting period.

ACTIVITY 7: 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.

**ACTIVITY 8:** Continue to improve communication with the public.

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

**ACTIVITY 9:** Develop updated population objectives in cooperation with the public and other agencies.

We participated in a technical meeting in Dillingham with other area and regional offices and agency biologists to address common needs related to the Mulchatna caribou herd, including population objectives.

**Teshkepuk Herd (Unit 26A):**

**ACTIVITY 1:** Conduct a photocensus to estimate population size of the herd.

We attempted a photocensus in July 2007 but weather conditions prevented successful completion.

**ACTIVITY 2:** Monitor distribution and movements using satellite collar data, radiotelemetry data and aerial survey observations.

We looked at distribution maps generated by the Nome office throughout the year to monitor movements of satellite collared bulls and cows. Satellite collars and VHF radiotracking data revealed that most of the herd wintered in northeastern Unit 26A and the foothills of Unit 26A and western Unit 26B, similar to 2005-2006 and 2006-2007. This is a change from years before 2004 when most TCH animals wintered in the Atqasuk area. Most of the TCH calved in the Teshkepuk Lake region.

**ACTIVITY 3:** Monitor hunting and other mortality factors through harvest reporting, public contacts and field observations.

Field observations and public reports indicated that the mortality rate in the herd during the past year was normal, with no significant die-offs reported. The mortality rate of collared females was 18%, slightly higher than the long term average of 16%.

**ACTIVITY 4:** Collect harvest information through the North Slope Borough and the ADF&G Subsistence Division.

The Subsistence Division, in cooperation with the Inupiat Community of the Arctic Slope, continued to collect harvest data from three North Slope villages. Results of harvest estimates and radiocollar distribution data were used to estimate that approximately 4965 caribou were harvested from the TCH during 2006-2007.

**ACTIVITY 5:** Develop updated population objectives in cooperation with the public and other agencies.

We discussed population objectives for the TCH with the NSB Fish and Game Management Committee, as well as at public meetings.

**ACTIVITY 6:** Attend meetings with management agencies, oil companies, and caribou users with the intent of minimizing conflicts between the herd and major development projects.

We attended at least 6 meetings related to the TCH and spent time on the Environmental Impact Statement (EIS) process related to oil development, including meetings with BLM to address the Northeast and the Northwest Planning Units of the NPR-A and the Alpine Satellite Development Project.

ACTIVITY 7: Capture bulls and cows to attach satellite, GPS, and conventional radiocollars. Up to 28 caribou will be captured.

Using an R-44 helicopter and hand-held net gun, we captured 35 TCH cows. We attached 9 VHF collars and 27 GPS collars. We replaced 15 PTT, VHF and GPS collars that were nearing their end of their battery life. We used blindfolds and hobbling equipment to restrain caribou. No drugs were used. There were 3 capture mortalities. The current number of radiocollared caribou is 60, including 8 PTT, 27 GPS, and 25 VHF transmitters. There are currently no collared males in the herd.

ACTIVITY 8: 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 35 caribou that were captured. The blood, fecal and hair samples are being analyzed as part of a cooperative project with the NSB.

ACTIVITY 9: Conduct fall composition surveys during October.

Fall composition surveys were flown on 2 and 3 November 2007. We visually located 16 radiocollared cows and 3 of them had calves (19 surviving calves:100 cows). An additional 2213 caribou were classified in the vicinity of radiocollared caribou and we found 420 calves (19 % or 23 calves:100 adults).

ACTIVITY 10: Conduct aerial surveys during April and May to assess short yearling recruitment.

Short yearling surveys were flown on 9-21 April 2008. We located 31 radiocollared cows of which 9 had short yearlings (29 calves:100 cows). An additional 3718 caribou were classified in the vicinity of radiocollared caribou and we found 596 short yearlings (16 % or 19 short yearlings:100 adults). This is higher than the 10-year average of 17 short yearlings:100 adults.

ACTIVITY 11: Use telemetry and ground observations to carefully monitor summer movements of Teshekpuk Herd caribou.

We monitored the distribution of TCH caribou on and near their insect relief areas using a combination of satellite telemetry and radio tracking flights. Most TCH animals were north of Teshekpuk Lake from mid-June until late June, then they gradually moved south during July, and were widely distributed between Wainwright and the Colville River by mid-August.

ACTIVITY 12: Conduct calving location and productivity aerial surveys in June.

Calving surveys were conducted on 6-10 June 2008. We located 43 adult cows. The parturition rate was 72%, 29 cows were seen with calves (62 %), and 28 of observed calves survived to the end of the calving period (97 %). Of the cows that did not have calves, 8 had no antlers and no udder and 4 had soft antlers. While most calving was concentrated in the vicinity of Teshekpuk Lake, we also observed 3 cows that calved with

Central Arctic caribou and 1 caribou that calved with Western Arctic caribou. Of those 4 caribou, 2 had previously calved near Teshekpuk Lake.

ACTIVITY 13: Use satellite collar information and conduct VHF radiocollar telemetry surveys to determine the relative abundance of North Slope caribou herds in hunting areas during the time of the year when people do most of their hunting.

VHF radiotracking surveys were flown and satellite collar information will be examined to determine the relative numbers of caribou from the TCH, Central Arctic herd (CAH) and the Western Arctic herd (WAH) in hunting areas when people are hunting. Analyses comparing relative caribou density to spatially explicit harvest locations will be used to estimate the proportional harvest from different caribou herds.

ACTIVITY 14: Involve students in the capture operations, work with students to track satellite collared caribou movements and lecture to school classes about caribou biology.

Several lectures were delivered to students from North Slope schools on population dynamics, genetics, and general information on the TCH.

### **Western Arctic Herd** (Units 22, 23 and 26A)

ACTIVITY 1: Conduct a photocensus to estimate population size of the herd. (timing depends on herd aggregation and activities may occur in late June/early July 2007).

We photographed the WAH during July 12 and 13. Overlap lines were placed on prints during December. We completed counting the photos in April. The final estimate was 377,000 caribou.

ACTIVITY 2: Conduct periodic radiotracking flights to monitor herd distribution.

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

ACTIVITY 3: Deploy approximately 45 radiocollars to maintain a year-end sample size of at least 100 operational radiocollars on living caribou.

48 radio collars (24 conventional and 24 satellite) were deployed in the WAH during September 2007; 12 collars were deployed on bulls and 36 on cows. There were no capture mortalities during collaring; however, 1 bull died within several miles of the collaring site. We presume its death was caused by lacerating the jugular vein while collecting blood.

ACTIVITY 4: Conduct aerial surveys during April and May to assess short yearling recruitment.

We classified 11718 caribou (10634 adults and 1084 calves) during spring 2008 and observed 11 calves:100 adults. The lowest ratio ever recorded prior to 2008 was 12 calves:100 adults in 2002.

ACTIVITY 5: Conduct aerial surveys during June to monitor initial calf production and the distribution of calving areas.

We visually located 76 radiocollared female caribou and observed a ratio of 70 neonates:100 cows in June 2008.

ACTIVITY 6: Conduct aerial surveys during October to assess herd composition and retrieve radiocollars.

The fall 2007 Board of Game meeting precluded fall composition surveys.

ACTIVITY 7: Collect blood samples from approximately 100 captured caribou to monitor the incidence of selected diseases and pathogens.

We collected a blood sample from 61 caribou during September 2006. Haptoglobin levels were assessed for 44 caribou and 1 caribou (25 %) were elevated. This was the highest proportion of individuals with elevated haptoglobin levels ever recorded. None of the 44 caribou tested for exposure to *Brucella suis* were positive. In addition to collecting blood, we also necropsied 10 caribou to assess health and body condition. Gross findings and preliminary laboratory analyses did not reveal any health issues in this herd.

ACTIVITY 8: Monitor hunting and other mortality factors through harvest reporting, collection of biological specimens and public contacts.

No biological specimens were collected from hunters during the reporting period. Harvest levels based on community-based assessments were comparable to previous years. Statewide harvest reports indicate that numbers of Alaska resident hunters who live outside the range of this herd and nonresident hunters substantially declined in 2007-2008. This decline occurred across all units used by this herd and, as in the past, most visiting hunters (78%) hunted in Unit 23.

ACTIVITY 9: 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.

We spoke to hunters about hunting regulations and harvest reporting requirements.

ACTIVITY 10: 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 annual meeting in March 2008.

ACTIVITY 11: Involve students in the Onion Portage collaring project to improve public relations and support wildlife education.

Students from Kiana and Kotzebue High Schools participated in the Onion Portage collaring project during September 2007.

ACTIVITY 12: Analyze harvest data collected from selected communities within the range of the Western Arctic Caribou Herd.

Community harvest data indicates the harvest of WAH caribou by people residing within the range of this herd has been ~14,000-15,000 caribou annually. It appears that overall 'local' harvest levels have been relatively stable from the late 1990s through this reporting period.

**Submitted by:** Peter Bente, Survey and Inventory Coordinator, Region V