## ANNUAL SURVEY AND INVENTORY

**STATE:** Alaska

**GRANT AND SEGMENT NO.** W-33-10

PROJECT NO. 3.0

**PERIOD:** July 1, 2010 – June 30, 2011

PROJECT LOCATION: RII, RIII, RIV, and RV

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

Populations

**REPORT DESCRIPTION:** This performance report describes caribou survey and inventory

activities. Activities are listed by game management unit.

#### **Region II Activities:**

Activity 1: Prepare biennial caribou management reports.

Caribou management report was submitted to Headquarters for publishing during the summer 2011. Staff continue to work on data collection for future reports.

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

Surveys were only completed for Kenai and Kodiak Herds. See individual unit activities below.

Activity 3: 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: Units 7&15

ACTIVITY 1: Kenai Lowland and Kenai Mountain Herds:

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

During June 2012 we counted 123 caribou which included 31 calves (25% calves).

- During March 2012 we counted 175 caribou in the Kenai Mt. Herd
- 2. Capture up to 15 caribou and replace expiring radio collars.
  - No captures were conducted due to budget constraints.

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

There was not an open hunting season for Kenai Lowlands caribou herd during the reporting period. The reported harvest for Kenai Mtn. caribou was 26 caribou including 21 males and 5 females. Two-hundred fifty permits were issued for Kenai Mtn. caribou.

ACTIVITY 2: Killey River and Fox River Herds:

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

No surveys were conducted during the reporting period on the Killey River herd due to budget constraints. Forty-six caribou were counted in the Fox River herd during Oct. 2011.

2. Monitor the caribou harvest through field observations, hunter harvest reports and contact with hunters.

Six bulls were taken in the Killey River Herd and 1 bull was taken from the Fox River Herd during the reporting period.

## Unit 8 Kodiak Herd:

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

Three surveys were conducted in 2011. We estimate the herd size to be between 250-300 caribou and the population stable.

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

Hunters harvested 12 caribou (10 bulls, 2 cows) in 2010/11, down from the 2010/11 harvest of 13 caribou, and below the 5-year average of 17.6 caribou.

## Submitted by: Gino Del Frate

Date: 2 September 2012

## **Region III Activities:**

<u>ACTIVITY 1: Monitor harvest and analyze harvest data.</u> Monitored preliminary harvest of 2,939 caribou and analyzed harvest data.

ACTIVITY 2: Capture approximately 50 caribou to deploy radiocollars and maintain an adequate sample size of collared animals for surveys.

Deployed 72 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, 3 Federal regional councils, and the Federal Subsistence Board.

ACTIVITY 4: Prepare biennial caribou management reports. Prepared biennial caribou management reports.

### Activities by Unit [and/or herd]

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

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

Conducted aerial surveys to determine herd distribution and productivity, suggesting a stable population.

ACTIVITY 2: Conduct a photocensus of the herd to determine population size. Conducted a photo census to determine herd size of 1,700.

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

Conducted a prehunt distribution survey to assess potential harvest during the motorized access portion of the hunt.

# 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 estimation survey in June 2012 within the range of the Beaver and Sunshine caribou herds and found 851 caribou, including 113 calves.

### Unit 20A Delta Herd

ACTIVITY 1: Estimate productivity and bull:cow ratios from fall sex and age composition counts. Conducted fall composition survey (67 bulls and 30 calves per100 cows).

<u>ACTIVITY 2: Conduct a photocensus of the herd to determine population size.</u> Conducted photocensus summer 2011 (minimum estimate = 2972 caribou).

### Chisana Caribou Herd

ACTIVITY 1: Participate in Chisana management planning process.

Worked cooperatively with Yukon Department of Environment, Yukon First Nations, Tetlin Wildlife Refuge and US Park Service to draft a draft management plan for the Chisana Herd.

ACTIVITY 2: Estimate productivity and bull:cow ratios from fall sex and age composition counts. Completed fall composition count in cooperation with NPS and Yukon Wildlife staff; observed ratios of 23 calves:100cows and 42 bulls:100 cows.

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 25 and 42/100; 8% of the herd sampled).

<u>ACTIVITY 2: Conduct a photocensus to determine herd size.</u> Photocensus not completed because of poor census conditions.

ACTIVITY 3: Conduct aerial distribution surveys before and during the hunting seasons and conduct hunter check stations to assist with managing harvest.

Conducted aerial distribution surveys before and during the fall and winter hunts; and no hunter checkstations conducted.

# 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.

In cooperation with USFWS, conducted aerial surveys of Galena Mtn. Herd and counted 93 on 06/20/11.

In cooperation with USFWS, conducted aerial surveys of Galena Mtn. Herd and counted 147 on 02/08/12.

In cooperation with USFWS, conducted aerial surveys of Wolf Mtn. Herd and counted 462 on 06/27/11.

In cooperation with BLM, conducted aerial surveys of Ray Mtn. Herd and counted 1213 on 07/10/11

### 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 (24 calves:100 cows, 50 bulls:100 cows).

ACTIVITY 2: Conduct radiotelemetry flights to monitor herd demographics.

Conducted radiotelemetry flights in May, June, July, and October to monitor herd demographics.

Units 25A, 24B, 25D, and 26C (and adjacent Yukon, Canada) Porcupine Caribou Herd ACTIVITY 1: Estimate parturition rates and calf:cow ratios in June by radio-tracking collared females.

Conducted radiotracking flights to estimate parturition rate and calf:cow ratio in June 2012, however, estimates not obtained due poor weather prohibiting aerial observations.

ACTIVITY 2: Conduct a photocensus to determine herd size.

No photocensus conducted due to poor weather conditions and herd aggregation.

ACTIVITY 3: Conduct household harvest surveys.

Household surveys not conducted because funding reallocated to photocensus and captures.

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

ACTIVITY 1: Conduct fall sex and age composition surveys.

Conducted a fall se sex and age composition survey on 13 October 2011; Classified 5,187 caribou, resulting in a bull:cow ratio of 69 bulls per 100 cows and a calf:cow ratio of 57 calves per 100 cows.

ACTIVITY 2: Estimate parturition rates and calf:cow ratios in June by radio-tracking collared females.

Radio-tracked females and obtained a preliminary parturition rate of 87% for females  $\geq$  3year olds (*n*=31) and preliminary late June calf:cow ratios of 64% for females  $\geq$  3 years old (*n*=33).

Submitted by: Roy A. Nowlin, Management Coordinator

#### **Region IV**

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

#### Regionwide

ACTIVITY 1: Prepare biennial caribou management reports.

The next biennial caribou management report is due to DWC HQ on 1 May 2013.

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	15	71	14	100 Cows 19	22
	-	/ 1	14	19	
Nelchina	28	49	22	45	57
Northern Alaska Peninsula	18	69	13	20	26
Nushagak Peninsula	17	60	23	39	29
Southern AK Peninsula	25	62	13	20	40
Unimak	5	89	6	7	6

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

	Hunters	Bulls	Cows	Unknown	Total Harvest
Mulchatna	632	228	240	11	479
Nelchina	3334	1476	551	2	2029
Northern Alaska Peninsula	1	2	0	0	2
Nushagak Peninsula	0	0	0	0	0
Southern Alaska Peninsula	0	0	0	0	0
Unimak	0	0	0	0	0

The state hunting seasons for the Northern Alaska Peninsula caribou herd, Nushigak Peninsula caribou herd, the Southern Alaska Peninsula caribou herd, and the Unimak caribou herd 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:

<u>ACTIVITY 1: Monitor caribou distribution through relocation of radio-collared caribou.</u> Radio-tracking flights conducted throughout the year. Seasonal distribution determined.

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

No post-calving photo-census of the Mulchatna Herd was conducted during summer of 2011 due to poor weather conditions.

ACTIVITY 3: Capture up to 20 caribou and replace expiring radio collars. A total of 18 radio-collars were deployed on Mulchatna caribou.

### Nelchina Herd:

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

On 29 June 2012, a post-calving census, and a sex and age composition survey were flown. A total of 46,496 caribou were observed during a conventional census. A total of 5,013 caribou were observed during the composition survey: 947 (19%) bulls, 3,027 (60%) cows, and 1,039 calves (21%).

ACTIVITY 2: Monitor caribou seasonal distribution through relocation of radio-collared caribou. Caribou locations were monitored via fixed-wing flights in October 2011, December 2011, April 2012, and June 2012.

ACTIVITY 3: Capture up to 15 caribou and replace expiring radio collars.

Due to herd growth and above average mortality of radio-collared animals the previous few years, the radio-collared sample of caribou was too low to adequately manage and track the herd. Additional radio collars were deployed during this reporting period. In October 2011, 20 caribou calves (4-month old) were captured and fitted with radio collars.

### Northern Alaska Peninsula Herd:

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

No photocensus was conducted in 2011-12, due to poor weather conditions.

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

Radiotracking flights were conducted during July, October and December 2011 and during January, February, April and May 2012.

### 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.

A census conducted on February 24, 2012, estimated a minimum population of 805 caribou. 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 an aerial post-calving photocensus of the herd to estimate population size and a sex and age composition survey.

No photocensus was conducted in 2011-12 due to poor weather conditions.

Results of fall 2011 composition survey:

<b>Cows</b> (%) 547 (62)	<b>Calve</b> 115 (1	· /	<b>Bulls</b> (%) 231 (25)	<b>Total</b> 920
<b>Calves/100 (</b> 20.0	Cows	<b>Bulls</b> 40.2	/100 Cows	

#### Unimak Herd:

ACTIVITY 1: 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 2011-12 due to poor weather conditions.

Results of fall 2011 composition counts:

<b>Cows</b> (%)	<b>Calves</b> (%)	<b>Bulls</b> (%) 6 (5)	<b>Total</b>	
104 (89)	7 (6)		117	
Calves/100 Cows 6.7		Bulls/100 Cows 5.8		

Submitted by: Lem Butler, Region IV Management Coordinator

Date: 15 August, 2012

### **Region V 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 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

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 radio telemetry flights in October and December 2011 as well as in March and June 2012.

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 2011 by radiotracking caribou for an R-44 helicopter from Dillingham used 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.

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

ACTIVITY 5: Participate in photocensuses of caribou herds that use Unit 18. Poor weather prevented the Mulchatna caribou herd from being photographed in July 2011.

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.)

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

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. Reported harvest from the MCH in GMU 18 is 122 caribou for RY 2011.

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

### **Teshekpuk Herd** (Unit 26A):

ACTIVITY 1: Conduct a post-calving photocensus.

We conducted a post-calving photocensus on 20 July. We estimated the population to be approximately 55,000 at the time of photography.

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

We looked at distribution maps throughout the year to monitor movements of satellite collared bulls and cows. Satellite collars and VHF radiotracking data revealed that a small proportion of the herd wintered in northwestern Unit 26A with a large proportion wintering in the central Brooks Range between Anaktuvuk Pass and Chandalar Lake. Calving was distinctly different than 1990-2009, with a large number of caribou calving well outside historical calving areas, similar to 2010 and 2011.

ACTIVITY 3: Collect harvest information through the North Slope Borough and the Subsistence Division. Monitor mortality rates and causes through field observations of collared individuals and investigation of large-scale die-off events.

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 10% (n=67), lower than the long term average of 14%. No harvest data were collected during the reporting period.

ACTIVITY 4: Develop updated population objectives in cooperation with the public and other agencies.

We discussed population objectives in advisory committee meetings, but did not develop alternative objectives.

ACTIVITY 5: 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 3 meetings related to the TCH and development concerns. We continue to work cooperatively with BLM, oil companies, and consultants to address management and mitigation concerns.

ACTIVITY 6: Capture bulls and cows to attach satellite, GPS, and conventional radiocollars. 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 27 TCH cows and 7 bulls. We attached 7 VHF collars, 7 PTT collars and 17 GPS collars. We replaced 20 collars (VHF 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 were 3 capture mortalities. The current number of radiocollared caribou is 81, including 45 PTT and GPS collars, and 36 VHF transmitters.

ACTIVITY 7: Weigh, measure and collect blood, fecal and hair samples from all captured adult 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 34 caribou that were captured (Activity 6). The blood, fecal and hair samples are being analyzed as part of cooperative projects with the North Slope Borough and the University of Alaska.

ACTIVITY 8: Collect jaws of hunted caribou to develop age structure models for the herd, and assess herd health through morphometric indices of jaw growth.

We made no significant progress toward beginning a jaw collection program, although the idea was discussed on the radio, and in public forums.

ACTIVITY 9: Conduct sex and age composition surveys during mid-summer and/or October Fall composition surveys were flown on 21-22 October 2011 with fixed-wing aircraft. A total of 5792 caribou were classified in the vicinity of radiocollared caribou, and we found 31calves:100 adults. Overlap with the Central Arctic and Western Arctic Herds was extensive, reducing the utility of these results ACTIVITY 10: Conduct aerial surveys during April and May to assess short yearling recruitment and range-wide distribution.

Short yearling surveys were flown on 4-5 April 2012. We located 26 radiocollared caribou. Using a helicopter, a total of 3291 caribou were classified in the vicinity of radiocollared caribou and we found 25 short yearlings:100 adults, and 31 short yearlings:100 cows. This is higher than the 10-year average of 17 short yearlings:100 adults. Using a helicopter, we were able to confirm that segregation of adult caribou was extensive, and the bull:cow ratio was much less than that estimated during fall composition (27:100 versus 46:100).

ACTIVITY 11: Conduct calving location and productivity aerial surveys in June.

Calving surveys were conducted on 6-12 June 2011. We located 46 adult cows. The parturition rate was 52%, 18 cows were seen with calves (39%). 5 of the 46 adults cows had visible soft antlers at the time of the survey. Calving was concentrated in two areas, one well to the west of areas typically used in the past 20 years, and the other within the area most frequently used in the past, south of Teshekpuk Lake. This distribution was similar to that of 2011. One notable difference in 2012 was the presence of calving caribou south of the Colville River.

ACTIVITY 12: 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.

Although we did not conduct analyses to quantitatively estimate the relative proportions of neighboring herds within hunting areas, the distribution of satellite caribou from the WAH and TCH would appear to indicate that during the summer months (June-August), caribou near the hunting areas of Wainwright, Barrow, and Atqasuk were predominately TCH caribou, as analyses in the past have indicated. By September, and through the winter months however, hunters in Wainwright appeared to have a significant number of WAH caribou in the area. Near Nuiqsut, caribou appeared to be relatively even split between TCH and CAH caribou, although a local preference for hunting to the west implies that the harvest is largely composed of TCH caribou.

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

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

The July 2009 photocensus was corrected during this reporting period after discovering an error made during the counting process. The adjusted herd size is 348,000. We conducted a 2011 photocensus during 25 June-10 July 2011. The estimate of 325,000 was finalized in May 2012.

# ACTIVITY 2: Conduct periodic radiotracking flights to monitor herd distribution and estimate mortality.

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

ACTIVITY 3: Deploy approximately 30 radiocollars to maintain a year-end sample size of at least 100 operational radiocollars 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.)

29 radio collars (19 GPS and 10 satellite) were deployed in the WAH during September 2011; 8 collars were deployed on bulls and 21 on cows. There were no capture mortalities during this activity.

ACTIVITY 4: Conduct aerial surveys during April and May to assess short yearling recruitment. We classified 9,027 caribou (8,015 adults and 1,012 calves) during spring 2012 and observed 13 calves:100 adults.

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

We visually located 71 radiocollared female caribou and observed a ratio of 62 neonates:100 cows in June 2012.

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

We did not conduct fall composition surveys in 2012 due to scheduling conflicts.

ACTIVITY 7: Collect blood samples from approximately 100 captured caribou 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 sample from 63 caribou during September 2011. No results are available for haptoglobin levels Or *Brucella suis* at this time.

ACTIVITY 8: Collect mandibles from up to 400 caribou annually to monitor body size, body condition and age structure.

We collected 188 mandibles during this reporting period. Jaws were measured using CARMA protocol to monitor size; a tooth was extracted to determine age; and marrow from fresh jaws was weighed to determine body condition. Analyses are not yet complete.

ACTIVITY 9: Monitor hunting and other mortality factors through harvest reporting, collection of biological specimens and public contacts.

Some mandibles were collected from hunters during the reporting period (see Activity 8 above). 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. As in the past, most visiting WAH hunters hunted in Unit 23 during the 2011-2012 regulatory year.

ACTIVITY 10: Capture and euthanize up to 10 adult caribou for thorough health assessment, including disease and parasite prevalence, body condition, and contaminant and trace mineral levels. (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.)

A health assessment was not conducted during this reporting period. This activity is scheduled for September 2012.

ACTIVITY 11: 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 12: 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 2012.

ACTIVITY 13: Involve students in the Onion Portage collaring project to improve public relations and support wildlife education.

Students from Shungnak and Ambler High Schools participated in the Onion Portage collaring project during September 2011.

ACTIVITY 14: 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

**Date:** 1 September 2012