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CHAPTER 5: CARIBOU MANAGEMENT REPORT

From: 1 July 2012
To: 30 June 2014

LOCATION

GAME MANAGEMENT UNIT: 9D (3,325 mi^2)

HERD: Southern Alaska Peninsula

GEOGRAPHIC DESCRIPTION: Southern Alaska Peninsula

BACKGROUND

The range of the Southern Alaska Peninsula caribou herd (SAP) extends from Port Moller to Isanotski Strait. There have been reports of caribou moving between the Alaska Peninsula and Unimak Island, including what may have been a substantial immigration from Unimak in 1976. Nonetheless, genetic studies have determined that caribou on Unimak Island are genetically isolated from mainland caribou with sufficient fidelity to calving areas on the island to be designated a separate herd from SAP. Both radiotelemetry and genetic studies indicate SAP is also separate from the Northern Alaska Peninsula caribou herd (Zittlau et al. 2009, Mager 2012). In October 1998, 6 caribou in the extreme southeastern corner of Unit 9E and 8 caribou in the northeastern portion of Unit 9D were fitted with satellite collars to further investigate whether interchange between herds occurred in this area. None of these caribou moved from the unit in which they were captured. Genetic testing for interbreeding among caribou in Units 9E and 9D and Unimak Island also confirms relatively little genetic interchange between these herds.

Skoog (1968) speculated that the Alaska Peninsula was marginal habitat for sustaining large caribou populations because of severe icing conditions and ash from frequent volcanic activity affecting food supply and availability. Mager (2012) indicates the genetic differentiation of SAP is due in part to geographic barriers and isolation. SAP has been characterized by wide population fluctuations, ranging from 500 to more than 10,000 caribou. Following a peak of more than 10,000 caribou in 1983, SAP began a precipitous decline. By 1993 the herd was below the 2,500 threshold at which all hunting was to be closed. The population stabilized during the mid-1990s and grew slowly to 4,100 caribou by 2002. From 2002 to 2007 estimates of calf recruitment were chronically low, and population size declined rapidly. Calf recruitment increased dramatically in regulatory years (RY) 2008 (regulatory year begins 1 July and ends 30 June, e.g., RY08 = 1 July 2008–30 June 2009) through RY10 following selective wolf removal on the calving grounds.

Recent herd history includes growth from 1996 to 2002, decline from 2002 to 2007, and renewed growth from 2008 to 2011.

Harvest of SAP was fairly high from RY80 to RY85, probably exceeding 1,000 in several years. Starting in RY86, restrictive regulations reduced harvests as the herd continued to decline. By RY93 the herd was below 2,500 and all hunting was closed through RY98. In RY99 a state hunt with a 1 caribou bag limit was resumed in Unit 9D with a resident season 1–20 September and 15 November–31 March. Between RY99 and RY04 the bag limit was 1 caribou for residents and 1 bull for nonresidents. In RY05 the resident bag limit went from 1 caribou to 1 bull in the fall portion of the season or 1 antlerless caribou during the winter. State and federal hunts were once again closed in RY08 because of concern over the herd's status.

Poor nutrition appears to have played a major role in the decline of SAP in the 1980s and early 1990s. Predation by wolves and brown bears, and human-induced harvest may also have contributed to the decline (Pitcher et al. 1990). A survey by Izembek National Wildlife Refuge (INWR) staff early in 1997 showed a substantial increase in numbers, and a federal subsistence season was opened that fall. The herd continued to grow slowly and in RY99 a general state hunt was opened. Herd size grew to 4,100 caribou by 2002. Following this brief recovery, calf recruitment decreased and population size began to decline. Little data were collected during the initial decline to assess the underlying cause, but recent investigations have shown that wolf predation on the calving grounds significantly reduced calf survival and recruitment. State and federal hunts were closed in RY07 due to increasing concern for the status of the herd, and a predator control program was initiated to reduce wolf predation on caribou calves. Selective removal of 28 wolves in RY07 during calving immediately improved calf survival. This program continued with selective removal of 8 wolves in RY08 and 2 wolves in RY09, after which the program was deactivated. Calf recruitment increased dramatically during RY08–RY10 following selective wolf removal on the calving grounds.

MANAGEMENT DIRECTION

MANAGEMENT OBJECTIVES

1. Sustain a total population with a minimum of 3,000 caribou and a maximum of 4,000 caribou.

2. Maintain a fall bull:cow ratio of 35:100.

3. Provide limited harvest of bulls when the herd exceeds 1,000 caribou.

4. Cow harvests may be authorized when the population exceeds 2,000 caribou and population size is increasing.

METHODS

POPULATION STATUS AND TREND

Population Size

Postcalving population count surveys were conducted in late June or early July when weather allowed. Caribou groups were located by fixed-winged aircraft equipped with radiotelemetry equipment. Oblique photos of large groups (≥20 caribou) were taken to allow accurate enumeration. Survey comprehensiveness was assessed using the proportion of radiocollared caribou encountered relative to total radiocollared caribou. Population estimates were calculated

by dividing the minimum caribou count number by the proportion of radiocollared caribou encountered. Calf percentages were calculated from direct enumeration of caribou in close-up photos of larger herds. INWR staff periodically conducted winter aerial counts along systematic transects.

Population Composition

Sex and age composition surveys were conducted during the month of October between Port Moller and Isanotski Strait. Caribou were classified from a helicopter as calves, cows, and small, medium, and large bulls.

Parturition Surveys

Surveys have been conducted since June 1997 when funding was available. In late May or early June a helicopter was used to classify caribou on the calving grounds as parturient cow (with calf, hard antlers or distended udder), nonparturient cow, yearling, or bull (Whitten 1995). We also observed radiocollared females to document age-specific pregnancy rates.

Radiotelemetry Data

The goal is to maintain 30 VHF radio collars on adult female caribou to aid in locating the herd during surveys and to obtain basic information about the animal's condition. Caribou were captured and marked with radio collars with the help of funding provided by the U.S. Fish and Wildlife Service, Office of Subsistence Management. During each capture, standard measurements and blood samples were taken when feasible. Herd distribution and survival rates are monitored periodically by radiotracking of collared animals.

Mortality

Harvest was monitored through state harvest tickets and federal subsistence permits until 2008 when all hunting was closed. Caribou calf mortality studies were conducted in 1989–1990 (Pitcher et al. 1990), 1999 (Sellers et al. 1999), 2008–2010 (L. G. Butler, ADF&G, unpublished data, King Salmon), and 2013 (D. W. Crowley and T. A. Rinaldi, ADF&G, unpublished data, King Salmon). A calf mortality study scheduled for 2014 was cancelled due to eruption of lava and ash from Pavlof Volcano in the study area. Range conditions were studied in 1991 and 1992 (Post and Klein 1999).

RESULTS AND DISCUSSION

POPULATION STATUS AND TREND

Population Size

In February 2012 the U.S. Fish and Wildlife Service counted 1,061 caribou in SAP (Table 1).

Population Composition

Calf ratio temporarily decreased during the reporting period—an expected result as many immature cows were being recruited into the population following wolf control (Table 1). By RY13, calf ratio rebounded to 40 calves:100 cows. Bull:cow ratios have remained at or above management objectives of 35:100 since RY11 (Table 1).

Distribution and Movements

Data from radiotracking surveys indicate that SAP has 2 main calving areas. Approximately 40% of the herd calves on the Caribou River flats. Many of these animals are relatively sedentary and remain in the area throughout winter. However, some have been located during the winter near Cold Bay. The remainder of the herd calves in the Black Hills-Trader Mountain area and winters near Cold Bay. Additionally, a few caribou calve in the mountains east of the Caribou River flats, in the mountains at the headwaters of the Joshua Green River, and in the mountains southwest of Cold Bay and south of Morzhovoi Bay.

MORTALITY

Harvest

Seasons and Bag Limits. For the federal subsistence hunt FC0909 that opened in RY12 the bag limit was 1 bull caribou. The season dates were 10 August–20 September and 15 November–31 March. Starting in RY13 the bag limit for the state's new Tier II TC506 hunt was 1 bull from 1 August through 30 September, and 1 caribou from 15 November through 31 March.

Alaska Board of Game Actions and Emergency Orders. Following the wolf reduction program, when composition counts, bull:cow ratios, and calf survival indicated a surplus of harvestable bulls, the Board of Game established a Tier II subsistence hunt, TC506, effective fall 2013.

Federal Subsistence Board Actions. When ADF&G indicated in late 2012 there was a small surplus of harvestable bulls, the Federal Subsistence Board approved a small subsistence hunt, FC0909 to be managed by INWR.

Harvest by Hunters. In RY12 and RY13, in the FC0909 federal subsistence hunt, 9 and 1 bulls respectively were harvested in this Izembek NWR subsistence hunt, with no reports required (Table 2). It is estimated that 10 caribou were taken illegally each year (Table 2). There were 18 caribou harvested by local residents in RY13 in the TC506 hunt (Table 3). Most caribou were harvested in the fall, and most hunters used highway vehicles (Tables 4 and 5).

Other Mortality

Calf mortality investigations in spring 2013 on SAP indicated that 75% of neonatal calves survived the first 2 weeks of life. The primary source of death was predation by wolves and bears.

HABITAT

Assessment

Adult caribou in SAP appear to be in good overall condition based on evaluation of adult females captured during the reporting period. In 2013 neonate calf weights averaged 7.6 kg (n = 26) for males, and 7.1 kg (n = 25) for females.

In 2013 the overall pregnancy rate in SAP was relatively good based on an evaluation of 122 cows that were older than 2 years of age (84% pregnant). A sample of 16 known-aged adults, fitted with radio collars, exhibited a pregnancy rate of 75% based on physical characteristics prior to giving birth.

CONCLUSIONS AND RECOMMENDATIONS

Currently the bull ratio is above the management objective, and appears to be increasing as new calves are recruited into the population and hunt seasons remain closed. The population of SAP exceeds the objective for population size where hunting can occur, a harvestable surplus of bulls exists, resulting in opportunity for opening hunt seasons. Department staff should continue efforts to survey population size, composition, productivity, and survival to document how the population continues to respond to the wolf control program deactivated in 2009.

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Please cite any information taken from this section, and reference as:

Peterson, C. 2015. Unit 9D Southern Alaska Peninsula caribou. Chapter 5, Pages 5-1 through 5-11 [*In*] P. Harper and L. A. McCarthy, editors. Caribou management report of survey-inventory activities 1 July 2012–30 June 2014. Alaska Department of Fish and Game, Species Management Report ADF&G/DWC/SMR-2015-4, Juneau.

Table 1. Southern Alaska Peninsula caribou herd composition and survey results, regulatory years[a] 1987–2013.

Regulatory year	Bulls: 100 cows[c]	Calves: 100 cows[c]	% Calves		% Cows[c]	% Bulls[c]	Small bulls (% of bulls)[c]	Medium bulls (% of bulls)[c]	Large bulls (% of bulls)[c]	Composition sample size[c]	Postcalving count[d]	INWR[b] count[e]
			Summer[d]	Fall[c]								
1987	36	26	12	16	62	22	54	25	21	1,769	4,067	6,401
1988	41	19	16	12	59	29	61	37	4	886	3,407	
1990	19	12	14	9	76	15				1,051	3,375	
1991	28	19	18	13	68	19	53	33	14	883	2,287	2,830
1992	22	22	15	15	70	15	46	32	21	746	2,380	
1993	30	24	16	16	65	19	59	24	17	745	1,495	1,929
1994	29	28	21	18	64	18	46	27	27	531	2,137	1,806
1996			10									1,403
1997	42	19	15	12	62	26	36	36	27	546	1,844	3,243
1998	32	35		21	60	19	42	23	36	987		3,127
1999	51	25	26	15	57	28	48	30	22	1,049	3,612	
2000	42	37	24	21	56	23	50	24	26	982		
2001	57	38		19	51	30	57	26	17	1,313		
2002	38	16		10	65	25	44	34	23	932		4,100
2003	40	8		5	68	27	40	26	33	1,257		
2004	36	7		5	70	25	24	38	38	966		1,872
2005	30	6		5	73	22	27	46	28	1,040		1,651
2006	16	1		1	86	13	26	24	50	713		770
2007	15	1	1	1	87	12	20	47	33	431	600[d]	
2008	10	39	27	26	67	7	3	30	68	570	700[d]	
2009	21	43		26	61	13	50	16	34	679	800[d]	
2010	28	47		27	57	16	28	53	19	532		790
2011	40	20		13	62	25	28	52	20	920		1,061
2012	45	20	17	12	60	27	6	11	10	500		
2013	50	40	20	21	53	26	24	44	32	600	1,720	877

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1987 = 1 July 1987–30 June 1988.
[b] INWR = Izembek National Wildlife Refuge.
[c] Estimates based on October composition surveys.
[d] Estimates based on July postcalving counts and the proportion of radiocollared caribou encountered.
[e] Estimates based on winter (conducted between January and April) counts by Izembek National Wildlife Refuge staff.

Table 2. Southern Alaska Peninsula caribou herd harvest, regulatory years[a] 2001–2013.

Regulatory year	Harvest by hunters								
	Reported						Estimated unreported[b]	Illegal	Estimated total[c]
	M	(%)	F	(%)	Unknown	Total			
2001	52	(93)	4	(7)	0	56	30		90
2002	61	(91)	6	(9)	3	70	30		100
2003	47	(96)	2	(4)	1	50	30		80
2004	68	(89)	8	(11)	1	77	30		110
2005	58	(95)	3	(5)	0	61	30		90
2006	56	(97)	2	(3)	0	58	30		90
2007[d]								10	10
2008[d]								10	10
2009[d]								10	10
2010[d]								10	10
2011[d]								10	10
2012[d]							9	10	20
2013	17	(94)	1	(6)	0	18	1	10	30

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2001 = 1 July 2001–30 June 2002.
[b] Unreported includes FC0909 harvest in regulatory years 2012 and 2013 for which there were no reports.
[c] Estimated total is rounded off to the nearest 10.
[d] No permits issued.

Table 3. Southern Alaska Peninsula caribou herd annual hunter residency and success, regulatory years[a] 2001–2013.

	Successful					Unsuccessful					
Regulatory year	Local resident[b]	Nonlocal resident	Nonresident	Total[c]	(%)	Local resident[b]	Nonlocal resident	Nonresident	Total[c]	(%)	Total hunters
2001	26	13	12	56	(70)	12	2	6	24	(30)	80
2002	29	8	25	70	(71)	12	14	2	29	(29)	99
2003	9	13	25	50	(70)	10	6	5	21	(30)	71
2004	24	24	29	77	(73)	14	8	6	29	(27)	106
2005	30	9	20	61	(64)	20	6	8	34	(36)	95
2006	37	4	17	58	(45)	44	6	19	70	(55)	128
2007[d]											
2008[d]											
2009[d]											
2010[d]											
2011[d]											
2012[d]											
2013	18	0	0	19	(72)	6	0	0	6	(24)	25

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2001 = 1 July 2001–30 June 2002.
[b] Local residents are residents of Subunit 9D.
[c] Includes hunters of unspecified residency.
[d] No permits issued.

Table 4. Southern Alaska Peninsula caribou herd annual harvest chronology percent by month, regulatory years[a] 2001–2013.

Regulatory	Harvest chronology percent by month								
year	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	*n*
2001	4	41	2	12	16	20	5	0	56
2002	1	39	13	22	18	5	0	2	67
2003	2	63	2	8	15	0	4	6	49
2004	0	36	6	16	33	5	1	3	77
2005	0	46	0	28	13	5	5	3	61
2006	0	2	13	15	31	13	4	22	58
2007[b]									
2008[b]									
2009[b]									
2010[b]									
2011[b]									
2012[b]									
2013	28	28			10	22	6	6	18

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2001 = 1 July 2001–30 June 2002.
[b] No permits issued.

Table 5. Southern Alaska Peninsula caribou herd harvest percent by transport method, regulatory years[a] 2001–2013.

Regulatory year	Harvest percent by transport method						
	Airplane	Boat	3- or 4-wheeler	Snowmachine	ORV[b]	Highway vehicle	Foot
2001	23	23	30	0	4	20	0
2002	35	25	23	0	0	17	0
2003	56	6	26	0	0	12	0
2004	39	16	13	1	7	23	1
2005	42	6	20	0	0	32	0
2006	29	31	22	0	2	16	0
2007[c]							
2008[c]							
2009[c]							
2010[c]							
2011[c]							
2012[c]							
2013		17	22		6	49	6

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2001 = 1 July 2001–30 June 2002.
[b] Includes unspecified.
[c] No permits issued.