

Caribou Management Report and Plan, Game Management Units 19, 21A, and 21E:

Report Period 1 July 2012–30 June 2017, and

Plan Period 1 July 2017–30 June 2022

Jonathan Barton



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Species management reports and plans provide information about species that are hunted or trapped and management actions, goals, recommendations for those species, and plans for data collection. Detailed information is prepared for each species every 5 years by the area management biologist for game management units in their areas, who also develops a plan for data collection and species management for the next 5 years. This type of report is not produced for species that are not managed for hunting or trapping or for areas where there is no current or anticipated activity. Unit reports are reviewed and approved for publication by regional management coordinators and are available to the public via the Alaska Department of Fish and Game's public website.

This species management report and plan was reviewed and approved for publication by Doreen Parker McNeill, Management Coordinator for the Division of Wildlife Conservation.

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Contents

Purpose of this Report.....	1
I. RY12–RY16 Management Report	1
Management Area.....	1
Summary of Status, Trend, Management Activities, and History of Caribou in Units 19 and 21A, and 21E	1
Management Direction.....	2
Existing Wildlife Management Plans	2
Goals	2
Codified Objectives	2
Amounts Reasonably Necessary for Subsistence Uses	2
Intensive Management.....	2
Management Objectives.....	3
Management Activities	3
1. Population Status and Trend.....	3
2. Mortality-Harvest Monitoring and Regulations.....	6
3. Habitat Assessment-Enhancement.....	12
Nonregulatory Management Problems or Needs.....	12
Data Recording and Archiving	12
Conclusions and Management Recommendations	12
II. Project Review and RY17–RY21 Plan	13
Review of Management Direction.....	13
Management Direction.....	13
Goals	13
Codified Objectives	13
Amounts Reasonably Necessary for Subsistence Uses	13
Intensive Management.....	13
Management Objectives.....	14
Review of Management Activities.....	14
1. Population Status and Trend.....	14
2. Mortality-Harvest Monitoring	14
3. Habitat Assessment-Enhancement.....	15
Nonregulatory Management Problems or Needs.....	15
Data Recording and Archiving	15
References Cited.....	15

List of Tables

Table 1. McGrath area caribou harvest by herd, Alaska, regulatory years 2012–2016.....	7
Table 2. McGrath area caribou hunter residency and success, Alaska, regulatory years 2012–2016.	7
Table 3. Beaver Mountains herd caribou hunter residency and success, Alaska, regulatory years 2012–2016.	7
Table 4. Farewell-Big River herd caribou hunter residency and success, Alaska, regulatory years 2012–2016.	8
Table 5. Rainy Pass herd caribou hunter residency and success, Alaska, regulatory years 2012–2016.	8
Table 6. Sunshine Mountains herd caribou hunter residency and success, Alaska, regulatory years 2012–2016.	8
Table 7. Tonzona herd caribou hunter residency and success, Alaska, regulatory years 2012–2016.	9
Table 8. Caribou harvest chronology by month, McGrath area, Alaska, regulatory years 2012–2016.	10
Table 9. McGrath area transportation method of successful caribou hunters, Alaska, regulatory years 2012–2016.	11

Purpose of this Report

This report provides a record of survey and inventory management activities for caribou in Units 19 and 21A, and 21E for the previous 5 regulatory years and plans for survey and inventory management activities in the 5 years following the end of that period. A regulatory year (RY) begins 1 July and ends 30 June (e.g., RY10 = 1 July 2010–30 June 2011). This report is produced primarily to provide agency staff with data and analysis to help guide and record its own efforts but is also provided to the public to inform them of wildlife management activities. In 2016 the Alaska Department of Fish and Game's Division of Wildlife Conservation launched this 5-year report to more efficiently report on trends and describe potential changes in data collection activities over the next 5 years. It replaces the caribou management reports of survey and inventory activities that were previously produced every 2 years and supersedes the 1976 draft management plans.

I. RY12–RY16 Management Report

Management Area

This report covers Units 19, 21A and 21E. Unit 19 generally includes the Kuskokwim river drainage above Lower Kalskag and includes 4 subunits (19A, 19B, 19C, and 19D) totaling approximately 36,486 mi². Units 21A and 21E include the entire Innoko River drainage as well as the portion of the Yukon River between Paimiut and Blackburn Island. Additionally, Arhymot Lake, which drains into the Kuskokwim River, is also part of Unit 21E. Units 21A and 21E encompass approximately 18,792 mi².

Summary of Status, Trend, Management Activities, and History of Caribou in Units 19 and 21A, and 21E

Historically, caribou have played an important role in the McGrath area. During the 1800s, caribou occurred sporadically in far greater numbers over a greater range than at present (Murie 1935). Discussions with village elders and reports of early explorers corroborate this, although documentation is poor (Hemming 1971).

Several small herds continue to exist in the McGrath area. Current data are scant but recognized herds south of the Kuskokwim River include the Tonzona, Farewell–Big River (previously called Big River), and Rainy Pass herds. Herds north of the Kuskokwim River include the Beaver Mountains (previously called Kuskokwim Mountains) and Sunshine Mountains herds. Hunting effort and harvest for the 5 McGrath area caribou herds has been low.

In the early 1980s, Pegau (1986) radiocollared caribou in the Beaver and Sunshine Mountains and in the Farewell–Big River herd near Farewell. Radiocollared caribou from the Beaver Mountains ranged south almost to Horn Mountain. Radiocollared caribou from the Farwell herd remained in the Farewell area for the first year but moved near the Swift River the following year and did not return for at least 2 years (Pegau 1986).

Beaver herd calving was in the Beaver Mountains, but post calving groups occurred throughout the herd's range. Wintering areas included the north side of the Kuskokwim Mountains from the Iditarod River east to the Dishna River.

In addition to the smaller resident herds discussed in this report, the Mulchatna caribou herd once roamed throughout the Kuskokwim basin, but as numbers dwindled in the late 1990s the bulk of this herd retreated to the south (Whitman 1997). The Mulchatna herd has declined substantially from a peak of over 200,000 animals in the mid-1990s (Woolington 2011). Although the Mulchatna herd declined in population size, the herd is in good condition physically and shows good reproductive potential. There is optimism that this herd is capable of growing, barring stochastic events and mortality factors that could offset reproductive potential (Barten 2015). The Dillingham area office produces all subsequent management reports regarding this herd and their status.

Significant numbers of caribou from the Western Arctic herd have wintered in Unit 21E as recently as the early 1990s (Machida 1995). Large numbers of caribou from the Mulchatna herd also used Unit 21E during the same time (L. Van Daele, Wildlife Biologist, ADF&G, Kodiak, 1998, unpublished memorandum). However, coincident with the return of Western Arctic caribou to the Seward Peninsula during the mid- to late 1990s, (Dau 2001) caribou sightings became rare in Unit 21E.

Management Direction

EXISTING WILDLIFE MANAGEMENT PLANS

GOALS

Provide an opportunity for sustainable harvest of caribou across existing herds in Units 19, 21A, and 21E.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

- C1. Units 19A (that portion south of the Kuskokwim River) and 19B (Mulchatna herd), 2,100–2,400.
- C2. Units 16B, 19B, 19C, and 19D (Big River Herd, Rainy Pass herd), 50–70.
- C3. Unit 19 (Tonzona herd), 20–30.
- C4. Units 19A, 19D, 21A, and 21E (Beaver Mountains herd, Sunshine Mountains herd), 5.

Intensive Management

There are currently no active intensive management plans or objectives.

MANAGEMENT OBJECTIVES

- M1. Provide for a harvest of up to 100 bull caribou from the Farewell–Big River herd in Unit 19.
- M2. Provide for a harvest of up to 75 bull caribou from the Rainy Pass herd in Units 16B and 19C.
- M3. Provide for a combined harvest of up to 25 caribou from the Sunshine Mountains and Beaver Mountains herds in Units 19A, 19D, 21A, and 21E.
- M4. Provide for a harvest of up to 50 caribou from the Tonzona herd in Units 19C and 19D.

MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1 Conduct minimum population counts through annual aerial surveys (objectives M1, M2, M3, and M4).

Data Needs

The minimum population count approach allows us to estimate the sizes of the different caribou herds and their distributions. This information is used in conjunction with harvest data to ensure established harvest objectives do not exceed what each herd can reasonably sustain. Annual aerial surveys are the best and most efficient method to produce minimum population counts.

Methods

Minimum population counts were conducted in June 2013 for the Sunshine Mountains and Beaver Mountains herds. Survey flights were conducted from Piper PA-18 Super Cub aircraft in late June when warm weather conditions are most likely to concentrate caribou on snow patches and on higher, open terrain where they seek insect relief. We enumerated caribou observed from the air and recorded their numbers and locations. Surveys last between 7–8 hours depending on the location and herd under survey. Caribou are searched for between snow patches at higher elevations within their respected habitat range. The aggregation of caribou surrounding snow patches is due in large part to the avoidance of insects and warm weather conditions. These snow patches are important to the surveys as bare tundra and open habitat provide for poor visibility during these surveys.

In July 2014 we conducted a reconnaissance flight of the Tonzona caribou herd in a portion of the herd's range from the Herron River in the east to the Tonzona River in the west. This was a first attempt to find caribou within their expected range. We enumerated the caribou seen but locations were not recorded. We did not attempt minimum counts for the Farewell-Big River or Rainy Pass herds during this reporting period. Population estimates of McGrath area caribou herds are roughly based on older data. Presence/absence information coupled with harvest data provide some insight on the herds that are not counted, but strong conclusions cannot be made from these data.

Population and harvest data were summarized by regulatory year. These data do not include Unit 19 Mulchatna herd harvest, which is reported from the Dillingham area office.

Results and Discussion

Population Size

BEAVER MOUNTAINS AND SUNSHINE MOUNTAINS HERDS

In June 2013, we counted 488 caribou including 49 calves within the range of both herds combined. This is fewer than the 851 caribou including 113 calves counted during a June 2012 survey. However, the difference is more likely due to better survey conditions in 2012 than a decrease in caribou numbers. The Beaver Mountains and Sunshine Mountains caribou herds combined are estimated to be stable at 1,000–1,250 caribou which we determined by extrapolating for caribou we believe were missed.

TONZONA HERD

We searched the area reported by Del Vecchio et al. (1995) as summer range during our survey in July 2014. We were only able to find 11 caribou (8 adults and 3 calves), and we believe trees and lack of radio collars hampered this search. At this time, the number of caribou within the Tonzona herd is unknown.

RAINY PASS, FAREWELL-BIG RIVER HERD

We have few population data for the Rainy Pass and Farewell-Big River herds, and we do not know how many caribou are in the herd at this time. During surveys for bison and Dall sheep, we regularly see caribou primarily in scattered groups of 5–50.

Population Composition

Composition surveys were not conducted during RY12–RY13. However, in June 2013 during a minimum count of the Beaver Mountains and Sunshine Mountains herds we gathered composition as well as a minimum count data. Within the portion of the range south and west of the Innoko River, generally considered the range of the Beaver Mountains herd, we found the following: 85 adults and 9 calves totaling 94 caribou. Within that portion of the range north and east of the Innoko River, generally considered the range of the Sunshine Mountains herd, we found 354 adults and 40 calves totaling 394 caribou. Even though radiotelemetry data from the 1980s (Pegau 1986) suggest these herds are distinct, groups of caribou were found continuously throughout the area and mixing is likely. The combined counts of both herds were 439 adults and 49 calves totaling 488 Beaver and Sunshine Mountains caribou.

Distribution and Movements

BEAVER MOUNTAINS HERD

Current distribution of the Beaver Mountains herd is thought to include habitats from Swinging Dome in the south through the Beaver Mountains to the Innoko River in the north. Caribou are regularly found in this area during summer surveys, but their annual range may extend beyond these areas. Few movement data are available but reports from the public indicate that caribou

are found west of the Beaver Mountains. This information is corroborated by our observation of caribou and caribou tracks during winter surveys for other species.

SUNSHINE MOUNTAINS HERD

The Sunshine Mountains caribou are found predominantly in the drainages of the Nixon Fork, from the Innoko River to Von Frank Mountain, and in the headwaters of the Susulatna and Nowitna Rivers, including Fossil Mountain and the Cripple Creek Mountains. Calving occurs throughout the range but is common on the Nixon Flats. Wintering areas are primarily in the drainages of the Nixon Fork. In midsummer these caribou are found predominantly in the Sunshine Mountains; however, small groups were regularly observed on the Nixon Flats throughout RY12 and RY13.

During our survey of the Beaver Mountains and Sunshine Mountains herd ranges in June 2013, small groups of caribou were found continuously, and it is likely that these 2 herds were mixed. However, Pegau (1986) did not document range overlap between these herds during his 4-year study.

TONZONA HERD

We do not have current data on range, movement, or distribution of this herd. However, Del Vecchio et al. (1995) reported that the Tonzona herd was distinct from the Denali herd and ranged from the Herron River to the lower Tonzona River near Telida and north to Otter Lake. Summer concentrations were found in the northern foothills of the Alaska Range, and winter range consisted of lower elevations from Telida up the Swift River and north to the Otter Lake area.

FAREWELL-BIG RIVER HERD

There is little recent information on the range of the Farewell-Big River herd. It is thought to include habitats within the South Fork Kuskokwim river drainage southwest to the Swift River. Summering areas are in the foothills of the north side of the Alaska Range. Wintering areas are in the flats north of the summer range.

RAINY PASS HERD

The range of the Rainy Pass herd is not well known. The first documented count of the herd occurred in 1996 during a sheep survey conducted by the Palmer Alaska Department of Fish and Game and Denali National Park staff. During that survey they documented 1,093 caribou. The herd has been found from the confluence of the Post River south through Rainy Pass to the west side of Cook Inlet. Caribou have been observed throughout the mountains in summer in both Units 16B and 19C.

Caribou were fitted with radio collars in the Rainy Pass herd during October 1999 and October 2000. Female 5-month-old calves were fitted with radio collars. Radio collars were deployed to facilitate the composition counts and general monitoring. It is unknown the amount of time that these collars were active. Identified wintering areas of radiocollared individuals included the Post Lake area, upper South Fork, and upper Ptarmigan Valley (Boudreau 2003).

Recommendations for Activity 1.1

ACTIVITY 1.1 Continue. When conducting minimum population counts we can estimate population size, herd composition, distribution, and recruitment. This information supplemented with harvest data contributes significantly to caribou herd management in Units 19, 21A, and 21E.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1 Monitor annual caribou harvest from harvest tickets and registration permits (objectives C1, C2, C3, C4, M1, M2, M3, and M4).

Data Needs

Annual summaries of harvest are necessary to understand harvest in relation to our codified and management objectives, subsistence, and sustained yield. Analysis of harvest data also informs department recommendations to the Alaska Board of Game.

Methods

The statewide harvest reporting system is used to estimate harvest. Reporting on registration permits, and general season hunts is collected from hunters and archived in the ADF&G's Wildlife Information Network (WinfoNet) database.

Season and Bag Limit

Hunting regulations for Units 19 and 21 during RY12–RY16 are found in the Alaska Hunting Regulations booklets numbers 53, 54, 55, 56, and 57.

Current hunting regulations for Units 19 and 21 can be found on the ADF&G website at:

<http://www.adfg.alaska.gov/index.cfm?adfg=wildliferegulations.hunting>

Results and Discussion

Harvest by Hunters

Reported harvest for local caribou herds in the McGrath area during RY12–RY16 has seen a moderate increase since RY09–RY13. Average annual harvest during RY09–RY13 was 31 caribou (Seavoy 2015) compared to 56 caribou during RY12–RY16 (Table 1). Hunter effort increased from 123 reported people hunting in RY12 to 216 in RY16 (Seavoy 2015). In general, harvest and effort varied by herd during RY12–RY16 but remained low (Tables 3–7). The average harvest during RY12–RY16 was 56 animals, of which 98% were bulls (Table 1).

Hunter Residency and Success

During RY12–RY16 local hunters, defined as hunters from Units 19C, 19D, 21A and 21E, took about 2% of the reported harvest of local caribou herds. Hunters from communities within Unit 19A were not included among local hunters because they reside within the range of the Mulchatna herd. During RY12–RY16 nonlocal residents took 26%, nonresidents took 70%, and hunters with unknown residency took 2% of harvested animals (Tables 2–7).

Table 1. McGrath area caribou harvest by herd, Alaska, regulatory years 2012–2016.

Regulatory year	Beaver mountains			Farewell-Big River			Rainy Pass			Sunshine Mountains			Tonzona			Unknown			Total harvest		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total
2012	0	0	0	11	0	12 ^a	7	0	7	0	0	1 ^a	7	1	8	5	0	5	30	1	33 ^a
2013	0	1	1	13	0	14 ^a	20	0	20	1	0	1	6	0	6	7	0	7	47	1	49 ^a
2014	1	0	1	18	1	19	20	1	20	1	0	1	5	0	5	11	0	11	56	1	57
2015	3	0	3	33	0	33	21	0	21	0	0	0	2	0	2	10	0	10	69	0	69
2016	5	1	6	26	0	27 ^a	24	0	24	0	0	0	2	0	2	13	0	13	70	1	72 ^a

NOTE: Mulchatna caribou herd animals taken in Unit 19 are not included in this table.

^a Includes caribou of unknown sex.

Table 2. McGrath area caribou hunter residency and success, Alaska, regulatory years 2012–2016.

Regulatory year	Successful					Unsuccessful					Total hunters
	Local resident ^a	Nonlocal resident	Nonresident	Unknown	Total (%)	Local resident ^a	Nonlocal resident	Nonresident	Unknown	Total (%)	
2012	2	8	23	0	33 (27)	8	53	29	0	90 (73)	123
2013	1	15	33	0	49 (29)	5	59	53	1	118 (71)	167
2014	0	14	42	1	57 (34)	5	59	46	0	110 (66)	167
2015	1	20	48	0	69 (33)	9	71	60	1	141 (67)	210
2016	1	17	49	5	72 (33)	4	67	73	0	144 (67)	216

NOTE: Mulchatna caribou herd animals taken in Unit 19 are not included in this table.

^a Local resident is any resident of Units 19C, 19D, 21A, or 21E.

Table 3. Beaver Mountains herd caribou hunter residency and success, Alaska, regulatory years 2012–2016.

Regulatory year	Successful					Unsuccessful					Total hunters
	Local resident ^a	Nonlocal resident	Nonresident	Unknown	Total (%)	Local resident ^a	Nonlocal resident	Nonresident	Unknown	Total (%)	
2012	0	0	0	0	0 (0)	4	6	1	0	11 (100)	11
2013	0	0	1	0	1 (10)	2	4	3	0	9 (90)	10
2014	0	0	1	0	1 (20)	0	4	0	0	4 (80)	5
2015	1	1	1	0	3 (17)	3	7	5	0	15 (83)	18
2016	0	1	5	0	6 (38)	0	9	1	0	10 (63)	16

^a Local resident is any resident of Units 19C, 19D, 21A, or 21E.

Table 4. Farewell-Big River herd caribou hunter residency and success, Alaska, regulatory years 2012–2016.

Regulatory year	Successful					Unsuccessful					Total hunters
	Local resident ^a	Nonlocal resident	Nonresident	Unknown	Total (%)	Local resident ^a	Nonlocal resident	Nonresident	Unknown	Total (%)	
2012	2	3	7	0	12 (43)	0	12	4	0	16 (57)	28
2013	0	7	7	0	14 (37)	0	19	5	0	24 (63)	38
2014	0	6	12	1	19 (39)	2	13	14	1	30 (61)	49
2015	0	11	22	0	33 (62)	0	13	7	0	20 (38)	53
2016	0	4	19	4	27 (47)	0	13	17	0	30 (53)	57

^a Local resident is any resident of Units 19C, 19D, 21A, or 21E.

Table 5. Rainy Pass herd caribou hunter residency and success, Alaska, regulatory years 2012–2016.

Regulatory year	Successful					Unsuccessful					Total hunters
	Local resident ^a	Nonlocal resident	Nonresident	Unknown	Total (%)	Local resident ^a	Nonlocal resident	Nonresident	Unknown	Total (%)	
2012	0	0	7	0	7 (15)	0	24	15	0	39 (85)	46
2013	0	6	14	0	20 (31)	0	17	27	0	44 (69)	64
2014	0	7	13	0	20 (32)	1	27	15	0	43 (68)	63
2015	0	7	14	0	21 (27)	0	26	30	1	57 (73)	78
2016	0	7	17	0	24 (34)	0	17	30	0	47 (66)	71

^a Local resident is any resident of Units 19C, 19D, 21A, or 21E.

Table 6. Sunshine Mountains herd caribou hunter residency and success, Alaska, regulatory years 2012–2016.

Regulatory year	Successful					Unsuccessful					Total hunters
	Local resident ^a	Nonlocal resident	Nonresident	Unknown	Total (%)	Local resident ^a	Nonlocal resident	Nonresident	Unknown	Total (%)	
2012	0	0	1	0	1 (50)	1	0	0	0	1 (50)	2
2013	1	0	0	0	1 (50)	1	0	0	0	1 (50)	2
2014	0	0	1	0	1 (20)	2	2	0	0	4 (80)	5
2015	0	0	0	0	0 (0)	2	1	0	0	3 (100)	3
2016	0	0	0	0	0 (0)	1	1	0	0	2 (100)	2

^a Local resident is any resident of Units 19C, 19D, 21A, or 21E.

Table 7. Tonzona herd caribou hunter residency and success, Alaska, regulatory years 2012–2016.

Regulatory year	Successful					Unsuccessful					Total hunters
	Local resident ^a	Nonlocal resident	Nonresident	Unknown	Total (%)	Local resident ^a	Nonlocal resident	Nonresident	Unknown	Total (%)	
2012	0	2	6	0	8 (62)	0	2	3	0	5 (38)	13
2013	0	2	4	0	6 (75)	0	0	2	0	2 (25)	8
2014	0	0	5	0	5 (83)	0	1	0	0	1 (17)	6
2015	0	1	1	0	2 (67)	0	0	1	0	1 (33)	3
2016	0	0	2	0	2 (33)	0	1	3	0	4 (67)	6

^a Local resident is any resident of Units 19C, 19D, 21A, or 21E.

Harvest Chronology

Most caribou harvested during RY12–RY16 were taken in August (53%) and September (45%; Table 8).

Table 8. Caribou harvest chronology by month, McGrath area, Alaska, regulatory years 2012–2016.

Regulatory year	Harvest chronology by month										<i>n</i>
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Unknown		
2012	19	12	0	0	0	0	0	0	2	33	
2013	24	24	1	0	0	0	0	0	1	50	
2014	29	27	0	0	0	1	0	0	0	57	
2015	42	25	1	0	0	0	0	0	1	69	
2016	33	37	1	0	0	0	0	0	1	72	

NOTE: Mulchatna caribou herd animals taken in Unit 19 are not included in this table.

Transport Methods

Aircraft were the most common means of hunter transportation to access McGrath area caribou herds. During RY12–RY16, 80% of successful caribou hunters used aircraft, which has been a consistent with previous trends. Four-wheelers (8%) and Horses (7%), were the next most common modes of transport. Infrequently, boats (3%), off-road vehicles (<1%), highway vehicles (1%) and unknown methods (<1%) were also reported (Table 9).

Other Mortality

No specific data were collected concerning natural mortality rates or factors during RY12–RY16.

Alaska Board of Game Actions and Emergency Orders

No changes were made to caribou regulations during RY12–RY16. No emergency orders were issued during RY12–RY16.

Table 9. McGrath area transportation method of successful caribou hunters, Alaska, regulatory years 2012–2016.

Regulatory year	Harvest by transport method								<i>n</i>
	Airplane (%)	Horse (%)	Boat (%)	4-Wheeler (%)	Snow machine (%)	Off-road vehicle (%)	Highway vehicle (%)	Unknown (%)	
2012	28 (85)	3 (9)	0 (0)	1 (3)	0 (0)	0 (0)	1 (3)	0 (0)	33
2013	38 (78)	4 (8)	3 (6)	3 (6)	0 (0)	1 (2)	0 (0)	0 (0)	49
2014	51 (89)	3 (5)	0 (0)	3 (5)	0 (0)	0 (0)	0 (0)	0 (0)	57
2015	50 (72)	6 (9)	4 (6)	6 (9)	0 (0)	0 (0)	1 (1)	2 (3)	69
2016	58 (81)	4 (6)	0 (0)	8 (11)	0 (0)	0 (0)	1 (1)	1 (1)	72

NOTE: Mulchatna caribou herd animals taken in Unit 19 are not included in this table.

Recommendations for Activity 2.1

ACTIVITY 2.1 Continue as harvest tickets and registration permits provide accurate data on minimum numbers of caribou harvested from each herd and area. This data helps area biologists to manage within harvest guidelines and objectives.

3. Habitat Assessment-Enhancement

There are no habitat assessment or enhancement projects underway at this time. Habitat does not appear to be a limiting factor in caribou herd populations or their distributions in Units 19, 21A and 21E.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Little is known about the distribution and movements of the caribou in Units 19, 21A, and 21E . Radiocollaring individual caribou at strategic locations would benefit our management efforts by providing more accurate minimum population counts, seasonal distribution and movement data, and aid in composition surveys. Because calving ground location and fidelity are poorly understood, radio collaring can help identify unique and potentially shared calving areas to assist with herd identification, overlap, and management.

Data Recording and Archiving

Caribou survey data are located in files in the McGrath office and archived within WinfoNet.

Conclusions and Management Recommendations

Harvest remained low during RY12–RY16 for all McGrath area caribou herds and management objectives were met. The Farewell-Big River herd was managed to provide for a harvest of up to 100 bull caribou and an average of 20 were harvested. The objective for the Rainy Pass herd was for a harvest of up to 75 bull caribou, and the average reported harvest was 18. The objective for the Sunshine Mountains and Beaver Mountains herds was to provide for a combined harvest of up to 25 caribou, and the total reported harvest was 2 caribou. The Tonzona herd objective was a harvest of up to 50 caribou, and the average reported harvest was 4 caribou. At this time current harvest levels are believed to be sustainable because bull only harvest is low across all Units.

Recent movement and distribution data for the Farewell-Big River, Rainy Pass, Beaver Mountains, Sunshine Mountains, and Tonzona caribou herds in Unit 19C and 19D are scant. We recommend deploying radio collars to better define these herds, their population size, and their movements when budgets and office priorities allow. The use of radio collars can help refine objectives to better address harvestable surplus and harvest levels.

During RY12–RY16 the number of caribou hunters in the area increased but remained low. This amount of effort most likely reflects the small size of the McGrath area caribou herds and may be influenced by the tendency for most caribou harvest to be opportunistic during hunts for other species. No changes to hunting regulations are recommended.

II. Project Review and RY17–RY21 Plan

Review of Management Direction

MANAGEMENT DIRECTION

We plan to continue to monitor and provide opportunity for sustainable harvest of caribou across existing herds in Units 19, 21A, and 21E. Potential changes to our management direction include setting up a frame work to monitor herd distributions, composition, and calving grounds with radio collars. This new frame work would allow for better monitoring and more accurate estimations of herd distributions and movements, sizes, and composition to ensure we are sustainably maximizing harvest opportunity.

Gathering better composition data through helicopter surveys and aerial photography would better improve our understanding of herd health and status. Limited financial resources would prohibit helicopter time in most cases; however, photographs taken during fixed wing aerial surveys may help provide clarity in counts and recruitment. Reviewing photographs of reasonably high quality may help in distinguishing calves from adult caribou as they have a noticeably shorter head than yearlings or adults (Valkenburg 2016).

Our current goals and objectives are adequate to provide and monitor harvest among caribou herds in Units 19, 21A and 21E. Caribou populations appear to be stable and healthy among all herds distributed within their associated management units. Herds are relatively small, harvest is low, and hunting opportunity is high. These low harvest levels restrict the justification to allocate large amounts of time and resources to these herds.

GOALS

- G1. Provide an opportunity for sustainable harvest of caribou across existing herds in Units 19, 21A, and 21E.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

- C1. Units 19A (that portion south of the Kuskokwim River) and 19B (Mulchatna herd), 2,100–2,400
- C2. Units 16B, 19B, 19C, and 19D (Big River Herd, Rainy Pass herd), 50–70
- C3. Unit 19 (Tonzona herd), 20–30
- C4. Units 19A, 19D, 21A, and 21E (Beaver Mountain herd, Sunshine Mountain herd), 5

Intensive Management

There are no plans to implement intensive management for caribou.

MANAGEMENT OBJECTIVES

- M1. Provide for a harvest of up to 100 bull caribou for the Farewell-Big River herd in Unit 19.
- M2. Provide for a harvest of up to 75 bull caribou for the Sunshine and Beaver Mountains herds in Units 19A, 19D, 21A, and 21E.
- M3. Provide for a combined harvest of up to 25 caribou from the Sunshine Mountains and Beaver Mountains herds.
- M4. Provide for a harvest of up to 50 caribou for the Tonzona herd in Units 19C and 19D.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1 Assess populations, trends, and composition through annual aerial surveys (M1, M2, M3, and M4).

Data Needs

We will continue to use the minimum population count approach as listed in the report section to estimate the sizes of the different caribou herds and their distributions. This information is used in conjunction with harvest data to ensure established harvest objectives don't exceed what each herd can reasonably sustain. Annual aerial surveys will continue to provide the best and most efficient method to gather estimates of caribou counts.

Methods

We will continue to use fixed wing aircraft as listed in the report section to record minimum population counts and identify trends within caribou herds.

Assessing composition may be better achieved through photographs and/or roto-wing aircraft. Detailed composition data such as bull: cow and cow: calf ratios and annual recruitment can be used in estimating population trends and herd health.

2. Mortality-Harvest Monitoring

ACTIVITY 2.1 Monitor annual caribou harvest from harvest tickets and registration permits. (C1, C2, C3, C4, M1, M2, M3, and M4).

Data Needs

Annual summaries of harvest are necessary to understand harvest in relation to our management objective, subsistence, and sustained yield. Analysis of harvest data also informs department recommendations to the Alaska Board of Game.

Methods

Harvest data will be assessed using the WinfoNet database. We will follow methods from the prior reporting period as this is the most effective and accurate means of gathering and analyzing harvest data and trends.

3. Habitat Assessment-Enhancement

There are no recommendations to conduct any habitat assessment or enhancement projects. There is currently no data suggesting that habitat is a limiting factor in the herds under review and other management priorities and funding prevent any significant investigations at this time.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

No change from reporting period.

Data Recording and Archiving

Caribou mortality data from harvest tickets and registration permits are archived in the ADF&G's Wildlife Information Network (WinfoNet) database. Electronic data and files such as survey memos will be uploaded and archived as they are completed. Hard copies of data and files are located in the McGrath area office. Historic data is being archived in WinfoNet as time allows.

References Cited

- Barten, N. L. 2015. Mulchatna herd caribou, Units 9B, 17, 18 south, 19A, and 19B. Chapter 3, Pages 3–1 through 3–22 [*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.
- Boudreau, T. A. 2003. Units 19A, 19B, 19C, 19D, 21A, and 21E caribou. Pages 134–147 [*In*] C. Healy, editor. Caribou management report of survey and inventory activities 1 July 2000–30 June 2002. Alaska Department of Fish and Game, Division of Wildlife Conservation, Federal Aid in Wildlife Restoration Project 3.0, Juneau.
- Dau, J. 2001. Units 21D, 22A, 22B, 23, 24, and 26A caribou. Pages 181–218 [*In*] C. Healy, editor. Caribou management report of survey and inventory activities 1 July 1998–30 June 2000. Alaska Department of Fish and Game, Division of Wildlife Conservation, Federal Aid in Wildlife Restoration Project 3.0, Juneau.
- Del Vecchio, P. A., B. Shults, and L. Adams. 1995. Status and distribution of the Tonzona caribou herd, 1988–1991. Natural Resources Final Report NPS/ARRNR/NRTR-95/27, National Park Service.
- Hemming, J. E. 1971. The distribution and movement patterns of caribou in Alaska. Alaska Department of Fish and Game, Division of Game, Wildlife Technical Bulletin 1, Juneau.

- Machida, S. 1995. Units 21D, 22A, 22B, 23, 24, and 26A caribou. Pages 157–175 [In] M. V. Hicks, editor. Caribou management report of survey-inventory activities 1 July 1992–30 June 1994. Alaska Department of Fish and Game, Division of Wildlife Conservation, Federal Aid in Wildlife Restoration Study 3.0, Juneau.
- Murie, O. J. 1935. Alaska–Yukon caribou. U.S. Department of Agriculture, Bureau of Biological Survey, North American Fauna Series 54, Washington, D.C.
- Pegau, R. E. 1986. Units 19 and 21 caribou. Pages 23–26 [In] B. Townsend, editor. Caribou management report of survey and inventory activities 1 July 1984–30 June 1985. Alaska Department of Fish and Game, Division of Game, Federal Aid in Wildlife Restoration Job 3.0, Juneau.
- Seavoy, R. J. 2015. Units 19A, 19B, 19C, 19D, 21A, and 21E caribou. Chapter 10, 10-1 through 10-13 [In] P. Harper and L. A. McCarthy, editors. Caribou management report of survey and inventory activities 1 July 2012–30 June 2014. Alaska Department of Fish and Game, Species Management Report ADF&G/DWC/SMR-2015-4, Juneau.
- Valkenburg, P., B. W. Dale, J. L. Davis, M. M. Ellis, R. D. Boertje, M. A. Keech, D. D. Young Jr., R. M. Eagan, R. W. Tobey, C. L. Gardner, R. A. Sellers, L. G. Butler, J. D. Woolington, B. D. Scotton, T. H. Spraker, M. E. McNay, A. R. Aderman, and M. J. Warren. 2016. Monitoring caribou herds in Alaska, 1970–2008, with focus on the Delta caribou herd, 1979–2007. Alaska Department of Fish and Game, Wildlife Technical Bulletin ADF&G/DWC/WTB-2016-16, Juneau.
- Whitman, J. S. 1997. Units 19A, 19B, 19C, 19D, 21A, and 21E caribou. Pages 108–118 [In] M. V. Hicks, editor. Caribou management report of survey and inventory activities 1 July 1994–30 June 1996. Alaska Department of Fish and Game, Division of Wildlife Conservation, Federal Aid in Wildlife Restoration Study 3.0, Juneau.
- Woolington, J. D. 2011. Units 9B, 17, 18 south, 19A, and 19B Mulchatna caribou. Pages 11–32 [In] P. Harper, editor. Caribou management report of survey and inventory activities 1 July 2008–30 June 2010. Alaska Department of Fish and Game, Division of Wildlife Conservation, Federal Aid in Wildlife Restoration Study 3.0, Juneau.

