

Caribou Management Report and Plan, Game Management Units 14A and 14B:

Report Period 1 July 2017–30 June 2022, and
Plan Period 1 July 2022–30 June 2027

Chris Brockman



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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 Todd A. Rinaldi, Management Coordinator for Region IV for the Division of Wildlife Conservation.

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Cover Photo: Caribou capture operations in the Talkeetna Mountains of Unit 14B. ©2014 ADF&G. Photo by Todd Rinaldi.

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Purpose of this Report

This report provides a record of survey and inventory management activities for caribou (*Rangifer tarandus granti*) in Game Management Units 14A and 14B for the 5 regulatory years 2017–2021 and plans for survey and inventory management activities in the next 5 regulatory years, 2022–2027. A regulatory year (RY) begins 1 July and ends 30 June (e.g., RY15 = 1 July 2015–30 June 2016). This report is produced primarily to provide agency staff with data and analysis to help guide and record agency efforts but is also provided to the public to inform it of wildlife management activities. In 2016 the Alaska Department of Fish and Game’s (ADF&G, the department) Division of Wildlife Conservation (DWC) launched this 5-year report to report more efficiently on trends and to describe potential changes in data collection activities over the next 5 years. It replaces the caribou management report of survey and inventory activities that was previously produced every 2 years.

I. RY17–RY21 Management Report

Management Area

The Talkeetna Mountains in Southcentral Alaska run south to north. Caribou in the Western Talkeetna herd (WTH) utilize the mountainous areas of Unit 14B and the northeast corner of Unit 14A (Fig. 1). Unit 14B covers approximately 2,512 mi² of the Talkeetna Mountains. It consists of all land east of the Susitna River to its confluence with the Talkeetna River south and west to its headwaters, and north of the north banks of Willow and Peters creeks to the headwaters, and the hydrologic divide separating the Susitna River and the Knik Arm drainages to the outlet creek at Lake 4408. Unit 14A extends along the southern boundary of Unit 14B and is also bounded by the Chickaloon River on the east, the Knik Glacier, Knik River, and Cook Inlet on the south, and the Susitna River on the west. The total area of caribou habitat for the WTH is approximately 2,200 mi².

Summary of Status, Trend, Management Activities, and History of Caribou in Units 14A and 14B

Caribou in the western Talkeetna Mountains are considered an offshoot of the Nelchina caribou herd. Caribou have been noted in the western Talkeetna Mountains since before the 1940s and there are records of people hunting them as far south and west as Willow since before the 1930s.

Other Knik Arm people, especially those living on the west side of the Arm and up the Matanuska River, hunted primarily in the Talkeetna Mountains and in the Chugach Range south of the Matanuska Valley. They constructed caribou surrounds or “fences” by lashing horizontal poles between posts or trees, and setting snares at certain intervals along the “fence.” These surrounds could be four miles or more in length and require two years to build. (Osgood 1937:33). One was formerly located near the head of Willow Creek. (Fall 1981).

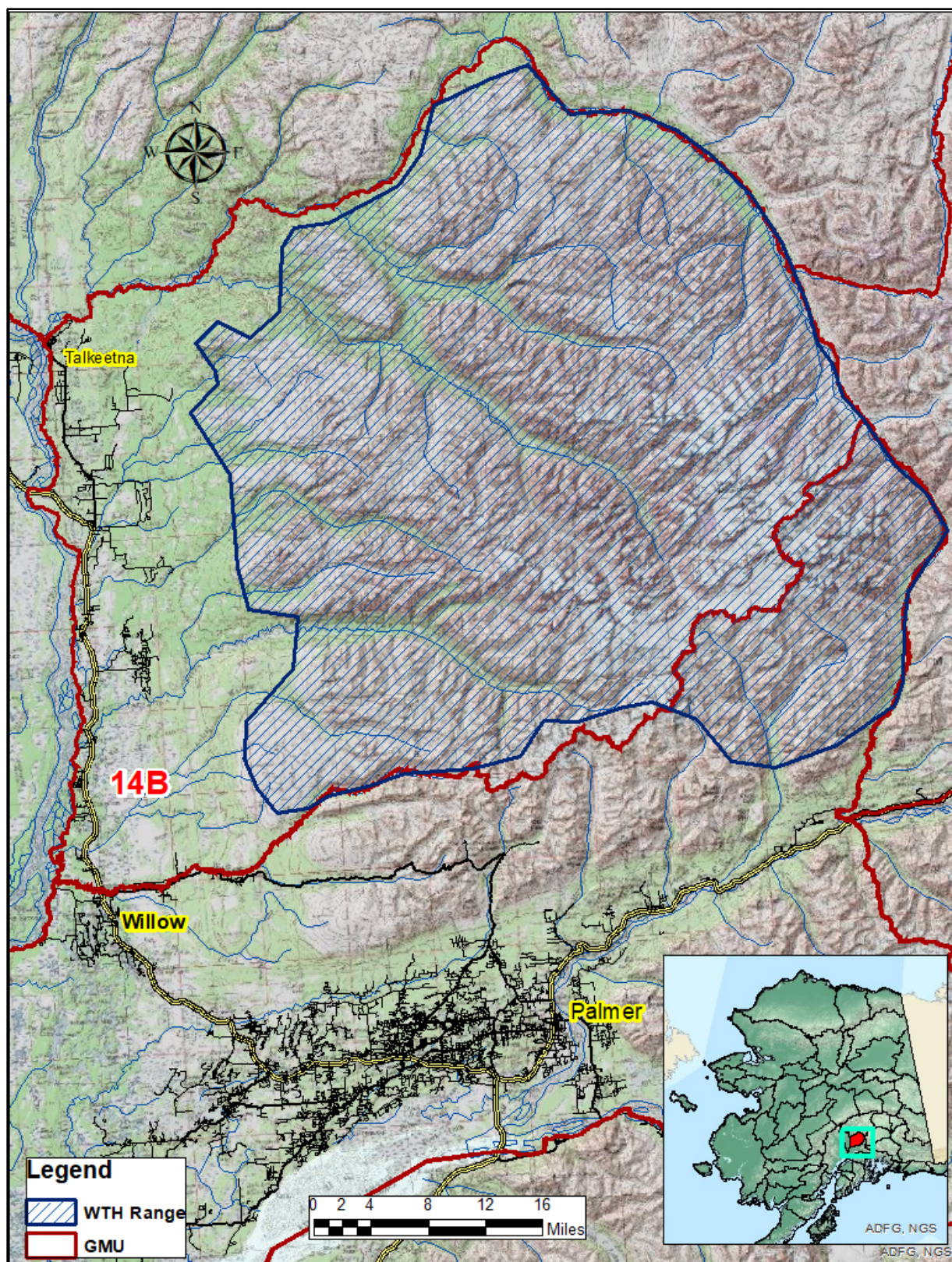


Figure 1. A map of the Western Talkeetna caribou herd's range in Game Management Unit 14B and the northeast portion of Unit 14A, Southcentral Alaska.

Very little attention has been given to the WTH due to financial constraints and higher priority herds. Before 2011, only 2 surveys of the herd had been completed in the previous 25 years. A winter census of the unit in 2011 indicated a population of 1,679 animals. At that time, 3 pilot-observer teams using PA-18 aircraft covered Units 14 in 2 days of flying. Caribou were seen in both Units 14A and 14B.

The first DC590 permits were issued in RY93. They allowed hunters to harvest caribou in Unit 14B. Participation and harvest had been relatively light since then, due in part to difficult access to the unit. Because of the 2011 census, the department proposed increasing the number of permits available and adding a winter season during which the caribou could potentially be accessed by snowmachine. A “may be announced” winter season for DC590 began in RY13, a set winter season of 1 December–15 March was adopted in RY16, and Unit 14A was added to the hunt area in RY18.

Management Direction

ADF&G manages caribou under the sustained yield principle, using the best scientific knowledge available for the benefit of the resource and the people of Alaska.

EXISTING WILDLIFE MANAGEMENT PLANS

- The Nelchina Caribou Management Plan in *Alaska Wildlife Management Plans: A Public Proposal for the Management of Alaska’s Wildlife: Southcentral Alaska* (ADF&G 1976).
- *Strategic Plan* (ADF&G 2002).

GOALS

- Protect, maintain, and enhance the WTH and its habitat.
- Provide the greatest sustainable opportunity to hunt and harvest caribou for human consumption.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

The Alaska Board of Game (board) has not designated caribou as a subsistence resource in Units 14A or 14B.

Intensive Management

The board has not designated caribou as an intensive management species in Units 14A or 14B.

MANAGEMENT OBJECTIVES

Maintain a fall bull-to-cow ratio of at least 35:100.

MANAGEMENT ACTIVITIES

Assessing population status and trends and monitoring harvest and mortality are integral components of caribou management in the Talkeetna Mountains. Survey and inventory management activities used to monitor the WTH population are described below.

1. Population Status and Trend

ACTIVITY 1.1. Conduct fall herd composition surveys for sex and age composition and determine relative population trends.

Data Needs

Caribou abundance and herd composition information are necessary for sustainable harvest. Sex and age composition information can be used to determine appropriate harvest levels and recruitment into the population. Sex and age ratio data may also be used to model population structure and trends.

Methods

In the last week of September or the first week of October, groups of caribou were identified by a single fixed-wing pilot, and their locations were relayed to a R-44 helicopter pilot with 2 division observers. The helicopter crew determined the age and sex composition of the groups and recorded the information. A digital recorder was used to verify information gathered during the flight. Surveyors recorded groups until at least 450 caribou had been observed to reduce bias from any individual group.

Results and Discussion

The WTH population size varies and is influenced by occasional influxes of caribou from the neighboring Nelchina herd. The bull-to-cow ratio averaged 52:100 during RY17–RY21, indicating that there are fewer bulls available for harvest than in the previous reporting period (RY12–RY16; Table 1).

Table 1. Composition counts, Western Talkeetna caribou, regulatory years 2017–2021, Units 14A and 14B, Southcentral Alaska.

Regulatory year	Bulls:100 cows	Calves:100 cows	Percentage			Composition sample size
			Calves	Cows	Bulls	
2017	47	25	15	58	27	481
2018	42	13	9	64	27	881
2019	70	20	11	52	37	588
2020	49	17	17	54	29	381
2021	50	21	12	59	29	366

Recommendations for Activity 1.1

Modify to include a winter survey.

ACTIVITY 1.2. Determine herd range and parturition rates for caribou in the western Talkeetna Mountains.

Data Needs

Little is known about the WTH's range, movement patterns, and parturition rates. Determining the herd's range and distinguishing it from the neighboring Nelchina herd will aid in its management. The pregnancy rate, as an indicator of productivity, can be used to inform models to predict herd size and population trends.

Methods

Using standard capture and collaring techniques, radio collars will be deployed in the WTH to mark animals and locate them on a regular basis. To have a representative sample of the herd, 20 to 30 radio collars will be deployed throughout its range in late winter. Collared animals will be relocated at least quarterly to determine the extent of seasonal movements. Additional relocations will be conducted in the spring, around the time of calving, to determine reproductive status. Relocation flights will be conducted daily or every other day between 15 May and 1 June to maximize the likelihood that calving will be noted before a predation event occurs.

Results and Discussion

Work on this activity was discontinued after the first season due to funding limitations. This activity was not conducted during the reporting period.

Recommendations for Activity 1.2

Continue. Conduct this activity in RY22–RY26.

ACTIVITY 1.3. Conduct a winter survey of the WTH to determine its population size.

Data Needs

While fall composition surveys provide some indication of the WTH's population size, these surveys are often complicated by mixing between the WTH and the Nelchina caribou herd, especially on the boundary between Unit 14 and Unit 13. Surveys conducted in winter, while the majority of the Nelchina herd has moved to the eastern part of its range, would reduce the level of mixing and thus provide a better estimate of total population size.

Methods

A complete census across the Talkeetna Mountains could provide a better estimate of abundance and would provide a basis for modeling the population in future years. The 2011 caribou survey could be repeated to refine our estimate of the population at relatively low cost.

Results and Discussion

This activity was not conducted during the reporting period.

Recommendations for Activity 1.3

Continue. Conduct this activity in RY22–RY26.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor caribou mortality through field observations, hunter harvest reports, contacts with hunters, and other causes of mortality.

Data Needs

Monitoring, collecting, and analyzing harvest data are critical for sustained yield management. Annual summaries of harvest are needed to establish quotas and to understand harvest in relation to the caribou population assessments in Activity 1.1. Analysis of harvest data will facilitate department recommendations for future board proposals.

Methods

All caribou hunting in Units 14A and 14B is recorded by the draw hunt report (DC590) submitted by hunters who hunt in the units. These reports record the number of days hunted, location, methods of take and transportation, commercial services used, and the results of the hunter effort. Reports from the Alaska Department of Public Safety provide information on additional forms of mortality.

Season and Bag Limit

The season for draw hunters with the DC590 permit is 10 August–20 September and 1 December–15 March. The bag limit is 1 caribou.

Results and Discussion

Hunt results are summarized in Table 2. Hunters averaged 61 caribou annually during RY17–RY21. Hunt participation has typically been less than 50% of the permits awarded because access is limited. Most of the available caribou habitat can only be accessed by aircraft.

Table 2. Annual harvest, Western Talkeetna caribou, regulatory years 2017–2021, Units 14A and 14B, Southcentral Alaska.

Regulatory year	Permits issued	Did not hunt (%)	Successful permits (%)	Bulls		Cows		Unk ^a	Total harvest
				No.	%	No.	%		
2017	200	52	36	64	90	7	10	0	71
2018	201	50	35	62	89	8	11	0	70
2019	199	53	26	41	79	11	21	0	52
2020	200	46	31	49	79	13	21	0	62
2021	200	57	26	44	86	7	14	0	51

^a Unk represents unknown.

Hunter Residency and Success

The overall success rate averaged 63% during RY17–RY21 (Table 3), which is less than the 70% for RY12–RY16. The success rate among residents, including nonlocal residents, averaged 59% during RY17–RY21. The success rate for nonresidents averaged 75% during the same period. The success rate for RY19–RY21 was lower than the previous years; however, the cause is uncertain.

Harvest Chronology

Hunting pressure appears to be well distributed throughout the fall season (Table 4). The winter hunting season for the DC590 permit was first initiated in RY16. That year, 1 hunter was successful in harvesting in the late season. Since then, the winter season has seen little effort.

Transport Methods

Aircraft were the primary method of access for caribou hunters in the western Talkeetna Mountains (Table 5). A few hunters were successful with ATVs (all-terrain vehicles) and snowmachines. Off-road vehicles were occasionally used.

Alaska Board of Game Actions and Emergency Orders

In RY13, the board increased the permit levels for the DC590 drawing permit from 100 to 200 permits and added a “may be announced winter season.” In RY16, it added a set winter season of 1 December–15 March. The board added Unit 14A to the area available to hunt in RY18.

Recommendations for Activity 2.1

Continue.

3. Habitat Assessment-Enhancement

No habitat assessment or enhancement activities were conducted for caribou management in Units 14A and 14B during RY17–RY21.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

Harvest and survey data were stored on the Wildlife Information Network (WinfoNet), an internal database hosted on a server. Field data sheets were scanned and housed on the network server in the Palmer area biologist’s office. These sheets were also stored in file folders located in the Palmer assistant area biologist’s office. All electronic files were backed up nightly to off-site storage maintained on State of Alaska servers.

Agreements

There were no agreements with other agencies pertaining to caribou management in Units 14A and 14B during RY17–RY21.

Table 3. Hunt residency and success, Western Talkeetna caribou, regulatory years 2017–2021, Units 14A and 14B, Southcentral Alaska.

Regulatory year	Successful				Unsuccessful				Grand total hunters
	Local resident ^a	Nonlocal resident	Nonresident	Total (%)	Local resident ^a	Nonlocal resident	Nonresident	Total (%)	
2017	18	25	28	73	11	12	3	27	97
2018	18	34	18	69	13	16	2	71	101
2019	18	23	11	56	16	15	9	44	92
2020	17	27	18	57	24	19	3	43	108
2021	15	24	12	59	16	10	9	41	86

^a Residents of Units 14A and 14B.

Table 4. Annual fall and winter harvest chronology, Western Talkeetna caribou, regulatory years 2017–2021, Units 14A and 14B, Southcentral Alaska.

Regulatory year	Harvest percent										<i>n</i>
	Fall (by week)						Winter (by month)				
	10–16 Aug	17–23 Aug	24–30 Aug	31 Aug–6 Sep	7–13 Sep	14–20 Sep	Dec	Jan	Feb	Mar	
2017	17	8	21	28	13	8	0	0	3	2	71
2018	13	9	23	26	14	11	0	0	0	4	70
2019	33	12	19	21	4	8	4	0	0	0	52
2020	19	6	26	21	16	11	0	0	0	0	62
2021	22	18	12	14	24	8	2	0	0	0	50 ^a

^a One hunter did not report a date of kill.

Table 5. Harvest percent by transport method, Western Talkeetna caribou, regulatory years 2017–2021, Units 14A and 14B, Southcentral Alaska.

Regulatory year	Percent of harvest							Unk ^c	<i>n</i>
	Airplane	Horse	Boat	ATV ^a	Snowmachine	ORV ^b	Highway vehicle		
2017	90	0	0	0	4	6	0	0	71
2018	83	0	0	9	4	4	0	0	70
2019	87	0	0	7	4	0	0	2	52
2020	94	0	0	6	0	0	0	0	62
2021	92	0	0	2	2	2	0	2	51

^a ATV represents all-terrain vehicles, such as 4-wheelers.

^b ORV represents off-road vehicles.

^c Unk represents unknown.

Permitting

No permits were needed to conduct caribou management activities in Units 14A and 14B during RY17–RY21.

Conclusions and Management Recommendations

The bull-to-cow ratio averaged 52:100 during RY17–RY21, meeting the management objective of maintaining a fall bull-to-cow ratio of at least 35:100. Questions remain regarding the size, range, and reproductive parameters of the WTH. To make informed management decisions about the herd, the composition work currently taking place should continue, and additional collaring efforts should be implemented to bolster the sample size.

II. Project Review and RY22–RY26 Plan

Review of Management Direction

MANAGEMENT DIRECTION

The existing management direction for the WTH is appropriate for Units 14A and 14B, and there are no recommended changes. Additional long-term studies using radiocollared animals may warrant adjustments to the management direction in the future.

GOALS

No change from RY17–RY21.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

No change from RY17–RY21.

Intensive Management

No change from RY17–RY21.

MANAGEMENT OBJECTIVES

Maintain a minimum October bull-to-cow ratio of at least 35:100.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Conduct herd composition surveys for sex and age composition and determine relative population trends in productivity and mortality.

Data Needs

Caribou abundance and herd composition information are necessary for determining sustainable harvest levels. Sex and age composition information can also be used to estimate recruitment into the population. Sex and age ratio data may also be used to model (i.e., predict) population structure and trends.

Methods

Methods will be similar to those planned for RY17–RY21, but may be supplemented by another winter survey similar to the one conducted in 2011.

ACTIVITY 1.2. Determine herd range and parturition rates for caribou in the western Talkeetna Mountains.

Data Needs

No change from RY17–RY21.

Methods

Radio collars should be deployed in the herd to mark animals using standard capture and collaring techniques. Twenty to 30 radio collars will be deployed throughout the WTH range in late winter to have a representative sample of the herd. Collared animal locations will be monitored daily using GPS (Global Positioning System) to determine the extent of seasonal movements. Additional relocations will be conducted in the spring, around the time of calving, to determine reproductive status.

ACTIVITY 1.3. Conduct a winter survey of WTH to determine population size.

Data Needs

No change from RY17–RY21.

Methods

The 2011 track-based survey of caribou could be repeated at relatively low cost to refine our estimate of the population.

2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Monitor caribou mortality through field observations, hunter harvest reports, contacts with hunters, and other causes of mortality.

Data Needs

No change from RY17–RY21.

Methods

Caribou hunting will continue to be monitored in Units 14A and 14B through the draw hunt report (DC590) submitted by hunters in those units. These reports will be collected by the department and stored in WinfoNet. Reports from the Alaska Department of Public Safety will provide information on additional forms of mortality.

3. Habitat Assessment-Enhancement

No activities for caribou habitat assessment or enhancement are expected in Units 14A and 14B in RY22–RY26.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

No change from RY17–RY21.

Agreements

No management agreements are expected for caribou in Units 14A and 14B during RY22–RY26.

Permitting

No permits are expected for caribou in Units 14A and 14B during RY22–RY26.

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