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

Report Period 1 July 2012–30 June 2017, and

Plan Period 1 July 2017–30 June 2022

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Alaska Department of Fish and Game Division of Wildlife Conservation

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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 five 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 five 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 the Division of Wildlife Conservation.

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Please contact the authors or the Division of Wildlife Conservation at (907) 465-4190 if you have questions about the content of this report.

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 in Units 14A and 14B for the previous five regulatory years and plans for survey and inventory management activities in the five 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 five years. It replaces the caribou management reports of survey and inventory activities that were previously produced every three years.

I. RY12–RY16 Management Report

Management Area

The Talkeetna Mountain Range, in Southcentral Alaska, runs south to north. Caribou in the Western Talkeetna herd (WTH) utilize the mountainous areas of Unit 14B and the northeast corner of Unit 14A (Figure 1). Unit 14B covers approximately 2,512 mi^2 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 bank of Willow Creek and Peters Creek 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 and river and Cook Inlet on the south, and the Susitna River on the west. The total area of caribou habitat for the Western Talkeetna herd is approximately 2,200 mi^2.

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 (NCH). 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. One was formerly located near the head of Willow Creek." (Fall 1981).

Very little attention has been given to the WTH due to financial constraints and higher priority herds. Prior to 2011, only two surveys of the unit were completed in the previous 25 years. A

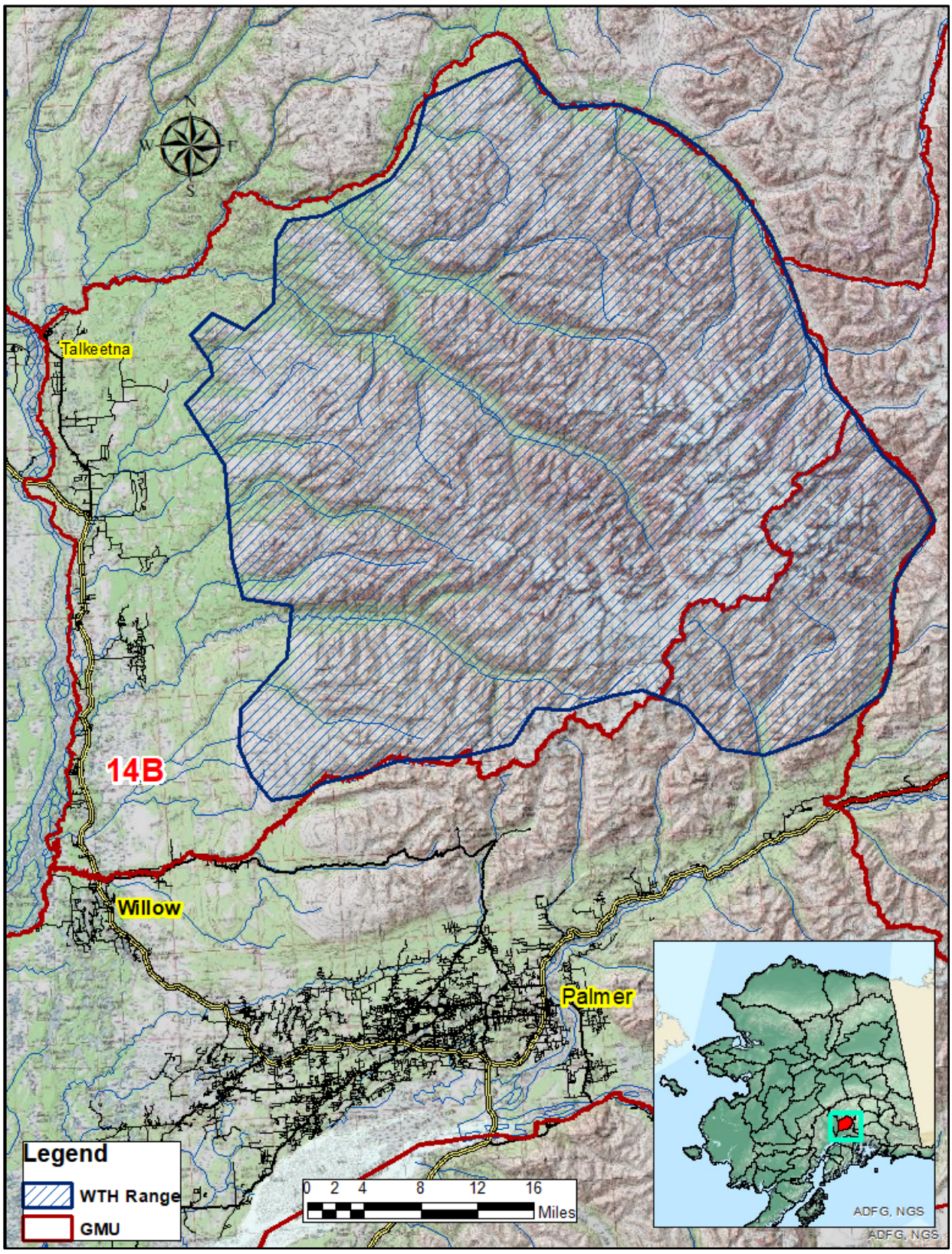

Figure 1. Map showing the range of the Western Talkeetna caribou herd in Unit 14B and the northeast portion of Unit 14A.

winter census in 2011 indicated a population of 1,679 animals in Units 14A and 14B. At that time 3 pilot-observer teams using PA-18 aircraft covered the unit in two days of flying. Caribou were seen in both Unit 14B and 14A (Brockman 2011).

In RY93 the first DC590 permits were issued that allowed hunters to harvest caribou in Unit 14B. Participation and harvest has been relatively light due in part to lack of access. Because of the 2011 census, the department proposed to the Board of Game increasing the number of permits available in both Units 14A and 14B and adding a winter season in which the caribou could potentially be accessed via snow machine. The winter season for DC590 was initiated in RY16, however Unit 14A was not included in the available hunt area during this reporting period.

Management Direction

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

Existing Wildlife Management Plans

- Alaska Wildlife Management Plans: Nelchina Caribou Management Plan (ADF&G 1976).

- ADF&G Division of Wildlife Conservation Strategic Plan (ADF&G 2002).

Goals

- Protect, maintain, and enhance the Western Talkeetna caribou herd and its habitat.

- Provide the greatest sustainable opportunity to hunt and harvest caribou for human consumption.

Codified Objectives

None.

Amounts Reasonably Necessary for Subsistence Uses

- The WTH has a negative finding for customary and traditional uses. The herd's geographical range falls within in a nonsubsistence area.

Intensive Management

There are currently no intensive management plans in place for the Western Talkeetna caribou herd. The Western Talkeetna Herd is not recognized as a specific caribou herd for purposes of an identified big game prey population.

MANAGEMENT OBJECTIVES

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

MANAGEMENT ACTIVITIES

Assessing population status and trends, and monitoring harvest and mortality are integral components of management of caribou in the Talkeetna Mountains. Survey and inventory (S&I) management activities used to monitor the 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 is 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

Surveys occurred in the fall, between the last week of September and the first week of October. Groups of caribou were identified by a pilot in a single fixed-wing aircraft who then relayed to DWC observers in a R-44 helicopter the location of caribou groups. The helicopter crew determined and recorded the age and sex composition of the groups from the air. A digital audio recorder was used to verify information gathered during the flight back to the office. Surveyors continued to observe and record groups until a minimum of 450 caribou were located, which served to reduce bias from any individual groups. Between RY12 and RY15, caribou group location data were informed by capture data from caribou that were initially radiocollared during capture events that occurred in the spring of 2012 (see Activity 1.2). By 2016, only 4 collars remained within the herd, and this method was discontinued.

Results and Discussion

The WTH population size is variable and is influenced by an occasional influx of caribou from the neighboring Nelchina caribou herd. The bull-to-100 cow ratio averaged 66:100 during the reporting period, indicating that there are bulls available for harvest in Units 14A and 14B in the fall (Table 1).

Table 1. Western Talkeetna caribou herd fall composition survey data, regulatory years 2012–2016, Southcentral Alaska.

Year	Bulls:100 Cows	Calves:100 Cows	Calves (%)	Cows (%)	Bulls (%)	Composition Sample Size
2012	42	25	15	60	25	2,029
2013	49	18	11	60	29	770
2014	95	45	19	41	40	1,258
2015	79	44	19	45	36	991
2016	65	21	11	54	35	435

Recommendations for Activity 1.1

Modify to include winter survey which would indicate total population size without the influence of the Nelchina herd, as the majority of those animals are further east during the winter.

ACTIVITY 1. 2. Determine herd range, and parturition rates for caribou in the Western Talkeetna Mountains.

Data Needs

Little is known of the herd range, movement patterns and parturition rates of the WTH. Determining the range of the WTH will aid in the management and delineation of the herd. Pregnancy rate is an indicator of productivity and herd health and can be used to inform models to predict herd size and population trends.

Methods

In March of 2012, 22 caribou cows were captured and fitted with radio collars. Three were ARGOS GPS collars, and 19 VHF collars were deployed. In late May and June of that year fixed-wing aircraft were used to find collared caribou and determine reproductive status. We classified caribou as parturient if they had a calf, hard antlers, or distended udder. After calving, cows were relocated quarterly to determine movement patterns and range.

Results

During the parturition surveys two collared caribou left the area. Of the remaining caribou, 17 showed udder development and 10 had calves at heel at some point during the surveys. Parturition rate was estimated to be 86%. One cow was dead, and a black bear was observed eating her calf. On average, caribou moved 12.75 miles from the point of capture in March to their calving location in May, however a distinction can be made between those that traveled greater than 12 miles (n=9) and those that travelled less than 7 miles (n=13). Using antler presence on May 18 as the benchmark, 100% of the caribou that travelled over 12 miles were pregnant, whereas only 69% of the caribou that moved less than 7 miles were likely pregnant. Sixty percent of the caribou from the east side of the Unit 14B moved 12 miles or more, while only 25% of the west side caribou moved greater than 12 miles. Among the caribou that moved over 12 miles, the most common direction of travel was north and east. Of the caribou originally captured in Unit 14B, 7 travelled to Unit 13E, and 2 caribou travelled to Unit 13A (Peltier 2012).

Movement tracking of caribou between RY12 and RY15 demonstrated relatively small home ranges and high site fidelity particularly among caribou on the western side of their range, and greater movement and larger ranges for caribou occupying the mountains along the eastern border of Unit 14B, where there is considerable mixing with the Nelchina herd.

Recommendations for Activity 1.2

Continue and repeat as necessary.

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 caribou population assessments (Activity 1.1). Analysis of harvest data will facilitate department recommendations for future Board of Game proposals.

Methods

Caribou hunt data in Units 14A and 14B are recorded on the DC590 draw hunt report which is submitted by hunters. These reports include number of days hunted, location, method of take and transportation, commercial services used (if any), and hunter effort. Reports from the Department of Public Safety provide information on additional forms of mortality.

Season and Bag Limit

The season for draw hunters with a DC590 permit was 10 August–20 September for RY12–RY15. Beginning in RY16, a 2nd hunting period was available from 1 December–15 March.

Results and Discussion

Hunt results are summarized in Table 2. Hunters averaged 45 caribou annually during the reporting period. The increase to twice the number of permits issued beginning in RY14 resulted in an average increase of 15 caribou harvested each season for the past three seasons. 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.

Hunter Residency and Success

Overall success rate averaged 70% during the reporting period (Table 3). Success rate among residents including nonlocal residents averaged 65% during this period. The success rate for nonresidents averaged 86% during the same period. The success rate in RY16 was much lower than any of the previous four years, however the cause is uncertain.

Table 2. Western Talkeetna caribou herd reported harvest from harvest reports, regulatory years 2012–2016, Southcentral Alaska.

Regulatory year	Number of permits issued	Percent that did not hunt	Percent of successful permits	Number of Bulls	(% Bulls)	Number of Cows	(% Cows)	Unknown	Total Harvest
2012	100	56	34	27	(79)	7	(21)	0	34
2013	100	54	35	29	(83)	6	(17)	0	35
2014	200	64	26	44	(86)	7	(14)	0	51
2015	200	60	31	50	(82)	11	(18)	0	61
2016	200	59	21	39	(93)	3	(7)	0	42

Table 3. Western Talkeetna caribou herd hunter residency and success regulatory years 2012–2016, Southcentral Alaska.

	Successful				Unsuccessful				
Regulatory year	Local resident[a]	Nonlocal resident	Non-resident	Total (%)	Local resident[a]	Nonlocal resident	Non-resident	Total (%)	Total hunters
2012	22	7	5	77	9	0	1	23	44
2013	22	8	5	76	7	4	0	24	46
2014	27	8	16	71	19	0	2	29	72
2015	38	5	18	75	18	2	0	25	81
2016	27	4	11	51	27	6	7	49	82

[a] The term local resident is defined as those who reside in Game Management Unit 14.

Harvest Chronology

Hunting pressure appears to be well distributed throughout the season (Table 4). The winter season for hunting on the DC590 permit was first initiated in RY16. That year one hunter was successful in harvesting in the late season.

Transport Methods

Aircraft are the primary method of access for caribou hunters in the Western Talkeetna Mountains (Table 5). A few hunters have been successful with ATVs and one hunter was successful in RY16 by snowmachine.

Table 4. Western Talkeetna caribou annual fall and winter harvest chronology for regulatory years 2012–2016, Southcentral Alaska.

Regulatory year	Harvest Periods										
	Week (fall)						Months (winter)				
	8/10–8/16	8/17–8/23	8/24–8/30	8/31–9/6	9/7–9/13	9/14–9/20	Dec	Jan	Feb	Mar	n
2012	12	23	12	29	12	12	No winter season				34
2013	40	9	11	9	14	17	No winter season				35
2014	27	10	6	37	12	8	No winter season				51
2015	10	7	26	29	15	13	No winter season				61
2016	33	14	12	12	10	17	2	0	0	0	42

Table 5. Western Talkeetna caribou herd percent of harvest by transport method, regulatory years 2012–2016, Southcentral Alaska.

Regulatory year	Percent of harvest								
	Airplane	Horse	Boat	ATV[a]	Snow-machine	ORV[b]	Highway vehicle	Unknown	*n*
2012	100	0	0	0	0	0	0	0	34
2013	94	0	0	6	0	0	0	0	35
2014	90	0	2	4	0	2	0	2	51
2015	96	0	0	2	0	2	0	0	61
2016	96	0	0	2	2	0	0	0	42

[a] All-terrain vehicle
[b] Off-road vehicle

Alaska Board of Game Actions and Emergency Orders

In the spring of 2013, the Board of Game increased the number of permits issued for the DC590 drawing permit from 100 to 200 permits. The board added Unit 14A to the area available to hunt, previously only Unit 14B, and added a second winter season of December 1–March 15.

Recommendations for Activity 2.1

- Continue.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

- Harvest data and survey data are stored on an internal database housed on a server (http://winfonet.alaska.gov/index.cfm).

- Field data sheets are scanned and housed on the network server in the Palmer Area Biologist office (O:\WC\Palmer Area Office Folder\Species\Caribou\Scanned Archive Files) and stored in file folders located in the Palmer Assistant Area Biologist's office.

- All electronic files are backed-up nightly to offsite storage maintained on State of Alaska (SOA) servers.

Agreements

None.

Permitting

None.

Conclusions and Management Recommendations

Questions remain regarding the size, range, and reproductive parameters of the WTH. In order 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 RY17–RY21 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 from the previous reporting period. Additional long-term studies using radiocollared animals may warrant adjustments to the management direction in the future.

GOALS

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

CODIFIED OBJECTIVES

None.

Amounts Reasonably Necessary for Subsistence Uses

The WTH has a negative finding for customary and traditional uses. The herd's geographical range falls within in a nonsubsistence area.

Intensive Management

There are currently no intensive management programs for caribou in Unites 14A and 14B. The Western Talkeetna Herd is not recognized as a specific caribou herd for purposes of an identified big game prey population.

MANAGEMENT OBJECTIVES

- Maintain a minimum October bull-to-cow sex 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. Determine relative population trends in productivity and mortality.

Data Needs

Caribou abundance and herd composition information is 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 reported above in the report but may be supplemented by another winter survey similar to the 2011 survey mentioned above. Radio tracking of Nelchina caribou has indicated that there is herd mixing with the Western Talkeetna herd during composition surveys in the fall. A winter survey would not provide sufficient information on sex and age composition of the herd, however it would indicate total population size without the

influence of the Nelchina herd, as the majority of those animals are further east during the winter.

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

Data Needs

Little is known of the herd range, movement patterns, and parturition rates of the WTH. Work on this activity was discontinued after the first season due to funding limitations. Determining the range of the WTH and distinguishing it from the neighboring Nelchina herd will aid in the management of the herd. Pregnancy rate as an indicator of productivity can be used to inform models to predict herd size and population trends.

Methods

Radio collars should be deployed in the herd to mark animals using standard capture and collaring techniques and the animals should be located on a regular basis in a method similar to that outlined in the Methods section 1.2 of this report. Twenty to 30 radio collars will be deployed throughout the WTH range in late winter in order to have a representative sample of the herd. 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 would be noted before a predation event occurred.

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

Data Needs

While fall composition surveys provide some indication of the WTH size, these surveys are often complicated by mixing between the WTH and the Nelchina caribou herd (NCH), especially on the boundary with Unit 13. Surveys conducted in the winter while the majority of the NCH 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 random sampling technique like that employed in GSPE surveys for moose, or a complete census across the Talkeetna Mountains, could provide a better estimate of abundance and would provide a basis for modeling of the population in future years. The 2011 survey of caribou could be repeated in order to refine our estimate of the population at relatively low cost.

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

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 caribou population assessments.

Methods

Caribou hunting will continue to be monitored in Units 14A and 14B through the draw hunt report DC590 submitted by hunters who participate in the hunting opportunity. These reports are collected by the department and stored in ADF&G's Wildlife Information Network database (WinfoNet). Reports from Department of Public Safety can provide information on additional forms of mortality.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

No issues have been identified.

Data Recording and Archiving

No change from report.

Agreements

No change from report.

Permitting

No change from report.

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