

White Mountains Caribou Herd Management Report and Plan, Game Management Units 25C, 20B, and 20F:

Report Period 1 July 2017–30 June 2022

Anthony L. Hollis



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This species management report and plan was reviewed and approved for publication by Jason Caikoski, Management Coordinator for Region III for the Division of Wildlife Conservation.

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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 Units 25C, 20B, and 20F, collectively considered the White Mountains caribou herd, for the 5 regulatory years 2017–2021. The plan for the next 5 regulatory years, 2022–2026, will be described in *Fortymile Caribou Herd management report and plan, Game Management Units 20B, 20C, 20D, 20E, and 25C: Report period 1 July 2017–30 June 2022 and plan period 1 July 2022–30 June 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 them 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 more efficiently report on trends and to 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.

I. RY17–RY21 Management Report

Management Area

The White Mountains caribou herd (WMCH) occupies the White Mountains north of Fairbanks in portions of Units 25C (western portion), 20B (northern portion), and 20F (eastern portion). The area primarily includes land managed by U.S. Bureau of Land Management (BLM), including the White Mountains National Recreation Area, the Steese National Conservation Area, and the Mount Prindle Research Natural Area; land managed by the U.S. Fish and Wildlife Service such as the Yukon Flats National Wildlife Refuge; and land managed by the state of Alaska, which encompasses approximately 3,090 mi². Temperatures range from 70°F to 80°F in the summer and from -40°F to -50°F in winter.

The White Mountains geographic area includes the White Mountains National Recreation Area and lands north of the Steese Highway. This area is the namesake for WMCH and is a portion of their range.

Summary of Status, Trend, Management Activities, and History of the White Mountains Caribou Herd

Prior to 1960s, individuals from the Fortymile caribou herd (FCH) occupied the White Mountains during the summer months but left the area soon after calving season ended and no caribou were reported in the area during the fall and winter (Jones 1961). Throughout the 1960s, as the FCH population declined, the herd stopped using the White Mountains for calving and rarely crossed north and west of the Steese Highway (Valkenburg 1988).

During the 1970s, a group of 100–200 caribou were found residing northwest of the Steese Highway year round (Valkenburg 1988). This group was determined to be separate from FCH and has since been referred to as WMCH. While the origin of WMCH was assumed to be remnants of a larger FCH, genetic evidence suggests that WMCH individuals are distinct from

FCH individuals, and therefore WMCH may have always been a separate herd (Mager et al. 2024). Regardless of their origin, the herds (WMCH and FCH) mix extensively when the FCH population is high and, conversely, there is little mixing when FCH numbers are low.

WMCH appeared to grow throughout the 1980s and the population was estimated by BLM at 1,200 caribou by 1992 (Young Jr. 2015). The WMCH population remained stable through the 1990s, began declining during the 2000s, and by 2011 was estimated to be below 500 caribou. While the WMCH population was declining, FCH was increasing from an estimated 19,975 individuals in 1987 to over 80,000 individuals by 2017 (Fortymile Caribou Herd Status, Gallenberg, E., 2024, Alaska Department of Fish and Game, Fairbanks, unpublished document). The growing FCH began crossing the Steese Highway and mixing with WMCH during 2008. When caribou from FCH returned south of the Steese Highway later that winter, a few collared WMCH individuals appeared to follow (Young Jr. 2015).

This pattern of the herds mixing has increased since 2008, resulting in a change in management strategy. Prior to RY12, the WMCH and FCH hunt seasons, dates, and hunt locations were managed separately and harvest from WMCH was very low (<30 caribou per regulatory year from RY02 to RY12). Since the late 1990s, FCH harvest was allocated using 3 zones. In *Fortymile caribou herd harvest management plan 2006–2012*, which was endorsed by the Board of Game (BOG) in May 2006, a map with 3 geographically distinct, numbered zones was introduced (Advisory Committee Coalition 2006). These zones have been carried forward in each subsequent FCH harvest management plan. Beginning in RY12, the White Mountains area was added as a fourth zone in the FCH management scheme, and all harvest quotas for WMCH are now managed as part of the overall FCH management plan (Fig. 1).

Management Direction

EXISTING WILDLIFE MANAGEMENT PLANS

Alaska wildlife management plans: A public proposal for the management of Alaska's wildlife: Interior Alaska has generally been the guiding document for management of WMCH (ADF&G 1976). The most recent species management report is Nelson (2020), which includes a recommendations section outlining the management direction.

GOALS

- G1. Ensure that increased recreational use and mining development do not adversely affect caribou or caribou hunting opportunities.
- G2. Provide for the greatest sustained opportunity for hunting caribou in the White Mountains.
- G3. Provide for an opportunity to view and photograph caribou in the White Mountains.
- G4. Monitor WMCH and FCH movements to better determine if and to what extent mixing is occurring especially during rutting and calving periods.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

WMCH does not have a positive finding for customary and traditional uses and there is no amount designated for this herd as reasonably necessary for subsistence uses.

Intensive Management

There are no intensive management objectives for WMCH during RY17–RY21.

MANAGEMENT OBJECTIVES

M1. Maintain a stable or increasing population with a fall bull-to-cow ratio of at least 30:100.

MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Conduct fall composition surveys.

Data Needs

A composition survey is necessary to monitor the management objective (M1) fall bull-to-cow ratio of 30:100. Maintaining a ratio of greater than or equal to this will ensure that enough bull caribou are available in the herd for reproduction purposes and to achieve goals G2 and G3. Composition data can also be used to determine annual recruitment potential, which is defined as the number of calves surviving until the surveys are flown in the fall, and is determined via the ratio of calves to 100 cows. This information is important in monitoring population fluctuations, especially with WMCH declining over the last decade. While much of this decline could be attributed to mixing with FCH, monitoring recruitment for WMCH would indicate whether population level changes are due to declining productivity and calf survival or other causes.

Methods

The methods for this activity are described in Nelson 2020.

Results

Fall composition surveys were not conducted during RY17–RY21 due to high numbers of FCH individuals intermixed with WMCH during survey periods. This increased presence eliminated the chance of conducting a fall composition count which would consist of only animals from WMCH.

Recommendations for Activity 1.1

Discontinue due to increased mixing between FCH and WMCH. Even when a majority of the FCH moves out of the White Mountains, department biologists will not be able to differentiate between remaining FCH animals and individuals from WMCH.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor hunter harvest and effort.

Data Needs

Monitoring hunter harvest is necessary to document the human-caused mortality of WMCH annually and to ensure that the department is providing the greatest opportunity for hunting caribou in the White Mountains (G2).

Methods

Since WMCH and FCH overlap during certain parts of the year, harvest location is used to distinguish between the herds. Caribou harvested within Zone 4 of the FCH–WMCH harvest management scheme and south of the Yukon River in Unit 20F were considered individuals from WMCH (Fig. 1). Harvest was summarized by regulatory year. It is worth noting that FCH was in Zone 4 during RY17–RY21, so caution should be used when interpreting harvest numbers as increased intermixing may have led to a higher proportion of FCH animals being attributed to the WMCH harvest numbers.

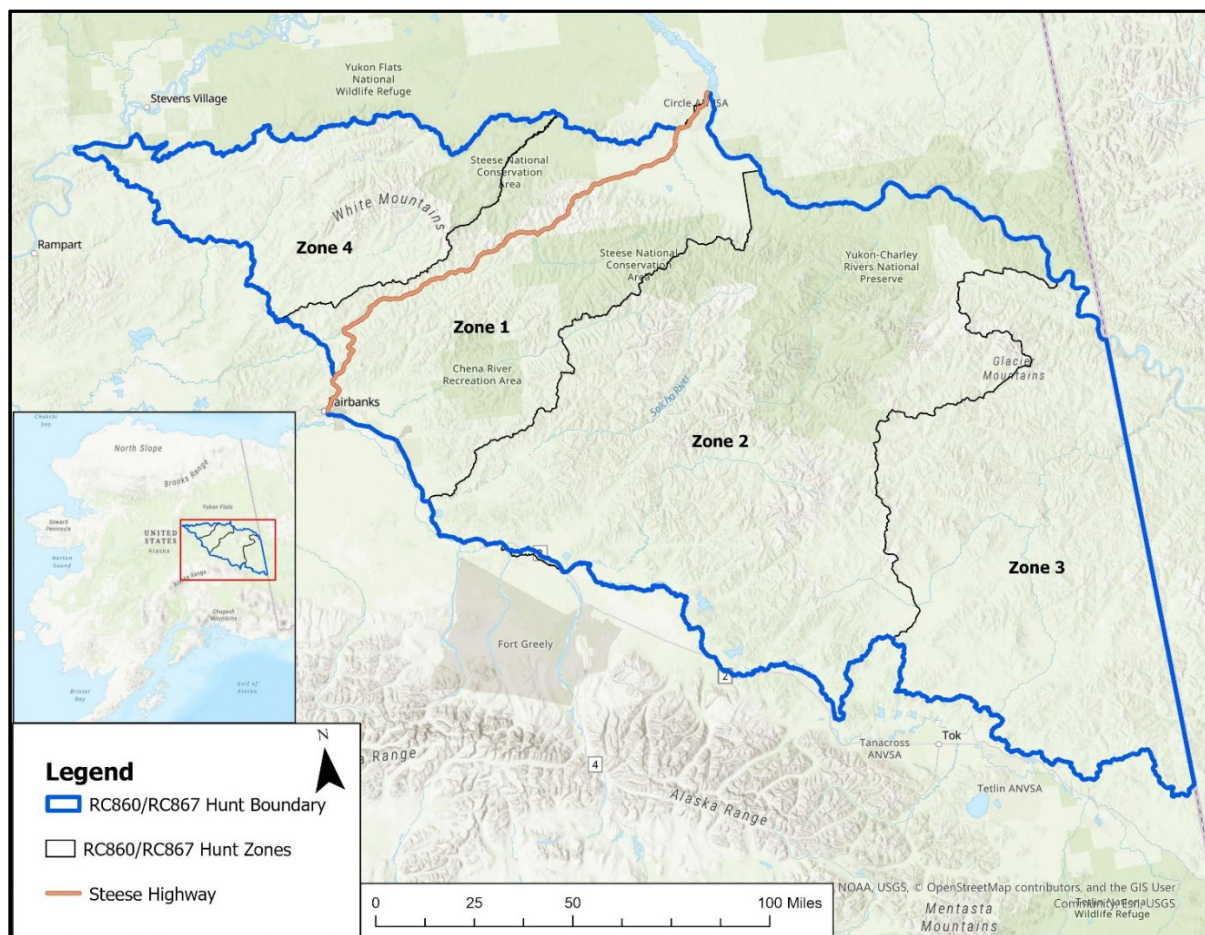


Figure 1. Fortymile and White Mountains caribou herds hunting zones for regulatory years 2017–2022.

Season and Bag Limit

WMCH is currently managed as part of the FCH–WMCH management scheme. Bag limits and season dates were adjusted according to *Fortymile caribou herd harvest plan 2012–2018* (Harvest Management Coalition 2012), henceforth referred to as *FCH harvest management plan*.

Results and Discussion

Since RY12, season dates and bag limits for WMCH have been guided by the *FCH harvest management plan* under Zone 4. They have continued to be separately documented and reported as harvest of WMCH. However, Zone 4 harvest during RY17–RY21 exhibited large fluctuations when FCH used the White Mountains. This makes it impossible for managers to determine what proportion of the harvest is from WMCH and what is from FCH. Prior to RY18, it was rare to have a harvest of more than 26 caribou in Zone 4 annually. However, during RY18–RY21 the harvest ranged from 133–300 caribou, which is believed to have largely come from FCH, as this herd was in the area during that time (Table 1).

Table 1. Fall and winter harvest from the White Mountains (Zone 4), regulatory years 2017–2021, northwest Alaska.

Regulatory year	Fall harvest (RC860 ^b)			Winter harvest (RC867 ^b)			Combined harvest			
	M	F	Unk	M	F	Unk	M	F	Unk	Total
2017	17	0	0	5	3	0	22	3	0	25
2018	99	1	0	48	19	0	147	20	0	167
2019	84	59	0	0	0	0	84	59	0	143
2020	89	32	0	8	4	0	97	36	0	133
2021	30	19	0	85	165	1	115	184	1	300

^b RC refers to registration caribou hunt.

Harvest by Hunters

- In RY17, the estimated White Mountains (Zone 4) harvest was 25 caribou total (Table 1). There were 17 bulls harvested during the RC860 fall hunt and 5 bulls and 3 cows were taken during the RC867 winter hunt.
- In RY18, the estimated White Mountains (Zone 4) harvest was 167 caribou total. There were 99 bulls and 1 cow taken during the RC860 fall hunt and 48 bulls and 19 cows were harvested during the RC867 winter hunt.
- In RY19, the estimated White Mountains (Zone 4) harvest was 84 bulls and 59 cows taken during the RC860 fall hunt. The winter hunt, RC867, was cancelled in RY19.
- In RY20, the estimated White Mountains (Zone 4) harvest was 90 bulls and 31 cows during the RC860 fall hunt, with 8 bulls and 4 cows taken during the RC867 winter hunt.

- In RY21, the estimated White Mountains (Zone 4) harvest was 300 caribou total. There were 30 bulls and 19 cows harvested during the RC860 fall hunt; 115 bulls, 184 cows and 1 caribou of unknown sex were harvested during the RC867 winter hunt.

Hunter Residency and Success

Based on harvest reports, successful hunters in the White Mountains (Zone 4) are primarily Alaska residents (Table 2).

Table 2. Residency of successful caribou hunters in the White Mountains (Zone 4), regulatory years 2017–2021, northwest Alaska.

Regulatory year	Resident ^a	Nonresident ^b	Total
2017	23	2	25
2018	159	8	167
2019	136	7	143
2020	126	7	133
2021	289	11	300

^a Resident refers to individuals who are residents of Alaska.

^b Nonresident refers to individuals who are not residents of Alaska.

Permit Hunts

Since RY12, the White Mountains hunt has been regulated by registration permits through *FCH harvest management plan* under Zone 4; RC860 in the fall and RC867 in the winter. This management strategy will continue as long as FCH continues to range into the White Mountains and mix with WMCH.

Harvest Chronology

Because WMCH is regulated through the *FCH harvest management plan*, harvest chronology is highly variable and based on when seasons are opened and closed during both the fall and winter seasons.

Transport Methods

During RY17–RY20, 4-wheelers were the dominant transportation method to access the White Mountains (Zone 4), but RY21 showed increased snowmachine use. This reflected the increased hunting effort during the winter RC867 season (Table 3).

Other Mortality

No other mortality was reported for WMCH during RY17–RY21.

Table 3. Transportation methods used by successful caribou hunters in White Mountains (Zone 4), regulatory years 2017–2021, northwest Alaska.

Regulatory year	Airplane	Boat	4-wheeler	Snowmachine	Highway vehicle	Off-road vehicle
2017	4%	0%	60%	24%	4%	4%
2018	0%	0%	71%	0%	15%	5%
2019	1%	0%	72%	0%	13%	13%
2020	2%	1%	56%	7%	20%	10%
2021	0%	0%	12%	69%	15%	2%

Alaska Board of Game Actions and Emergency Orders

No BOG actions occurred during RY17–RY21. All emergency orders issued during the report period were part of the *FCH harvest management plan* and can be viewed online.¹ These orders were not for WMCH management.

Recommendations for Activity 2.1

Discontinue. This area is managed by *FCH harvest management plan*, which does not distinguish which herd the harvest is from or provide insight into WMCH.

3. Habitat Assessment-Enhancement

No habitat assessment or enhancement activities occurred for WHCH during RY17–RY21 and no changes are recommended.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

There were no nonregulatory management problems during RY17–RY21.

Data Recording and Archiving

Harvest data are stored on WinfoNet (ADF&G's Wildlife Information Network), archived under Harvest Information and Survey and Inventory Tools. All other electronic files such as survey memoranda, reports, and maps are located on the Fairbanks server. All hard copies of field capture cards, notes, and reports are stored in office 118 filing cabinets. Field capture cards were scanned and stored along with electronic copies of memos and reports on the S: drive in Fairbanks and in WinfoNet data archives.

Agreements

As described above, the current agreement is detailed in *FCH harvest management plan* (Harvest Management Coalition 2012).

¹ Fortymile caribou herd emergency orders can be viewed at www.adfg.alaska.gov/index.cfm?adfg=wcnews.main.

Permitting

Not applicable.

Conclusions and Management Recommendations

During RY17–RY21, management activities for WMCH were difficult due to FCH being present in the White Mountains over a large portion of the year. Although the department does not currently have radio or satellite collars on any of the WMCH caribou, monitoring the collared FCH individuals showed that this herd had a presence in the White Mountains during the fall, winter, and spring months. This increased usage of the White Mountains by FCH has made it difficult to manage WMCH separately from FCH.

All goals of this management report (G1, G2, G3, and G4) were met during this report period. It is unknown whether we met our management objective of maintaining a fall bull-to-cow ratio of at least 30:100 because the FCH was in the area during the fall rut. Increased harvest likely only occurs when the FCH is in the area but determining which caribou herd the harvest is from is impossible.

Although there is evidence of immigration and emigration between WMCH and FCH, it is nearly impossible to manage these herds separately when they use the same geographic area. Therefore, it is recommended that this will be the last species management report specific to WMCH and a RY22–RY26 plan for WMCH will not be developed. Future information regarding this area will be reported in the FCH management report and plan.

II. Project Review and RY22–RY26 Plan

Management direction for WMCH for RY22–RY26 will be incorporated into the FCH species management report and plan series. Please refer to *Fortymile Caribou Herd management report and plan, Game Management Units 20B, 20C, 20D, 20E, and 25C: Report period 1 July 2017–30 June 2022 and plan period 1 July 2022–30 June 2027*.

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