Southern Alaska Peninsula Caribou Herd Management Report and Plan, Game Management Unit 9D:

Report Period 1 July 2017–30 June 2022, and

Plan Period 1 July 2022–30 June 2027

Amy M. Vande Voort

Evelyn M. Lichwa

2025

Alaska Department of Fish and Game Division of Wildlife Conservation

Species Management Report and Plan ADF&G/DWC/SMR&P-2025-27

Southern Alaska Peninsula Caribou Herd Management Report and Plan, Game Management Unit 9D:

Report Period 1 July 2017–30 June 2022, and

Plan Period 1 July 2022–30 June 2027

PREPARED BY:

Amy M. Vande Voort
Area Wildlife Biologist

Evelyn M. Lichwa
Assistant Area Wildlife Biologist

APPROVED BY:

Todd Rinaldi
Management Coordinator

REVIEWED BY:

Manny Eichholz
Assistant Management Coordinator

PUBLISHED BY:

Ben Henning
Technical Reports Editor

Alaska Department of Fish and Game
Division of Wildlife Conservation
PO Box 115526
Juneau, AK 99811-5526

Hunters are important founders of the modern wildlife conservation movement. They, along with trappers and sport shooters, provided funding for this publication through payment of federal taxes on firearms, ammunition, and archery equipment, and pay state hunting license and tag fees. These taxes and fees fund the federal Wildlife Restoration Program and the State of Alaska's Fish and Game Fund, which provided funding for the work reported on in this publication.

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

Species management reports and plans are available via the Alaska Department of Fish and Game's public website (www.adfg.alaska.gov) or by contacting Alaska Department of Fish and Game's Division of Wildlife Conservation, PO Box 115526, Juneau, AK 99811-5526; phone: (907) 465-4190; email: dfg.dwc.publications@alaska.gov. The report may also be accessed through most libraries, via interlibrary loan from the Alaska State Library or the Alaska Resources Library and Information Services (www.arlis.org). To subscribe to email announcements regarding new technical publications from the Alaska Department of Fish and Game, Division of Wildlife Conservation please use the following link: http://list.state.ak.us/mailman/listinfo/adfgwildlifereport.

This document, published in PDF format only, should be cited as:

Vande Voort, A. M., and E. M. Lichwa. 2025. Southern Alaska Peninsula caribou herd management report and plan, Game Management Unit 9D: Report period 1 July 2017–30 June 2022, and plan period 1 July 2022–30 June 2027. Alaska Department of Fish and Game, Species Management Report and Plan ADF&G/DWC/SMR&P-2025-27, Juneau.

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

Contents

List of Figures

List of Tables

Purpose of this Report

This report provides a record of survey and inventory management activities for caribou (*Rangifer tarandus granti*) in Game Management Unit 9D for the 5 regulatory years 2017–2021 and plans for survey and inventory management activities in the next 5 regulatory years, 2022–2026. 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

Game Management Unit 9D is approximately 3,325 mi^2 and consists of the southwestern portion of the Alaska Peninsula, bounded on the northeast by a line from the southernmost head of Port Moller Bay to the head of American Bay, on the northwest by the Bering Sea, on the southeast by the Pacific Ocean, and on the southwest by Bechevin Bay and Isanotski Strait at False Pass (Fig. 1). Mountains of the Aleutian Range extend down the Pacific coast of the peninsula providing cool, maritime conditions, alpine tundra, heavy precipitation, and high winds. The area is of volcanic origin with ongoing seismic and volcanic activity. Unvegetated areas of glaciers, snowfields, and ash flats dominate at elevations over 1,000 ft (300 m; Pitcher et al. 1990). Unvegetated to lightly vegetated areas of volcanic ash, sand, and cinder (known as cinder blow) are maintained by the wind at low elevation in various sizes and shapes. Portions of 3 ecological regions are found in Unit 9D including the Aleutian Range, Bristol Bay Lowlands, and the Alaska Peninsula (Nowacki et al. 2001).

Potential predators of caribou (*Rangifer tarandus*) such as bald eagles (*Haliaeetus leucocephalus*), brown bears (*Ursus arctos*), coyotes (*Canis latrans*), golden eagles (*Aquila chrysaetos*), wolverines (*Gulo gulo*), and wolves (*Canis lupus*), occur throughout the Alaska Peninsula at varying densities.

Summary of Status, Trend, Management Activities, and History of Caribou in Unit 9D

The range of the Southern Alaska Peninsula caribou herd (SAP) extends southwest from Port Moller to Isanotski Strait at False Pass. Skoog (1968) speculated that the Alaska Peninsula was marginal habitat for sustaining large caribou populations because of severe icing conditions and ash from frequent volcanic activity affecting food supply and availability. SAP traditionally calves in the Black Hill or Trader Mountain saddle area and on the Caribou River Flats. Some smaller groups calve between Cold Bay and Bechevin Bay, and in the Joshua Green River valley and lowlands.

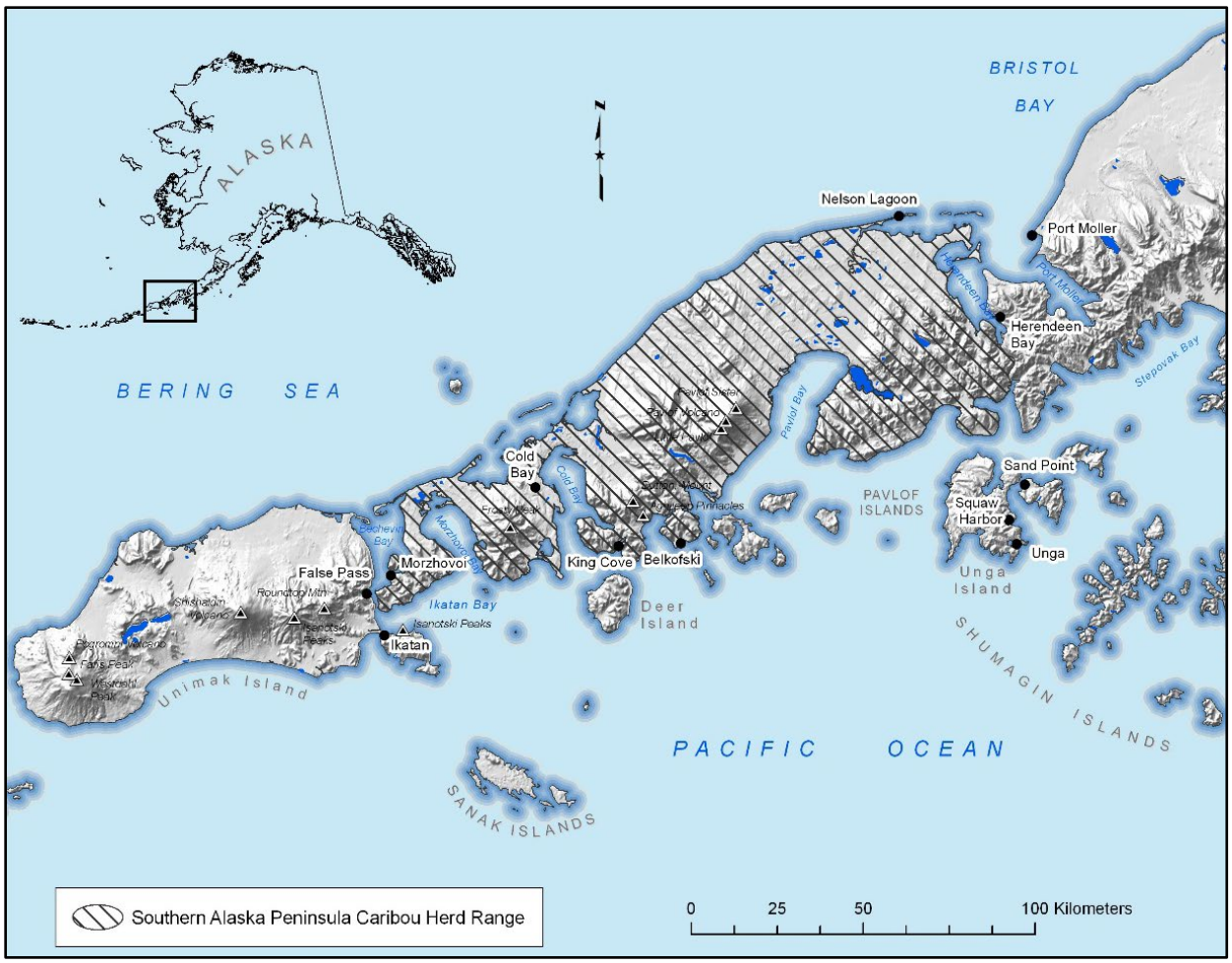

Figure 1. Southern Alaska Peninsula caribou herd range at the southwestern tip of the Alaska Peninsula, Unit 9D, regulatory years 2017–2021.

There are historical reports of caribou moving between the Alaska Peninsula and Unimak Island, including what may have been a substantial immigration of the Unimak caribou herd (UCH) in 1976 (Pitcher et al. 1990). Recently, studies have determined that UCH are genetically isolated from mainland caribou with sufficient fidelity to calving areas on the island to be designated a separate herd from SAP (Zittlau et al. 2009, Mager 2012). Both radiotelemetry and genetic studies indicate SAP is also separate from the Northern Alaska Peninsula caribou herd (NAP; Zittlau et al. 2009, Mager 2012). Genetic differentiation of SAP is due in part to geographic barriers and isolation (Mager 2012). Pitcher et al. (1990) suggested that the insular condition of SAP was also related to the absence of range into which it might expand which was not already occupied by other caribou herds (i.e., NAP and UCH). In October 1998, 6 caribou in the extreme southeastern corner of Unit 9E and 8 caribou in the northeastern portion of Unit 9D were fitted with satellite collars to further investigate whether interchange between herds occurred in this area. None of these caribou were detected moving from the unit in which they were captured, nor have other radiocollared caribou cows shown movement between units in the last 2 decades.

SAP has been characterized by wide population fluctuations, ranging from 500 caribou to more than 10,000. Following a peak of more than 10,000 caribou in 1983, SAP began a steep population decline (Pitcher et al. 1990). By 1993, the herd had declined to below 2,500 individuals, which is below the established threshold to implement a hunting closure. Poor nutrition appears to have played a major role in the decline of SAP in the 1980s and early 1990s (Post and Klein 1999). Predation by wolves and brown bears and human-induced harvest may also have contributed to the decline (Pitcher et al. 1990, Sellers et al. 1999).

The SAP population stabilized during the mid-1990s (Sellers 1995, Butler 2005). In early 1997, a survey of SAP conducted by Izembek National Wildlife Refuge (INWR) showed a substantial increase in numbers, and a federal subsistence season was opened that fall. The herd continued to grow slowly, and in RY99 a general state hunt was opened. Herd size grew to a minimum of 4,100 caribou by 2002 (Butler 2007). Following this brief recovery, estimates of calf recruitment were chronically low from 2002 to 2007, and population size declined rapidly, bottoming out at approximately 657–750 caribou in 2007 (Butler 2009). State and federal hunts were closed in RY07 because of increasing concern for the status of the herd. Federal subsistence hunts were reopened in RY12, and a state hunt was started in RY13 when counts were again above 1,300 caribou and calf recruitment was high. Starting in RY16, harvest has become increasingly liberalized to slow SAP population growth and avoid a collapse reminiscent of the decline experienced between the mid-1980s to the early-1990s.

Sellers et al. (1999) identified wolves as an important contributor to an overall mortality rate of 69% for SAP calves in 1999. Predation mortality was not limited to the first 2 weeks of life common to other caribou populations, but rather was prolonged, with approximately half of mortality occurring after calves reached 2 weeks of age (Sellers et al. 1999). In 2007, 99% of SAP calves died before reaching 1 month of age, which Butler (2009) attributed primarily to predation. Nutrition was theorized by ADF&G biologists not to be a factor based on body condition of captured adult females, high pregnancy rates, and blood serology analysis (Butler 2009). In spring and summer 2008, a predator control program was implemented to reduce wolf predation on caribou calves on the calving grounds. Selective removal of 28 wolves from 2 wolf packs during calving in 2008 immediately improved calf survival, which increased from less than 1% in 2007 to 64% in 2008 (Butler 2009). This program continued with selective removal of 8 wolves in 2009 and 2 wolves in 2010, after which the program was deactivated. SAP population size, calf-to-cow ratio, and bull-to-cow ratio increased rapidly after wolf control and continued to increase during RY17–RY21.

Harvest of SAP was high from RY80 to RY85; in several years it was estimated to exceed 1,000 individuals. Starting in RY86, restrictive regulations reduced harvests as the herd continued to decline. By RY93 the herd was below 2,500 individuals and all hunting was closed through RY98. In RY99, a state hunt with a 1 caribou bag limit was resumed in Unit 9D with a resident season 1–20 September and 15 November–31 March. Between RY99 and RY04, the bag limit was 1 caribou for residents and 1 bull for nonresidents. In RY05, the resident bag limit went from 1 caribou to 1 bull in the fall portion of the season or 1 antlerless caribou during the winter. State and federal hunts were once again closed in RY08 because of concern over the herd's status, and they remained closed until a federal subsistence hunt was opened in RY12 and a state hunt was reinstated in RY13. Also in RY13, the resident bag limit was 1 bull during 1 August–30 September or 1 caribou during 15 November–31 March. In RY16 the state switched from a

Tier II hunt to harvest tickets for residents and nonresidents. The bag limit was 1 caribou for both residents and nonresidents from 1 August–30 September, with residents having an additional winter season from 15 November–31 March. Beginning in RY18 the bag limit increased to 2 caribou for residents and 2 bulls for nonresidents. In RY20 the bag limit was again increased for residents to 3 caribou. The herd has continued to grow despite the increased bag limits and subsequent increased harvest, which indicates harvest is not substantial enough to limit population growth and habitat is not limiting at this population size.

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: Southwestern Alaska (ADF&G 1976).
- Strategic Plan (ADF&G 2002).
- Southern Alaska Peninsula Caribou Herd Operational Plan (Butler 2008).

Goals

To provide:

- The greatest sustainable opportunity to participate in hunting caribou.
- An opportunity to hunt caribou under aesthetically pleasing conditions.
- An opportunity to take large-antlered caribou.

Codified Objectives

Amounts Reasonably Necessary for Subsistence Uses

SAP has a positive finding for customary and traditional use. The amount necessary for subsistence in Unit 9D is 100–150 caribou (5AAC 99.025). Codified regulations provide a Tier II drawing hunt for residents only when harvestable surplus is below 1,000.

Intensive Management

SAP is recognized as an intensive management (IM) population. IM programs for SAP were approved by the Board of Game (BOG, board) in 2008 (5AAC 92.108). The IM population objective established by the board for SAP is 1,500–4,000 caribou and the IM harvest objective is 150–200 caribou annually.

MANAGEMENT OBJECTIVES

- Sustain a total population with a minimum of 3,000 caribou and a maximum of 4,000 caribou.
- Maintain a minimum fall bull-to-cow ratio of 35:100.
- Provide a limited harvest of bulls when the herd exceeds 1,000 caribou.
- Cow harvests may be authorized when the population exceeds 2,000 caribou and population size is increasing based on 3 years' worth of population data.

The first objective required maximizing harvest if the population exceeded 3,000 animals. This required a BOG action to increase the annual bag limit above 1 caribou per hunter. Based on historical harvest reports, limiting the herd to 4,000 caribou will be problematic with hunter harvest alone, even if the harvest regime shifted to an unrestricted season and bag limit. The most likely scenario in the next decade or 2 will be the same that occurred during the 1980s: a continued increase to over 10,000 caribou resulting in overbrowsing of habitat, followed by a steep decline, decades-long recovery of the range, hunting closure, and controversial predator control to conserve a remnant population. Closing a hunt because ADF&G could not adequately manage a herd is not sustainable management, although it is often resorted to with caribou. An alternative, in addition to unrestricted hunter harvest, would be a culling of the herd by ADF&G. Culling of ungulates for sustainability of a herd is currently not a method we use.

Objectives 3 and 4 above originated as guidelines (among many others) in a joint management plan with the U.S. Fish and Wildlife Service (FWS) in 2008. Previous ADF&G staff believe that they should be considered guidelines only and removed as objectives.

MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Conduct fall composition surveys to estimate sex and age ratios, trend, productivity, and mortality.

Data Needs

ADF&G biologists used the fall composition survey to monitor bull-to-cow ratio, number, and percent of bulls in the population to determine harvest quota, provide maximum hunting opportunity, and provide input for the population model. Calf parameters were also used in the model and to monitor productivity and survival. Composition surveys also provided a means to monitor population trend.

Methods

ADF&G biologists attempted to conduct aerial surveys annually in October using fixed-wing aircraft and a helicopter to assess population composition. Pilots located caribou groups with radio telemetry equipment and biologists aboard an R-44 helicopter determined the composition

of each group (cow, calf, yearling, and bull: small, medium, or large). All caribou encountered during the survey were included in the sample (the total number of caribou sampled that year, except for those collared caribou detected by radio signal without visual confirmation while in the clouds), and therefore the sample sizes can be considered an index to population trend. Staff assessed survey comprehensiveness using the proportion of radiocollared caribou encountered relative to total number of radiocollared caribou. Composition data were entered into a deterministic computer model to help calculate predicted herd dynamics and size, based on observed composition parameters and harvest.

Results and Discussion

ADF&G staff conducted a composition survey of SAP in RY18 and RY20 during RY17–RY21 (Table 1). The proportion of bulls in the population remained above the minimum objective bull-to-cow ratio of 35:100. The proportion of calves decreased from RY12–RY16. Using survey results as input parameters, the population size predicted by the computer model continued to increase during the reporting period. The population was predicted to be above the higher management objective (4,000 caribou) in 2021 given survey input parameters.

Table 1. Southern Alaska Peninsula caribou herd composition, U. S. Fish and Wildlife Service population counts and predicted population size, regulatory years 2017–2021.

Regulatory year	Bull-to-cow[a]	Calf-to-cow[a]	Percent calves	Percent cows	Percent bulls	Sample size	Model-predicted	INWR[b] counts
2017	–	–	–	–	–	–	2,455	–
2018	62	42	17	49	31	1,152	2,817	1,435
2019	–	–	–	–	–	–	3,234	2,091
2020	45	32	18	57	25	1,496	3,711	–
2021	–	–	–	–	–	–	4,254	1,055

Note: En dashes indicate no data.
[a] Ratios are 1:100.
[b] Izembek National Wildlife Refuge; Williams 2022.

Recommendations for Activity 1.1

Continue.

ACTIVITY 1.2. Conduct parturition surveys to estimate pregnancy rates and obtain a minimum count.

Data Needs

Pregnancy rate indicates reproductive potential as well as nutritional condition of cows. Department staff will continue to refine sample size, precision, and statistical power of pregnancy rate (e.g., binomial confidence interval). Typically, obtaining a large sample size for the SAP parturition survey has been relatively easy if enough radio collars are deployed.

Methods

ADF&G biologists attempted to fly parturition surveys annually in late May or early June to sample at least 25% of the herd. Fixed-wing aircraft pilots located caribou groups with radiotelemetry equipment, and biologists aboard a helicopter counted and determined composition and pregnancy status of each animal. Observers classified caribou on the calving grounds as parturient cow (with calf, hard antlers, or distended udder), nonparturient cow, yearling, or bull (Whitten 1995). Staff also observed radiocollared females to potentially document age-specific pregnancy rates.

Results and Discussion

Department staff flew a parturition survey in RY17, RY18, and RY20 (Fig. 2). The pregnancy rate was more than sufficient to allow continued population growth. This is a strong indication that the quality of nutrition available in their range is more than adequate.

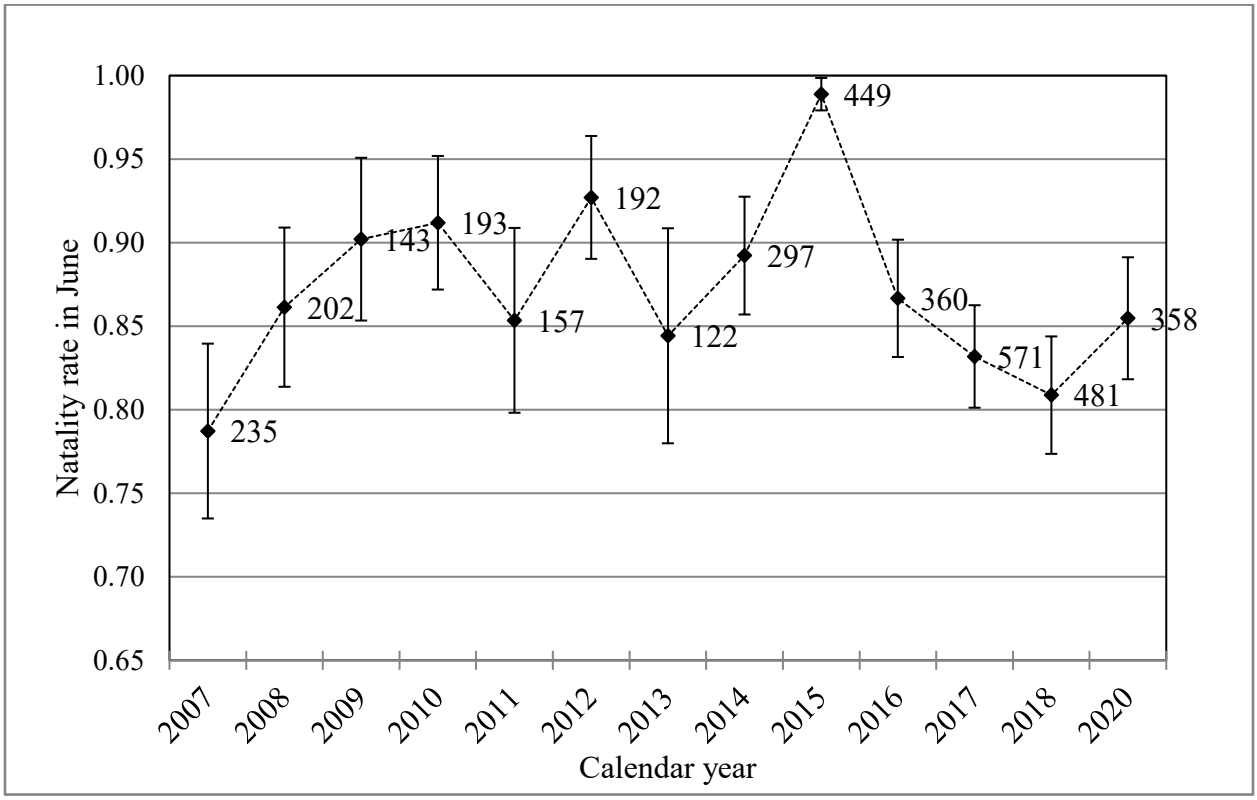

Figure 2. Southern Alaska Peninsula caribou herd natality rate, 95% binomial confidence intervals, and sample size, 2007–2021.

Recommendations for Activity 1.2

Continue.

ACTIVITY 1.3. Maintain a sample of radiocollared caribou and an adequate number of collared animals for surveys, which are critical for locating acceptable sample sizes and obtaining a wide distribution during surveys, particularly when SAP is at low density.

Data Needs

Population size, composition, seasonal movements, and survival rate are monitored periodically through radiotracking collared caribou. These data are used to inform a population model which estimates total population size and the amount of available harvestable caribou. Maintaining 20–30 collared animals for surveys aids in locating an adequate survey sample size and obtaining a widely distributed sample, particularly when SAP population is at low density.

Methods

No caribou were captured during RY17–RY21.

Results and Discussion

No data.

Recommendations for Activity 1.3

Continue.

ACTIVITY 1.4. As needed, repeat calf mortality study to determine factors limiting calf survival. Given the current status of SAP, including increasing size and adequate calf-to-cow ratio, which indicate a healthy population, a calf mortality study is not necessary in RY22–RY26.

Data Needs

If developing IM projects becomes necessary, an assessment of calf predators will be important to more aggressively manage the caribou population. Calf survival is an index of recruitment into the population and is used in a computer-based population model (Excel spreadsheet, SAP simulation 2023_Version 1) to predict size and trends in the population.

Methods

A calf mortality study was not initiated.

Results and Discussion

No data.

Recommendations for Activity 1.4

Discontinue.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor the caribou harvest through hunter harvest reports and contact with hunters and guides. This is a routine management activity for most caribou herds in Southcentral and Southwestern Alaska.

Data Needs

Harvest data are an important component of managing SAP for sustained yield and is an input for the population model.

Methods

Hunters are required to report whether they hunted and whether they were successful. Data is entered into ADF&G's Wildlife Information Network so annual harvest can be tracked.

Season and Bag Limit

Bag limits were liberalized during RY17–RY21 in an effort to increase harvest.

Hunt and effective dates	Open to	Season dates	Bag limit
RY17	Residents	1 Aug–30 Sep and 15 Nov–31 Mar	1 caribou
	Nonresidents	1 Aug–30 Sep	1 caribou
RY18–RY19	Residents	1 Aug–30 Sep and 15 Nov–31 Mar	2 caribou
	Nonresidents	1 Aug–30 Sep	2 bulls
RY20–Present	Residents	1 Aug–30 Sep and 15 Nov–31 Mar	3 caribou
	Nonresidents	1 Aug–30 Sep	2 bulls

Results and Discussion

Harvest by Hunters-Trappers

Harvest (Table 2) remains below the objective and the herd continues to grow. Bull harvest typically exceeds 90% even with an any-caribou bag limit for residents. Historically, the level of caribou harvest on the southern peninsula has been relatively low due to participation by only a few hunters and due to the remoteness of the area (Fig. 3). When the herd numbered approximately 10,000 caribou in the mid-1980s, the harvest approached 1,000 animals, but this was not an adequate level of harvest to control SAP population size at the time.

Hunter Residency and Success

The number of nonresident hunters has doubled since 2017 and has outnumbered successful resident hunters as of RY18 (Fig. 4). The bag limit increases implemented by the board have not increased the number of successful resident hunters; instead, they have caused an increase in nonresident hunters. Nonresident hunters may be able to play a key role in increasing harvest, however, they are limited due to availability of transporters and outfitters in this remote area, as the majority of the caribou are found away from any road system.

Table 2. Unit 9D Southern Alaska Peninsula caribou harvest, regulatory years 2001–2021.

Regulatory year	Reported harvest				Total reported	Federal hunt	Estimated other[a]	Estimated total
	Male	Percent	Female	Unknown				
2001	52	93	4	0	56	14	30	100
2002	62	91	6	3	71	0	30	101
2003	47	96	2	1	50	11	30	91
2004	68	87	10	1	79	6	30	115
2005	58	95	3	0	61	0	30	91
2006	56	97	2	0	58	0	30	88
2007	–	–	–	–	Closed	0	10	10
2008	–	–	–	–	Closed	0	10	10
2009	–	–	–	–	Closed	0	10	10
2010	–	–	–	–	Closed	0	10	10
2011	–	–	–	–	Closed	0	10	10
2012	–	–	–	–	Closed	9	10	19
2013	17	94	1	0	18	2	10	30
2014	11	92	1	0	12	1	10	23
2015	27	93	2	0	29	1	10	40
2016	38	88	5	0	43	10	10	63
2017	47	96	2	0	49	7	10	66
2018	49	94	3	0	52	2	10	64
2019	54	100	0	0	54	2	10	66
2020	61	95	4	0	65	3	10	77
2021	74	97	1	0	75	3	10	89

Note: En dashes indicate no data.

[a] Other sources of human-caused mortality include wounding loss, unreported harvest, and illegal harvest.

Harvest Chronology

The majority of harvest during RY17–RY21 occurred in September.

Transport Methods

The primary method of transportation used by successful hunters during RY17–RY21 was airplane.

Alaska Board of Game Actions and Emergency Orders

The board took action to increase the caribou bag limit for RY18 and increased it again for RY20.

Recommendations for Activity 2.1

Continue.

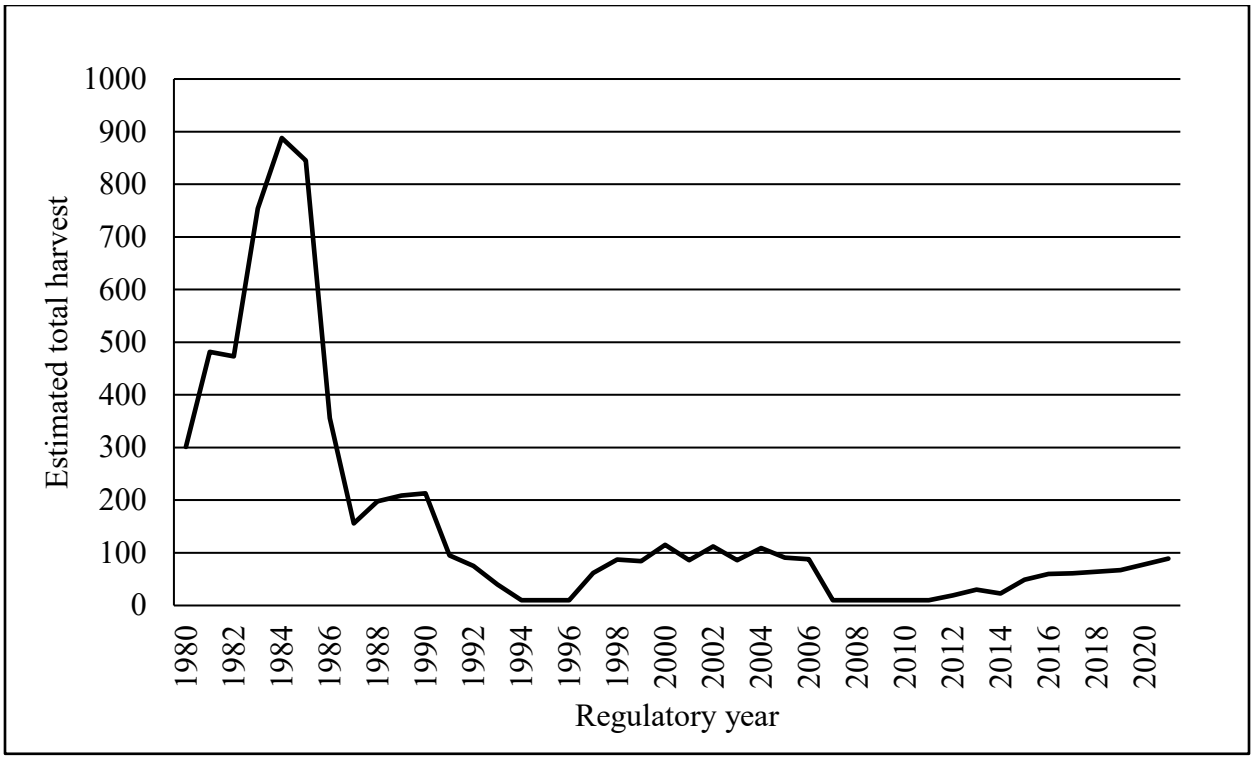

Figure 3. Historical harvest of caribou on the Southern Alaska Peninsula in Unit 9D, 1980–2021.

3. Habitat Assessment-Enhancement

ACTIVITY 3.1. Evaluate range condition through body condition assessment of captured females and pregnancy rates.

Data Needs

Assessment of body condition is an index to the nutritional status of the range.

Methods

Body condition is a subjective ranking from 1 (emaciated) through 5 (obese) based on palpation of soft tissue at withers, ribs, and hips (Gerhart et al. 1996) and warble load (low, medium, or high), and agreed upon by ADF&G staff working on each animal. Pregnancy rates are obtained during annual parturition surveys.

Results and Discussion

No caribou were collared during RY17–RY21. Pregnancy rates showed adequate range conditions to allow for an increasing population.

Recommendations for Activity 3.1

Continue.

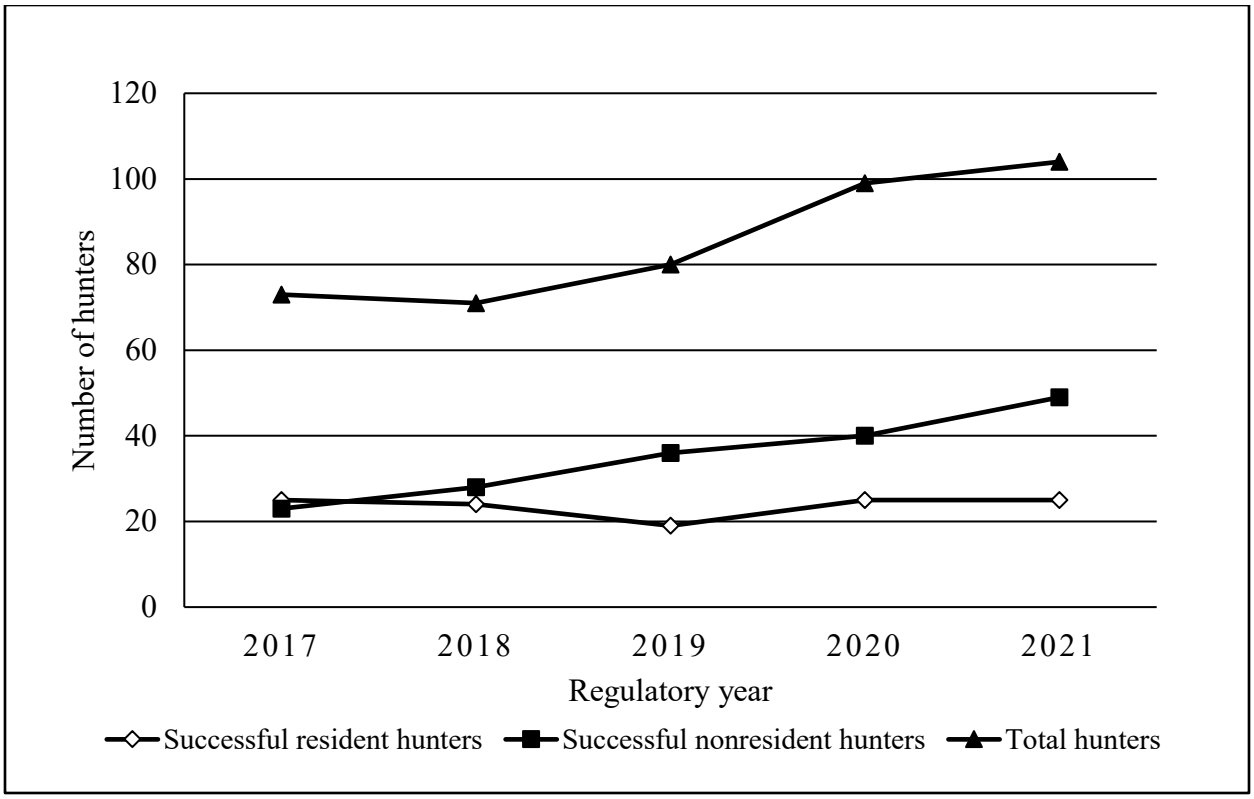

Figure 4. Total hunters and successful resident and nonresident hunters on the Southern Alaska Peninsula in Unit 9D, 2017–2021.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

There were no nonregulatory management problems or needs during RY17–RY21.

Data Recording and Archiving

No changes are needed locally.

Agreements

Southern Alaska Peninsula Caribou Operational Plan. This is a joint plan between the department and FWS, effective 1 March 2008.

Permitting

INWR Special Use Permit expired April 2018.

Conclusions and Management Recommendations

Population metrics of SAP indicated a continued upward population trend with a bull-to-cow ratio above the objective of 35:100. Model-predicted population abundance exceeded the higher level of the management objective of 4,000 caribou in RY21. Bag limits were liberalized during

RY17–RY21, but this had little effect on curbing population growth due to the difficult access and remoteness of this herd. ADF&G recommends a continuation of the liberalized bag limits and will work toward ways to increase harvest further to limit herd size to 4,000 caribou, such as changing the nonresident bag to any caribou instead of bull only and increasing the limit to 3 instead of 2. Another possible approach would be to expand SAP hunting season lengths to coincide with brown bear season dates.

II. Project Review and RY22–RY26 Plan

Review of Management Direction

MANAGEMENT DIRECTION

The existing management direction for SAP is appropriate and there are no recommended changes.

GOALS

Goals identified in the Alaska Wildlife Management Plans: Southwestern Alaska (ADF&G 1976) can be abbreviated to provide the following opportunities:

- The greatest sustained opportunity to participate in hunting caribou.
- An opportunity to hunt caribou under aesthetically pleasing conditions.
- An opportunity to take large-antlered caribou.

The existing goals are appropriate and there are no recommended changes. Providing a population level great enough for sustainable harvest also provides other uses such as viewing and photography. These goals outline the role of DWC when faced with land use practices such as mining or reindeer herding which may put a caribou herd at risk. ADF&G is currently working to manage the population size of SAP to prevent a population crash.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

The amount necessary for subsistence for SAP is 100–150 caribou. This is a reasonable harvest quota given the low human population in Unit 9D.

Intensive Management

The IM population objective established by the board is 1,500–4,000 caribou and the IM harvest objective is 150–200 caribou annually. These are appropriate management levels for SAP.

MANAGEMENT OBJECTIVES

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

2. Maintain a minimum fall bull-to-cow ratio of 35:100 caribou.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Conduct fall composition surveys to estimate sex and age ratios, trend, productivity, and mortality.

Data Needs

Fall composition survey data is used to monitor bull-to-cow ratios and total overall numbers to determine harvest quota, provide maximum hunting opportunity, and provide input to the population model. A calf-to-cow ratio is also obtained to monitor productivity and survival and is an important input into the population model. A decline in calf-to-cow ratio to less than 10:100, coincident with a similar decline in bulls, has triggered a calf mortality study in the past on the SAP population (see Activity 1.4 above); however, this study is not anticipated in the next 5 years. In the absence of postcalving aggregations at low population density, composition surveys have provided a means to monitor population trend.

Methods

ADF&G staff attempt to conduct aerial surveys using fixed-wing aircraft to assess population composition annually in October. Pilots locate caribou groups with radiotelemetry equipment and biologists aboard an R-44 helicopter determine the composition of each group (cow, calf, yearling, and bull: small, medium, or large). All caribou encountered during the survey are included in the sample (except for those collared caribou detected by radio signal without visual confirmation while in the clouds), and therefore sample sizes can be considered an index to population trends. Survey comprehensiveness is assessed using the proportion of radiocollared caribou encountered relative to the total number of radiocollared caribou. Composition data will be entered into a deterministic computer model to predict herd dynamics and size.

ACTIVITY 1.2. Conduct parturition surveys to estimate pregnancy rates and obtain a minimum count.

Data Needs

Pregnancy rates indicate reproductive potential as well as the nutritional condition of cows.

Methods

Parturition surveys are conducted using fixed-wing aircraft to locate animals and an R-44 helicopter with ADF&G observers to determine the composition and pregnancy status of each animal. Caribou are classified as parturient cow (with calf at heel, hard antlers, or distended udder), nonparturient cow, yearling, or bull.

ACTIVITY 1.3. Maintain an adequate number of widely distributed collared caribou for locating animals during surveys.

Data Needs

This is a routine management activity to aid in locating animals during parturition and composition surveys to obtain adequate sample sizes. Maintaining 20–30 marked cows in the population has been adequate for management activities.

Methods

All caribou will be immobilized from an R-44 helicopter with a fixed-wing spotter plane using standard techniques approved by an Animal Care and Use Committee and fitted with a radio collar.

2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Monitor caribou harvest through hunter harvest reports and contact with hunters and guides.

Data Needs

Harvest data is an important component of managing SAP for sustained yield to determine harvest percentages and more accurate population modeling.

Methods

Harvest reporting will be required for all hunts.

3. Habitat Assessment-Enhancement

ACTIVITY 3.1. Evaluate range condition through body condition assessment of captured females and pregnancy rates.

Data Needs

Assessment of caribou body condition is an index to the nutritional status of the range. Pregnancy rates, which are obtained through parturition surveys, are also an indicator of habitat conditions.

Methods

Assessment of caribou body condition is performed during captures and collaring. Body condition is a subjective ranking from 1 (emaciated) through 5 (obese) based on palpation of soft tissue at withers, ribs, and hips, and warble load, and agreed upon by ADF&G staff working on each animal. Pregnancy rates are obtained through annual parturition surveys.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Obtaining the required amount of harvest to keep SAP within population objectives will be an ongoing challenge. The majority of hunters want to harvest bulls; however, cow harvest will be

required to maintain the population within objectives and prevent overpopulation. Access to the southern peninsula is difficult due to long flying distances from populated areas and difficult weather conditions which can prohibit hunter transportation.

Data Recording and Archiving

Data will be saved digitally to make data sharing and analysis more efficient. Efforts will be made toward digitizing archived records to make them more accessible.

Agreements

The Southern Alaska Peninsula Caribou Operational Plan, a joint plan of the department and FWS, was effective as of 1 March 2008 (Butler 2008).

Permitting

Special Use Permits with INWR are anticipated for capture activities on federally designated wilderness areas.

References Cited

Alaska Department of Fish and Game. 1976. Alaska wildlife management plans: A public proposal for the management of Alaska's wildlife: Southwestern Alaska. Draft proposal subsequently approved by the Alaska Board of Game. Division of Game, Federal Aid in Wildlife Restoration Project W-17-R, Juneau.

Alaska Department of Fish and Game. 2002. Strategic Plan. Division of Wildlife Conservation, Juneau.

Butler, L. 2005. Southern Alaska Peninsula Unit 9D caribou management report. Pages 49–56 [*In*] C. Brown, editor. Caribou management report of survey and inventory activities 1 July 2002–30 June 2004. Alaska Department of Fish and Game. Juneau, Alaska.

Butler, L. 2007. Southern Alaska Peninsula Unit 9D caribou management report. Pages 43–50 *in* P. Harper, editor. Caribou management report of survey and inventory activities 1 July 2004–30 June 2006. Alaska Department of Fish and Game. Juneau, Alaska.

Butler, L. 2008. Southern Alaska Peninsula caribou herd operational plan draft: A joint plan of the Alaska Department of Fish and Game and the United States Fish and Wildlife Service. Alaska Department of Fish and Game, King Salmon, Alaska.

Butler, L. 2009. Southern Alaska Peninsula Unit 9D caribou management report. Pages 43–51 [*In*] P. Harper, editor. Caribou management report of survey and inventory activities 1 July 2006–30 June 2008. Alaska Department of Fish and Game. Juneau, Alaska.

Gerhart, K. L., R. G. White, R. D. Cameron, and D. E. Russell. 1996. Estimating fat content of caribou from body condition scores. Journal of Wildlife Management 60(4):713–718.

Mager, K. H. 2012. Population structure and hybridization of Alaskan caribou and reindeer: Integrating genetics and local knowledge. Doctoral dissertation, University of Alaska Fairbanks.

Nowacki, G. J., P. Spencer, T. Brock, M. Fleming, and T. Jorgenson. 2001. Unified ecoregions of Alaska and neighboring territory (map). U.S. Geological Survey. https://doi.org/10.3133/ofr2002297

Pitcher, K., C. Dau, D. Johnson, D. Sellers, and R. West. 1990. Causes of low calf recruitment in the Southern Alaska Peninsula caribou herd and recent herd history. Cooperative project between Alaska Department of Fish and Game, Division of Wildlife Conservation and U.S. Fish and Wildlife Service, Izembeck National Wildlife Refuge. Research Progress Report, Juneau.

Post, E., and D. R. Klein. 1999. Caribou calf production and seasonal range quality during a population decline. Journal of Wildlife Management 63(1):335–345. doi:10.2307/3802517

Sellers, R. A. 1995. Unit 9D caribou management report. Pages 47–55 [*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 Project 3.0, Juneau.

Sellers, R. A., P. Valkenburg, R. C. Squibb, M. Roy, and B. Dale. 1999. Survival, natality, and calf weights of caribou on the Alaska Peninsula, 1998–1999. U.S. Fish and Wildlife Service and Alaska Department of Fish and Game, Division of Wildlife Conservation, Cooperative Agreement 99-017. King Salmon.

Skoog, R. O. 1968. Ecology of the caribou (*Rangifer tarandus granti*) in Alaska. Doctoral dissertation, University of California, Berkeley.

Whitten, K. R. 1995. Antler loss and udder distention in relation to parturition in caribou. Journal of Wildlife Management 59(2):273–277.

Williams, A. R. 2022. Winter 2022 caribou survey: Lower Alaska Peninsula and Unimak Island. Izembek National Wildlife Refuge.

Zittlau, K., R. Farnell, P. Valkenburg, J. Nagy, A. Gunn, and C. Strobeck. 2009. Part 3. Genetic diversity among woodland and Grant's caribou herds. Pages 147–164 [*In*] K. McFarlane, A. Gunn, and C. Strobeck, editors. Proceedings from the caribou genetics and relationships workshop, March 8–9, 2003. Edmonton, Alberta. Department of Natural Resources and Environment, Government of the Northwest Territories, Manuscript Report No. 183.


ALASKA
DEPARTMENT OF FISH AND GAME