

# Mulchatna caribou intensive management FAQs

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## **What is intensive management?**

Standard wildlife management entails examining populations of various wildlife species and determining the appropriate ranges that those populations should be maintained in. Managers adjust population sizes by suggesting changes to hunting seasons (the opening and closing of hunts) and bag limits to maintain populations for sustainable harvest. Certain game species that have been identified for higher levels of human harvest may be candidates for intensive management. Intensive management is Alaska law that may be implemented when specific populations cannot be maintained by standard management practices alone. Intensive management activities can include habitat enhancement, restricting hunting seasons and bag limits, and reducing predator populations.

## **What is the role of the Board of Game in intensive management?**

The Board of Game (the board) is the trustee of the public's wildlife resources whose main role is to conserve and develop Alaska's wildlife resources. This includes establishing open and closed seasons, areas for taking game, setting bag limits, and regulating methods and means. The board is also involved with setting policy and direction for the management of the state's wildlife resources. The board is charged with making allocative decisions, and the Department of Fish and Game is responsible for management based on those decisions as the trust manager.

<https://www.adfg.alaska.gov/index.cfm?adfg=gameboard.main>

## **Why is Intensive management being done with the Mulchatna caribou herd?**

The Mulchatna caribou herd (MCH) reached 200,000 animals at its peak in 1997. At this time, it provided as many as 4,770 caribou per year for the subsistence needs of more than 48 local communities, in addition to hunting opportunities for all Alaskans and nonresidents.

In the late 1990s and early 2000s, the herd began to decline, and by 2009 was down to about 30,000 animals (population objective 30,000–80,000). By 2019 it dropped to about 13,000 animals (about 94% decline from peak). The population remains at this lower level today.

The public requested that the board and Division of Wildlife Conservation (DWC) work to rebuild the herd and restore this food source. Some of the support for the program is through resolutions from Orutsararmiut Native Council, Alaska Federation of Natives, Bristol Bay Federal Regional Advisory Council, the Nushagak Advisory Committee, and Nushagak River communities. Intensive management is a tool the department can use immediately to try to support herd growth and recovery. Given the Mulchatna caribou's range and population history, managers aim to keep the herd between 30,000 and 80,000 animals.

## **Where is intensive management happening within the Mulchatna caribou range in 2024?**

DWC employees located and removed predators (bears and wolves) within an approximately 530 square mile area defined as the 2024 calving grounds of the western subgroup, which has shifted over recent years. Predation reduction activities were conducted on state land only in Units 17B, 18, and 19B. No activities were conducted in Wood-Tikchik State Park. Permission to conduct reduction

activities on federally-managed National Wildlife Refuges was requested by DWC and local residents but was not granted.

For map and full details, see: *Annual Report to the Alaska Board of Game on Intensive Management for Mulchatna Caribou with Wolf Predation Control in Game Management Units 9B, 17B&C, 18 and 19A&B Prepared by the Division of Wildlife Conservation, February 2024.*

### **Why use intensive management?**

In January 2022 the board approved and directed the department to implement a revised Intensive Management Program to increase the abundance of the Mulchatna caribou herd, which has been closed to hunting since fall 2021. The board and DWC were concerned that this recent decline may continue or persist for a long period at the present low level.

### **Why kill bears and wolves?**

Bears and wolves have been identified as significant calf predators; low numbers of calves surviving to breeding age is likely a factor limiting the ability of the herd to increase. Research presented to the Board of Game in January 2022 indicated that various predators, especially brown bears, were responsible for nearly 90% of newborn calf deaths during the first 2 weeks of life between 2011 and 2021.

Wolf removal by the public, using aerial methods authorized by the Board of Game, has been active during winter since 2012. The wolf removal area was originally in Units 17B and 17C. Because the location of calving grounds has shifted over time, the board expanded the wolf control area in 2017 to include portions of Units 9B and 19B (eastern calving area).

Public removal of wolves has been mostly ineffective at achieving reduction objectives in the MCH winter range due to low participation and caribou continued to decline from about 27,000 in 2016 to about 13,000 by 2019. The board expanded the control area in 2022 to include a portion of Unit 18 (western calving area) and authorized DWC staff to remove predators from the calving grounds.

### **Isn't habitat the real problem?**

The high numbers of caribou in the 1990s likely decreased range quality and triggered the initial decline of the herd. After more than a decade and a half of the caribou population being under the lower end of the management objective over the herd's very large range, the habitat should have recovered adequately to allow the herd to grow again. If habitat was the constraining factor there is currently no mechanism to enhance habitat for caribou like there is for moose in certain situations (i.e., prescribed burn, browse crushing).

### **Isn't malnutrition limiting the herd's growth?**

When caribou are nutritionally limited, calf productivity is lower (first reproduction happens at an older age and the overall reproduction is at a reduced rate) and mortality is higher (smaller or weaker calves are more susceptible to predation or starvation in severe weather). Mulchatna caribou reproduction is normal, with evidence that young females (ages 2- and 3-years-old) have been in relatively good nutritional condition since about 2009, when the herd had declined to approximately 30,000 animals.

Pregnancy rates in the Mulchatna caribou herd were high—97% in the eastern group and 96% in the western group. Of the caribou that would be 3-years old in May—100% were pregnant, which could indicate good nutrition. Note that body fat and body mass do not directly regulate fertility. Rather, body fat contributes to an animal’s total energy balance, which is a better predictor of fertility according to research.

The department is conducting research investigating the relationship between body fat and pregnancy in Mulchatna caribou. Currently there is no quantitative information to the exact cause of high pregnancy rates for these animals.

### **Isn't disease the real problem?**

Brucellosis has recently been documented in the Mulchatna caribou herd (MCH). Brucellosis can lower caribou population size by lowering calf production and depress the recovery of a herd, especially in the short-term (over a few years). The biggest impacts from disease are typically when the disease first spreads in a herd, and the introduction of brucellosis into the herd may have been a factor in the herd’s decline.

In herds where brucellosis has been present for a long time, disease outbreaks are typically periodic and otherwise the disease is present at an enzootic level (low levels of clinical disease). The disease was not observed during the population peak or initial decline of the herd but has been present within MCH for long enough that it is not likely the factor limiting population growth presently. Research is underway assessing how brucellosis may impact calf production in relation to high pregnancy rates.

No brucellosis was detected in calves sampled this year and we did not detect an effect of *Brucella suis* seropositivity on pregnancy. The lack of effect may have occurred for a number of reasons. First, reproductive consequences of brucellosis may occur primarily in the first pregnancy following infection, so if this was a subsequent pregnancy, then it may not have been affected. Additionally, timing of infection and the number of infected organisms in the inoculum are important; females receiving smaller numbers of infective organisms earlier in gestation produced normal calves whereas females infected with larger numbers or organisms or later in gestation sometimes aborted.

Evidence from October 2023 caribou captures also suggests a relatively limited effect of *Brucella suis* on reproduction currently within the Mulchatna Caribou Herd as a large proportion of seropositive females were lactating and similar numbers of seronegative animals were lactating and non-lactating (K. Denryter, J. Crouse, and J. Landsiedel, unpublished data).

In elk, researchers determined a relatively low probability of abortion from *Brucella abortus*, of approximately 6% annually. Hence, infection with *Brucella* may not necessarily result in abortion or calf death, which may limit negative population-level impacts of *Brucella* on the Mulchatna Caribou Herd. Future work modeling *Brucella* trends with pregnancy should help elucidate the potential for population-level impacts.

**Will increasing caribou densities slow the recovery of the caribou's range?**

It is possible but unlikely because densities of caribou are currently so low that even a small uptick in the numbers of caribou is unlikely to impact range quality or recovery from the last peak in abundance. Caribou have been at a relatively low abundance (85–95% below the mid-1990s peak) for about 15 years. Compared to other fluctuations in caribou populations, it is unusual that the herd has not started to slowly increase by this period after the peak.

**Will this hurt populations of bears and wolves in Alaska?**

Bear and wolf populations are healthy in western Alaska. The removal of wolves and bears in the western spring calving control area is occurring in a relatively small area surrounded by intact habitat in state and federal lands where control activities are not occurring. This removal area is more than 140 linear miles from popular bear viewing areas and there is no evidence that bears at these sites are from the interior portions of the region. Bears and wolves can move from National Wildlife Refuge lands, which serve as refugia from control activities. In this remote area bears are not widely hunted and reported harvest for all predators is low in and around the control area.

Based on observations from other predator control programs in remote areas of Alaska, predator numbers are expected rebound in a few years after control is suspended. Minimum count assessments in and adjacent to the removal area in fall 2023 documented a considerable amount of bear activity with observations of at least 20 brown bears.

**Does predator control work?**

Similar efforts have been successful with the Southern Alaska Peninsula (SAP) caribou herd. Following a peak of more than 10,000 caribou in 1983, the SAP began a steep decline and by 1993 the herd was below 2,500. In 2007, surveys indicated 99% of SAP calves died before reaching one month of age, which biologists attributed primarily to predation. From 2002 to 2007, estimates of calf recruitment were chronically low, and population size declined rapidly bottoming out at approximately 657–750 caribou in 2007. In 2008, the removal of 28 wolves from two packs during calving in the spring immediately improved calf survival. Calf survival increased from less than 1% in 2007 to 64% in 2008. Ten more wolves were removed over the next two years, after which the program was deactivated. The size of the Southern Alaska Peninsula herd, the calf-to-cow ratio, and the bull-to-cow ratio increased rapidly after predator control and continued to increase substantially over the following years. Population estimates in 2016 were above 2,000 and growing.

Population metrics of the SAP indicated continued upward trend and high bull-to-cow ratio during the reporting period. Calf-to-cow ratio also remained high. With the continued upward trend exceeding 35 bulls:100 cows in the population, we opened a Tier II drawing hunt for residents in RY13, which we subsequently replaced with a harvest ticket hunt in RY16. Model-predicted abundance was expected to exceed the lower management objective of 3,000 caribou by regulatory year 2019 (RY19), which it did and is now estimated at 4,300. The state harvest ticket now has a bag limit of 3 caribou for residents.

**How will you know this will help?**

The Division of Wildlife Conservation assessed summer calf survival after fall composition surveys in 2023. The calf-to-cow ratio increased in the western subgroup calving area as intended. The observed

fall 2023 calf-to-cow ratio of 44:100 is a significant increase in the western subgroup and had not been documented since at least 1999; the first time it has been above of objective since 2012 (The long-term average calf-to-cow ratio since 1999 is 23:100.). In contrast, the eastern calving area where no control activities were conducted showed 32:100. Biologists determine if the associated eastern and western groups show signs of increased abundance during the post-calving aggregations, when animals group up and provide an opportunity to conduct surveys. When caribou aggregate on their summer range and weather allows, a photocensus will be conducted to determine overall abundance. Fall herd composition surveys will be completed at a later date. DWC will continue to monitor other factors including disease and nutrition.

From “Annual Report on Intensive Management for Caribou with Predation Control in Units 9B, 17B&C, 18, and 19A&B Alaska Department of Fish & Game, Division of Wildlife Conservation,” February 2024.

Criteria for evaluating progress toward IM objectives:

- Fall calf-to-cow ratios
- Fall bull-to-cow ratio
- Summer calf-to-adult ratios
- Late winter calf-to-adult ratios
- Overwinter survival
- Caribou abundance

Criteria for success with this program:

- Fall bull-to-cow ratio can be maintained at a minimum of 35 bulls:100 cows.
- Fall calf-to-cow ratio can be sustained above 30 calves:100 cows.
- The population can grow at a sustained rate of 5% annually.
- Caribou harvest objectives are met

### **What happened to the meat and hides?**

All bears and wolves located in this search were killed as quickly and humanely as possible. Hides and skulls were salvaged when it was safe to do so. Meat from black bears and some brown bears was transported to local villages and provided for subsistence uses in 2023, but due to lack of desire for brown bear meat none was provided in the second year of the program (2024). Skulls are being used for educational purposes and hides are to be sent to the Horn & Hide Auction.

### **Other questions....**

What’s being done about illegal harvest? Isn’t that a big problem?

Unreported subsistence harvest has been documented across the range of Mulchatna and currently a multi-agency effort is underway to increase education and awareness about the hunt closure and monitor for out-of-season harvests. Out-of-season harvest appears to occur at a similar rate as other remote areas of the state and has not had a profound impact on the population.

Is the goal of maintaining a population of 30,000–80,000 caribou achievable?

Although the Mulchatna caribou herd is below the lower end of the population objective it is reasonable to believe that across the entire range a population of 30,000 plus is achievable.

