

Sustained Yield of Predators Under IM: Overview for the BOG, July 2025

Division of Wildlife Conservation, Alaska Department of Fish & Game

This document focuses on the Alaska Department of Fish and Game’s (ADF&G, department) consideration of the sustained yield principle in making this proposal. That is, the requirements for the department and the Alaska Board of Game (BOG, board) to consider all the important, relevant, and material factors relating to the sustainability of a replenishable, public, wildlife resource prior to adoption of a regulatory proposal.

Background

Wildlife management in Alaska is based on the North American Model of Wildlife Conservation (the Model). Alaska’s constitution, statutes, and regulations have been and continue to be developed and implemented consistent with the principles of the Model. This proposed intensive management (IM) program is designed to grow the Mulchatna caribou herd by reducing predation from wolves, black bears, and brown bears through the lethal removal of these predators. We must consider all the important, relevant, and material factors relating to the sustained yield of the populations impacted by the Mulchatna intensive management program—caribou, wolves, brown bears, and black bears. This board and the department are responsible for ensuring that the proposed IM program meets the sustained yield clause of the Alaska Constitution.

When the Alaska Supreme Court has reviewed cases pertaining to the sustained yield clause of the Alaska Constitution (e.g., *Native Vill. of Elim v. State*, 990 P.2d 1, 7 [Alaska 1999] and *West v. State*, 248 P.3d 689 [Alaska 2010]) they referenced

1) the text of sustained yield clause in the Alaska Constitution

Fish, forests, wildlife, grasslands, and all other replenishable resources belonging to the State shall be utilized, developed, and maintained on the sustained yield principle, subject to preferences among beneficial uses.

2) the definition of the “sustained yield principle” provided to the constitutional delegates by the Resources Committee of the Constitutional Convention:

As to forests, timber volume, rate of growth, and acreage of timber type can be determined with some degree of accuracy. For fish, for wildlife, and for some other replenishable resources such as huckleberries, as an example, it is difficult or even impossible to measure accurately the factors by which a calculated sustained yield could be determined. Yet the term “sustained yield principle” is used in connection with management of such resources. When so used it denotes conscious

application insofar as practicable of principles of management intended to sustain the yield of the resource being managed. That broad meaning is the meaning of the term as used in the article.

3) the section from the *Report to the People of Alaska from the Alaska Constitutional Convention* on administering the state's natural resources

The article's primary purpose is to balance maximum use of natural resources with their continued availability to future generations. In keeping with that purpose, all replenishable resources are to be administered, insofar as practicable, on the sustained yield principle. This includes fish, forests, wildlife and grasslands among others.

These founding documents provide the framework for considering issues under the sustained yield clause. The Alaska Supreme Court has also clarified aspects of the sustained yield clause that should guide how the board and the department review this and other IM programs, especially with respect to predator populations, specifically

The sustained yield clause applies to both predators and prey populations. In deciding *West vs. the State of Alaska* (248 P.3d 689 (Alaska 2010)) the court stated

We find nothing in the plain language of the sustained yield clause suggesting that a distinction should be drawn between predator and prey populations for purposes of applying the sustained yield principle, and there is no such distinction in the descriptions of "sustained yield" supplied by the delegates who drafted the constitution or to the voters who ratified it. We have acknowledged that "the framers of Alaska's constitution intended the sustained yield clause to play a meaningful role in resource management," and we hold today that the sustained yield clause in Alaska's constitution applies to both predator and prey populations, including populations of wolves and bears. (internal references omitted)

The sustained yield clause permits the state to establish preferences for prey over predators. In deciding *West vs. the State of Alaska* (248 P.3d 689 (Alaska 2010)) the court stated

The qualifier that makes sustained yield "subject to preferences among beneficial uses" suggests that the legislature and the Board have some discretion to establish management priorities for Alaska's wildlife. ... Based upon the text and constitutional history of the sustained yield clause, the State argues that "it allows for some uses, and therefore some resources, to be preferred over others." And Defenders recognize that "[w]hile [the sustained yield clause] requires that all wildlife, including predators, be managed for sustained yield, that does not mean

the sustained yield principle precludes ‘predator control’ in appropriate circumstances.” We agree with both these statements and affirm the superior court’s ruling “that the management of wildlife resources may constitutionally include a selection between predator and prey populations.”

The sustained yield clause is a broad principle of management that does not require the board to determine a numerical yield. (*Native Village of Elim vs the State of Alaska* 990 P.2d 1, 7 [Alaska 1999])

In deciding the *Native Village of Elim vs the State of Alaska*, a case focused on a fishery, the court stated

We agree with the Board that the sustained yield clause does not require it to determine a specific level of yield for each fish stock. The plain language of the provision requires resource managers to apply sustained yield principles; it does not mandate the use of a predetermined formula, quantitative or qualitative. As a practical matter, the record suggests that to require the Board to devise such a formula would consume an amount of time, money, and energy wholly disproportionate to potential benefits.

and

[T]he phrase “insofar as practicable” cannot fairly be construed to support the kind of mechanical application of the sustained yield principle that Elim proposes. To the contrary, the primary emphasis of the framers’ discussions and the glossary’s definition of sustained yield is on the flexibility of the sustained yield requirement and its status as a guiding principle rather than a concrete, predefined process.

What this means is that the state, specifically the board and department, are required to always manage for sustained yield of both predators and prey, but the board has the authority to establish a preference for prey populations over predator populations. Additionally, sustained yield should be implemented as a broad principle of management that does not require a formula with factors measured precisely.

The state has a track record of success in managing the harvest of game populations to continue the sustained yield of those populations. No population of bears or wolves in Alaska has been managed in a way that threatened the extirpation of the species. On the contrary, even in Game Management Units (GMU, units) where predator control occurs, open seasons for harvest of black bears, brown bears, and wolves remain in all units where those species naturally occur.

In addition, the board and department have legislative direction in the form of IM law (AS 16.05.255 (e–g) and (K)) that establishes a preference for identified prey populations to produce high levels of human harvest. The Mulchatna caribou herd is a population that has been designated by the board for this preference (5 AAC 92.108 Identified big game prey populations and objectives). The department is obligated to prioritize the yield of Mulchatna caribou over the yield of black bears, brown bears, and wolves within the range of the Mulchatna caribou when harvest of caribou is constrained.

The Department’s Analysis and Approach

Area Wildlife Biologist John Landsiedel and Research Coordinator Kristin Denryter, PhD, have previously communicated details regarding how the department has taken a “hard look” at populations of caribou, black bear, brown bear, and wolves in this area. Not only have we (the department) taken a “hard look,” we have considered all salient issues in managing these populations for sustained yield under the proposed IM Program.

As described above, sustained yield is the constitutional mandate given to this board and the department in Article VIII, Section 4. In the context of IM, sustained yield for predators means the ability to achieve and maintain a high level of human harvest in the long-term. This combines the concept of sustained yield into the future, modified over the near-term by the preferences among beneficial uses (i.e., prey). In practical terms, during an IM program predator populations can be reduced (i.e., preference for prey in the short-term), so long as the predator populations can recover and provide a harvestable surplus in the future. Note that sustained yield is a higher bar than “sustainability”. It is not just adequate for predators to remain on the landscape; rather, the population needs to be at a level where harvest can be continued.

Addressing Biological and Scientific Criticisms

Those who are opposed to the MCH predator control program, including some former department biologists, have provided multiple criticisms. Some of these criticisms are semantic in nature, while others come from a misunderstanding of what is required under the law and constitution. In addition, some biologists and organizations try to use the attainment of scientific information or standards to establish difficult hurdles to implement management actions. For example, the critique that “correlation is not causation,” while accurate in general, is largely a semantic argument to distract from the weight of evidence. Given the treatment design, we cannot conclusively state that removing bears resulted in increased calf survival. However, we can state that there is overwhelming evidence that supports the conclusion that is exactly what is happening. Another example is the assertion that there must be clear information on predator abundance and landscape

carrying capacity prior to proceeding with predator removals. This demonstrates a misunderstanding of what is required to meet Alaska's sustained yield obligation and is an effort to set the attainment of a high scientific standard to intentionally avoid the action from being implemented.

The difference between decision science (using scientific information to inform decisions) and the scientific method is the origin of many criticisms of this program. The National Resource Council's recommendation (1997) for the application of IM is to design the programs as an experiment (i.e. with controls and replication). That recommendation focuses on improving knowledge around predator control, but does not reflect the practical realities of active, adaptive wildlife management under the sustained yield principle. The 1997 report does not address evidence or standards of sustained yield for predators and clarifies that predator control is a policy decision. We acknowledge that the scientific method has a very high bar to conclusively establish cause and effect, but in light of the information presented today, including Dr. Denryter's research, we are very confident that predation is the main factor limiting this herd and that targeted predator control activities are expected to improve calf survival and ultimately human harvest as required under the IM law.

Additionally, we would like to respond to several assertions made in opposition to this program for this board's consideration. These assertions are biologically unsupported hypotheticals.

- Assertion #1. **Bear viewing could be impacted by this proposed reduction on the calving grounds.** In this area, female brown bears have an average home range size of 150 mi². This translates to a linear distance of approximately 20 miles across with an irregular shaped home range. Data have not been collected for male brown bears in this region, but in other areas the average male home range is usually 50% larger than the average female home range. The calving grounds for the western Mulchatna is more than 170 miles straight distance from Brooks Falls (more than 8, bear home-range diameters) which is the closest popular bear viewing area. The Unit 17 boundary is approximately 70 miles from Brooks Falls. The odds of removing a bear that frequents Brooks Falls are extremely low. Although it is possible for a bear to travel great distances, moves of over 70 linear miles are rare, especially on a regular basis. Katmai has a very high density of brown bears because of the abundant food in that location. Movements away from that reliable and consistent food source would be even more unusual.

- **Assertion #2. The Mulchatna caribou herd crashed due to overharvest and predators did not cause the decline, so it does not make sense to remove them.** The Mulchatna caribou population was relatively low, at about 12,000 animals in the 1960s. It then climbed to almost 200,000 animals in the late 1990s before experiencing a precipitous decline throughout the 2000s. This decline is due to the population exceeding the capacity of the environment to sustain them at that level. The state increased harvest opportunity when the herd was at its peak and the population was declining because it was clear there were too many caribou on the landscape. This is the appropriate response for a population that has exceeded carrying capacity. Hunting did not drive the population decline; but rather, it took advantage of animals that would have likely died anyway while simultaneously reducing the impacts of competition. The goal of managing for high levels of sustained yield requires the state to act when the population is at the low point in the cycle. Especially when harvest is closed. The claim that the cycle is natural and the population is within historic fluctuation completely ignores the goal of population management. The current population goal is 30,000–80,000 caribou which is 15–40% of the previous peak. This is a moderate goal, accounting for historic fluctuations, and should be sustainable. This goal will be adjusted in response to the nutritional condition of caribou when appropriate, which will provide important harvest opportunities. Additionally, while predation did not drive the decline in this caribou herd, as Dr. Denryter described in her presentation, predation is currently the most likely limiting factor that is preventing herd growth. In addition, predators are likely keeping the caribou herd in a low-density, dynamic equilibrium, as the herd is not large enough to swamp predators during the vulnerable calving period.
- **Assertion #3. The unlimited killing of bears poses a threat to the sustainability of the bear population.** This statement is inaccurate and misleading. There are many ways in which populations are managed for sustained yield. The IM program will focus on a small and limited area of the impacted bear population over a short duration each year, and it will only occur for a limited number of years. It is therefore not an unlimited killing of bears. The sustained yield principle allows predator populations to be reduced over the short-term (i.e., preference for prey over predators), so long as the predator populations can recover and continue to provide a sustained yield in the future. The limitation in space and time is a biologically

significant protection to ensure the long-term sustained yield of brown and black bears are conserved, especially given the wide distribution of the species and the GMU scale at which the State manages bear populations. The relatively small area and limited duration of removals conserves most of the bears within the affected GMUs. Multiple lines of evidence indicate bears will immigrate into and repopulate the removal area between removals each year, and at the completion of the IM program, which Area Wildlife Biologist John Landsiedel demonstrated in his presentation. The immigration and repopulation of bears also occurred in two prior bear removals that occurred in GMU 19, also within small areas, and the department continues to find numerous bears on the calving grounds post removal and in subsequent removal years. In addition, as Mr. Landsiedel provided in his presentation, the bear removals represent a small proportion of the bears within each GMU which is unlikely to reduce the overall bear populations significantly, if at all.

- **Assertion #4. An estimate of bear density prior to removal is required to meet sustainability for conducting predator removal.** Limitations on removals (i.e., small area, limited duration) ensure the sustained yield clause is being met without having a precise density estimate. Further, the sustained yield clause of the Alaska Constitution is to be implemented as a broad principle that does not require the department to precisely measure factors, such as density, necessary to calculate sustained yield. To conduct a rigorous research project that specifically identifies the degree of predator reduction achieved and the time that it takes for the predator population to return to pretreatment levels would require a preremoval density. However, we are not proposing to conduct a scientific experiment using the scientific method; rather, we are proposing a management action informed by science. Game populations throughout Alaska and North America have been managed successfully for sustained yield for nearly a century without current density estimates and in some cases without any estimates at all. Density, demography, and distribution can be useful in fine-tuning harvest strategies, but are not a requirement to manage for sustained yield. As pointed out by Mr. Landsiedel, the bear removals are sustainable because they only occur within a relatively small area over a limited time with a robust “sanctuary” population outside the removal area. Yet the department has also gone much further than that to demonstrate the program meets the requirement to manage for sustained yield. We have used density estimates

for brown bears in these units. In addition, the removal program provides minimum density estimates on the calving grounds each year. These estimates are used to determine that the removals are unlikely to decrease the population of brown bears at the scale at which they are managed. Sustainable harvest rates of bears in productive habitats have been documented at greater than 10%, and there have only been moderate reductions in populations that have been harvested at levels of 15% when sows with cubs are protected as they are outside of the removal area. As Mr. Landsiedel pointed out, the total removal rate within the region is lower than these rates.

We can assure the board that the department is committed to the conscious application insofar as practicable of principles of management intended to sustain the yield of caribou, wolves, brown bears, and black bears. We have considered the role of predators in the ecosystem, as well as their distribution within the range of the Mulchatna caribou herd. The application of predator control in this area under the proposed plan will occur in a relatively small geographic area. Removing wolves, brown bears, and black bears will have a minor effect on these populations and includes a goal of long-term sustained yield. The proposed IM program has been carefully developed and implemented and is adaptable as new observations and information are gathered. The department has taken a hard look at a wide variety of factors impacting caribou, wolves, brown bears, and black bears. We have made decisions regarding the sustainability of all species—specifically one prey, and three predators—within the Mulchatna system. Evidence supports that predator control likely improved Mulchatna calf survival, and we will operate within the context of the sustained yield provisions of the constitution and the IM statute.