

DISCUSSION FORUM

MANAGEMENT OF LARGE PREDATORS IN ALASKA

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Abstract

Populations of wolves (*Canis lupus*), brown bears (*Ursus arctos*), and black bears (*Ursus americanus*) in Alaska are abundant and highly productive. Their long-term future is secure due to abundant habitat and good wildlife management practices. In many areas of Alaska hunting and trapping regulates wolf numbers and keep them "in balance" with moose populations. However, high predation rates by wolves can severely depress prey populations and then hold them at a very low density many years. This is often referred to as a predator pit. Several moose populations in interior Alaska are in predator pits. In some of these areas, high densities of black and brown bears complicate the situation. Bears generally prey on moose calves for only a few weeks after they are born, but in some areas they kill up to 65% of the calves produced. Moose populations faced with high levels of predation by both wolves and bears will not recover without special management actions to reduce the predation rate. Efforts to regulate predator populations outside of normal hunting and trapping seasons are highly controversial. Many people are very strongly opposed to reducing wolf or bear populations to increase moose populations and provide for a higher harvest by humans. Other people that depend on the moose for food and/or recreation strongly support predator management. It is a clash of values that is generates great controversy in Alaska. We provide a brief history of the controversy over predator management in Alaska and make recommendations on how to manage large predators in Alaska.

Introduction

In contrast to most places in the world, Alaska continues to have an abundance of large predators. Populations of wolves (*Canis lupus*), brown bears (*Ursus arctos*), and black bears (*Ursus americanus*) are abundant, widely distributed, and highly productive. Their long-term future is secure due to an abundance of high quality, remote habitat and good wildlife management practices. Yet management of large predators, especially wolves, is highly controversial. Public attitudes toward wolf management are based on deeply held values, and conflicts between people with divergent values have fueled controversy for decades. Some people and organizations have no desire to understand and accept the values of others on this issue, which makes it difficult to establish lasting wildlife policies.

Most Alaskans are proud that we have large and healthy populations of large predators, and many recognize that we have a special responsibility to manage wolves to ensure their continued abundance. However, in much of Interior Alaska

large predators maintain moose (*Alces alces*) and caribou (*Rangifer tarandus*) populations at very low levels, leaving little harvestable surplus for humans.

Man has the ability to influence this system by reducing wolf and bear populations and allowing ungulate populations to increase to elevated levels. The wildlife management controversy centers on whether — or when and how — it is appropriate for humans to decrease predator numbers to increase ungulate harvests.

Current Status of Populations

Wolves

The population of wolves in Alaska is about 8000 to 11,000 in 1200 to 1700 packs [1]. Wolf density varies widely from area to area and is highly dependent upon availability of prey resources and the occurrence of roads and human populations. Population densities range from about 1 wolf / 65 to 200 km² in southern and interior areas to 1 wolf / 400 km² in the coastal areas of northern and western Alaska. Wolf numbers are stable to increasing through out Alaska and their abundance is very high relative to historic levels [1]. Wolves are distributed throughout all of Alaska, except for a few islands and in the ice fields and highest mountains.

Each year hunters and trappers harvest about 1500 wolves in Alaska (5-year average = 1475, range 1063–1741) [1]. The harvest has increased over the last 5 years as the population has increased. Hunting seasons begin in August when hunters are in the field pursuing other species. The hunting bag limit is 5 to 10 per season, but rarely do hunters kill more than 1 wolf. The trapping season varies by region, but it is set to ensure that pelts will be in prime condition. Season timing and length, rather than a bag limit, are used to manage the level of harvest.

Grizzly Bears

Grizzly bears occur throughout Alaska except in the far southwestern part of the state and a few western islands. The population is estimated at 60,000–75,000 [2]. Density, as well as size, varies tremendously depending upon food availability. In coastal areas with abundant fisheries resources the density can be as high as 1 bear / 3 to 8 km². In Arctic Alaska the density is often less than 1 bear / 260 km². Grizzly bear populations throughout Alaska are believed to be at historic high levels.

Each year hunters harvest about 1500 grizzly bears in Alaska (5-year average = 1544, range 1125–1947) [2]. The majority of the harvest occurs in coastal areas of southern and southeastern Alaska because the bears grow to large size and have a high trophy value. Participation in hunting in areas with trophy bears is limited by random drawing and a hunter can harvest only 1 bear every 4 years. Few people hunt grizzly bears in Interior or Arctic Alaska, so participation in hunting is less restricted. Hunting seasons occur in both the spring and fall, female bears with cubs less than 2-years old are protected from harvest.

Black Bears

Black bear distribution in Alaska is dependent upon forest cover. Black bears occur throughout the state except in the far north where trees do not occur. The black bear population ranges from 200,000 to 300,000 animals and appears to be increasing throughout its range [3]. The population is believed to be slightly lower than historic high levels in part because of an increase in grizzly bears. As with brown bears, densities vary greatly with food availability. In areas of abundant food, the density can be as high as 1 bear / 3 km², but commonly range between 1 bear / 20 to 40 km² in large areas of Interior Alaska. In areas with lower quality habitat the density ranges from 1 bear / 65 to 130 km².

Annual harvest rates are about 2400 bears (5-year average = 2369, range 2029–2558) [3]. Seasons are liberal throughout the state, although hunting occurs largely in the spring and fall. Bag limits in some areas are 3 bears per year, but it is rare for a hunter to harvest more than 1 bear per year.

Predator–Prey Relationships

In rural Interior Alaska, combined predation from wolves, grizzly bears, and black bears keeps moose and caribou populations at low densities, well below the level where food and weather normally limit densities [4,5]. Programs allowing strong reductions in numbers of wolves and bears in Interior Alaska have shown that wolves and bears are limiting or capping the density of moose and caribou at low levels. Where wolves and bears are regularly controlled by humans, for example in and near urban areas, moose reach elevated densities. Also, in northern coastal areas, moose reach elevated densities because wolves are periodically reduced by epidemic outbreaks of rabies. Coastal and particularly coastal, arctic caribou herds also reach elevated densities because of reduced wolf numbers from rabies and because of the relative scarcity of year-round prey for wolves on some major calving areas.

Moose and caribou in rural Interior Alaska have no such relief from predation. Moose, caribou, and, to a much lesser extent, Dall sheep are the only large prey in Interior Alaska for wolves and bears. Moose densities currently vary from 1 moose / 3.5 to 13 km² over large areas of rural Interior Alaska, (ADF&G files) [4]. In contrast, moose densities commonly range from 1 moose/ 1 to 3 km² of moose habitat in and near urban areas and in the best habitats in northern coastal areas. In recent history, Interior Alaska caribou herds have typically ranged in density from 1 caribou/ 3 to 10 km², except when predators have been periodically reduced by humans [6]. In contrast, coastal and arctic herds range in density from 1 caribou/ 0.5 to 2 km².

Wolves are usually the primary predator on adult moose and caribou and on caribou calves. Grizzly bears also kill adult moose and caribou and, where grizzlies are abundant, they are the chief predator of moose calves. Where grizzlies are relatively scarce, black bears are usually the chief predator on moose calves. Radiocollaring

studies have shown that black bears or grizzly bears often kill up to 50% of the moose calves born [4,7,8,9,10,11]. In addition, wolves can kill up to 22% of the moose calves born in an area and 7% or more of the older moose each year.

History of Predator Control in Alaska

Humans have harvested wolves and bears for many centuries in Alaska by hunting and trapping. Without the use of aircraft, hunting and trapping likely had little influence on these populations, except near urban areas. However, poisons were used indiscriminately during the early part of the century and wolf populations were reportedly low [12]. Bounties were started in 1915 and continued through 1968 and later in Southeast Alaska. During 1949 through 1959, widespread wolf control occurred through poisoning and aerial shooting by federal agents. Public aerial gunning was also common during the 1950s. These efforts resulted, temporarily, in low wolf and bear populations and high ungulate populations [13]. Poisoning and public aerial gunning has long been illegal and unacceptable to a large majority of Alaskans.

Statehood in 1959 coincided with increased concern for wolf populations. Federal predator control efforts were largely terminated except near reindeer herds. In 1963, wolves were classified as a big game animal and a fur animal, the first official recognition of the wolf as a valuable species [12]. Wolves increased in numbers and reached historic highs in several important areas.

Aerial shooting of wolves by the public continued in the 1960s and was widespread in treeless areas until early 1972, but strict limits were imposed in certain areas. The Alaska Department of Fish and Game ceased issuing aerial shooting permits in 1972 after passage of the federal Airborne Hunting Act.

From 1975 until 1986, the Alaska Department of Fish and Game reduced wolf populations in several areas. Only department employees participated and, in most cases, employees shot wolves from helicopters. Several organizations filed lawsuits to stop wolf control during this period, but the state prevailed. The longest term wolf control program occurred in an area where wolves, not bears, were the most significant predators. In this area, elevated moose numbers continue to support elevated wolf numbers (ADF&G files) [5]. In 1986 all wolf control programs ceased due to various administrative actions and court mandated delays [14].

A new governor was elected in November 1986. He prohibited wolf control for the duration of his 4-year term. This action did not stop the controversy and confrontations. It merely shifted attention to land-and-shoot taking of wolves. Land-and-shoot taking allowed a hunter to observe wolves from a fixed-wing aircraft until they moved into an area where the pilot could land the plane and shoot the wolves. The Alaska Supreme Court ruled in 1986 that land-and-shoot hunting was a legal method of hunting wolves and this practice continued until 1996 with increasing restrictions.

In 1989 the department tried a new approach to resolve the long-standing issue of wolf control. We proposed the concept of developing a statewide wolf management plan using a stakeholder process. We hoped a strategic plan built with a lot of public involvement would defuse the issue and allow development of a stable wolf management policy.

A 12-person planning team comprised of a wide variety of interest groups produced a consensus plan. Key points of consensus were:

1. The wolf population in Alaska is abundant and secure.
2. Wolves in Alaska are highly valued by people for many purposes.
3. Wolves are capable of limiting the abundance or productivity of prey.
4. No single management regime can be applied across the state to accommodate all legitimate human values.
5. Some form of zonal management system offers the best chance to address conflicting values.

The team did not reach consensus on 2 critical issues:

1. Whether land-and-shoot hunting of wolves by the public should be allowed.
2. The circumstances under which wolf control by department personnel would be acceptable and how control should be implemented.

Near the end of the planning process, leadership of the department changed. This produced a subtle, but fundamental, shift in the department's perspective. A new governor appointed leaders that strongly supported wolf control as a means of increasing ungulate harvest by humans. No effort was made to have the team try to reach consensus on the two critical issues of when wolf control was acceptable and how it should be implemented.

In November 1991 the draft wolf management plan was adopted as board policy. At that meeting the board also changed the rules pertaining to land-and-shoot hunting of wolves. Shooters were required to be at least 100 yards from their airplanes before shooting. This action effectively ended most legal land-and-shoot hunting of wolves by the public. The board expected aerial wolf control by department personnel to replace land-and-shoot hunting and become the standard method to reduce wolf numbers where it was necessary.

In November 1992 the board approved wolf control in three areas. The plan was for department personnel in helicopters to shoot wolves. Public reaction was immediate and strong. The department and the governor received over 100,000 letters and telephone calls objecting to wolf control. A tourist boycott was initiated. Alaska's wildlife management policies were debated and bashed nightly on national television.

The governor invoked a moratorium on the program until a wolf summit of state and national interest groups could meet and discuss the issue. The summit was held in

Fairbanks in mid-January 1993. It only provided a forum for various factions to fight in public. The Board of Game met one week later and rescinded the wolf control regulations.

In June 1993 the board held a special meeting on wolf management. It adopted a policy entitled "The wolf conservation land management policy for Alaska." This is still the board's guiding policy. At that meeting the board also authorized ground-based wolf control using trapping in a small area in Interior Alaska. In fall 1993, 98 wolves were taken by department personnel.

The department began a second year of trapping in November 1994. A new governor was inaugurated on December 4, 1994. He moved quickly to suspend the wolf control program. A few weeks later, he called for a review of the department's wolf management program by the National Academy of Science (NAS). This year-long review concluded that wolf control could be effective in some circumstances, the department's wolf management program was based on sound science, and wolf control would be costly and controversial.

Based in part on the NAS report [15], the governor established three basic principles that must be met before wolf control could proceed. Any control program:

1. Must be based on sound science.
2. Must be cost effective.
3. Must be broadly acceptable to the public.

Adhering to these three principles and following a year-long citizen participation planning effort, the department implemented a nonlethal wolf control program to rebuild the Fortymile caribou herd [16]. Beginning in November 1997 and extending through May 2001, the department sterilized the alpha males and females in wolf packs in the control area and moved subdominant wolves to other locations. The caribou population increased from 22,000 to 38,000 during this period [17]. This nonlethal program was controversial, but not nearly to the extent of lethal programs.

In 1996 an initiative related to wolf management was placed on the ballot and passed by Alaskan voters. The initiative prohibited same-day-airborne hunting of wolves, lynx, and foxes by the public. The initiative also set standards the department had to meet before implementing a wolf control program. These standards required the Commissioner to find that an emergency existed before conducting wolf control and defined "emergency" as an irreversible decline of the prey population. Fifty-nine percent of voters favored the initiative.

In 1999 the legislature passed a bill allowing same-day-airborne public shooting of wolves, but only in areas where the board had authorized predator control. This action reversed a key element of the law adopted by ballot initiative in 1996. The governor vetoed the bill. The legislature overrode the veto. Another ballot initiative, which passed in November 2000, again prohibited same-day-airborne hunting of wolves in areas authorized by the board for wolf control. In 2003, the legislature

amended the way in which same-day -airborne methods can be implemented in wolf control programs. Under this new statute, the Alaskan Board of Game can authorize predator control programs involving same-day-airborne methods if, working with the Department of Fish And Game and the public, the Board determines that aerial programs are needed to address a wildlife management problem. The federal Airborne Hunting Act still requires that participants have a permit from the state authorizing same-day-airborne activities.

Since 1996, the Alaska Board of Game has authorized wolf control in five areas where ungulate populations declined to low levels. The nonlethal program in the range of the Fortymile caribou herd is the only program that has been implemented to reduce wolf numbers.

Efforts to reduce bear numbers through hunting have failed or been inconclusive, except in and near urban areas. However a 1-year nonlethal program to move bears was implemented in the immediate vicinity of McGrath in spring 2003. An increase in moose numbers is expected in this area, but data are forthcoming. Other nonlethal techniques of reducing predation have also been studied by ADF&G [18].

Some individuals and groups are angry that the department has not conducted wolf control in the other areas where the board has authorized action. Others are pleased and continue to work hard to ensure that wolf control is not conducted again.

In summary, great efforts have been made since 1990 to develop a lasting wolf management policy for Alaska. The department and the board have tried to develop a policy that recognizes the importance of the wolf to Alaska, recognizes the widely divergent values people have about wolves, and allows wolf populations to be regulated when necessary to maintain the ability of people to harvest moose and caribou. To date, all such efforts have either failed or been inconclusive, and the issue is as controversial as ever.

Conclusions

In our opinion, some general conclusions that can be drawn from this history are:

1. The department will never again conduct widespread and continuous wolf control to increase ungulate populations. The monetary costs are too high and the general public does not want their wildlife to be managed in that manner.
2. Wolf control by department personnel may be possible in small areas to help restore moose or caribou populations. In order to gain public acceptance, it will be necessary to have citizen participation in a planning process, guided by reliable scientific information.
3. Public acceptance is more easily gained if nonlethal methods of wolf population reduction are used, but this practice is probably not feasible in many remote areas of Alaska.
4. A statewide planning effort, as was done in 1990, is unlikely to be productive. Such a plan can only provide general guidelines for wolf control. We must

address each area individually with a planning team that includes local residents.

5. In most places in Alaska, local residents and other hunters must reduce predator populations on their own, through legal means of hunting bears and hunting and trapping wolves. The board and department will need to consider seasons, bag limits and methods needed to reach this goal, as part of an overall wildlife management strategy.
6. Wolf management is complex, because sociological considerations are more influential than biological information. The majority of the American public and a sizeable proportion of the Alaskan public do not want the department to undertake wolf control. Also, several vocal, national organizations specifically fund efforts to prevent any wolf control
7. The public has an important and legitimate role in managing public resources. We must continue to discuss predator and prey management objectives with a broad-based public.

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