



The Alaska Chapter of The Wildlife Society Position Statement Intensive Management of Big Game in Alaska *Adopted June 2013*



Introduction

In 1994, the Alaska State Legislature authorized HCS CSSB 77, “An Act Relating to the Powers of the Board of Game and to Intensive Management of Big Game to Achieve Higher Sustained Yield for Human Harvest.” This Intensive Management (IM) law is found in Alaska Statute 16.05.255 (e)-(g) and (k) with the enabling regulation for predator control programs in Alaska Administrative Code 5 AAC 92.111-113, 118, and 121-124 (formerly all under 5 AAC 92.125).

The Alaska Chapter of The Wildlife Society (TWS) believes that management of ungulates (i.e. moose, caribou, and deer) and predators should be based on objective decisions supported by science. We advocate neither for nor against intensive management of ungulate populations, but recognize that the IM law has and will continue to influence state management of wildlife. Because the law can affect (1) populations of predators and ungulates, (2) the process by which wildlife management decisions are made, and (3) public perceptions of wildlife management, the Alaska Chapter of TWS has a professional interest in its implementation. Here, we briefly review the scientific basis for predator reduction as a management tool to enhance ungulate abundance and harvest, and implementation of the IM statute to date. From those reviews we draw conclusions regarding execution of the IM statute and offer recommendations to improve its implementation, based on our professional judgment.

Background

Demand for the harvest of ungulates in Alaska contributed to passage of the IM statute in 1994. The intent of the law is to manage ungulate populations at elevated but sustainable levels for human consumptive use. The IM law requires the Alaska Board of Game (BOG) to identify populations of caribou, deer, and moose to be managed for high harvest, and to codify population and harvest objectives for ungulates. Intensive management programs that are established by the BOG typically involve predator control, but can also include habitat enhancement. The BOG is precluded from significantly reducing hunter harvest of ungulate populations identified as important for human needs without considering IM regulations, unless it can demonstrate that IM would be: (1) ineffective, based on scientific information, (2) inappropriate due to land-ownership patterns, or (3) against the best interest of subsistence uses. The Commissioner of the Alaska Department of Fish and Game (ADF&G) has the authority to implement and discontinue IM programs that are authorized by the BOG, or specific actions within those programs.

Many hunting groups, local fish and game Advisory Committees (ACs), and some individual citizens have proposed IM programs to the BOG. ADF&G implements programs authorized by the BOG and recognizes IM as a management tool. However, predator control has been contentious under IM, as it was prior to passage of the law. Whereas some members of the public have opposed predator reductions under IM, others have called for more widespread control of predators.

Predator Control, Ungulate Management, and Science

Ungulate populations are affected by habitat quality, population density, predation, harvest by humans, weather, and disease, as well as by interactions of these factors. Wolves, black bears, and brown bears are commonly major sources of ungulate mortality. Studies have demonstrated that moose and caribou populations can increase when $\geq 50\%$ of wolves are removed across large areas (typically $>8,000 \text{ km}^2$) over multiple years and if ungulate habitat quality is not limiting. Predator reduction across smaller areas such as caribou calving grounds can also enhance ungulate recruitment. Wolves have a high reproductive rate and readily immigrate from adjacent populations. Studies to date indicate that intensive harvest is required to reduce wolf density, but that their populations will increase rapidly once control efforts cease.

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Management programs designed to reduce bear density have also usually included control of wolves in an effort to maximize the response of ungulate populations. Simultaneous reduction of bears and wolves confounds interpretation of the efficacy of bear control as a management tool. Bear reduction without concurrent removal of wolves can increase survival of ungulate calves. However, there is relatively little research on the direct effects of bear removal on the density or harvest of adult ungulates. Bear populations are apt to increase more slowly than wolves after control efforts cease because they have a lower reproductive rate. Bears are difficult to census and the long-term effects of intensive harvest on bear populations are poorly understood.

The efficacy of predator reduction to enhance ungulate populations can depend on whether habitat quality will support an increase in ungulate density. The outcome may also be influenced by the species composition of the predator community and the availability of prey other than ungulates. In addition, the efficacy of predator reduction can be diminished if disease or severe winter weather result in high levels of mortality among ungulates, or if ungulates are not limited by predation.

Reduction of wolves and bears could have effects that extend beyond the target ungulate population. These may include changes in populations of smaller carnivores (e.g. coyotes, wolverines), with subsequent effects on the prey of those species and plant communities. The consequences of prolonged large predator reductions at the ecosystem level need further study.

If moose and caribou populations increase after predator reduction, it is necessary to prevent them from becoming so abundant that they damage their habitat by removing more forage than plants can replace. This requires an increase in harvest of ungulates. In some areas, it may be necessary to harvest cows and calves to maintain ungulate populations at the desired level. Even when ungulate population objectives have been achieved, reaching harvest objectives can be difficult in remote areas where hunter access is difficult, or if there is local opposition to hunting of cows and calves. Habitats damaged by excessive numbers of ungulates ultimately support smaller ungulate populations, negating the intent of an IM program.

Implementation of the Intensive Management Law

Ungulate populations designated for high human harvest by the BOG occupy about 97% of Alaska (5 AAC 92.108). Six IM programs were approved by the BOG and implemented by ADF&G from 2003 to 2011. Predator control under those programs was implemented across 7- 12% of Alaska's land area at any one time. All programs included efforts to reduce wolves and two programs attempted to also reduce numbers of bears. As of 2011, predator control under these programs had been conducted for 2-9 years (median = 8 years). Of the seven ungulate populations (5 moose and 2 caribou) that were the focus of IM programs, harvest and population objectives had been reached in at least one year for two (1 moose and 1 caribou). Three additional IM programs have been approved by the BOG and implemented during 2011-2012.

Implementation of IM programs is guided by the 2011 ADF&G IM Protocol. The Protocol provides principles and guidelines for IM programs, as well as tools for development of feasibility assessments, operational plans, and IM reports. It summarizes legal and policy directives that apply to IM, and defines important biological, economic, and societal concepts. The Protocol promotes scientific application of adaptive management as a means for ongoing review and revision of IM programs, and provides recommendations for study design to evaluate population response of ungulates and predators. Annual summaries of IM programs are available on the ADF&G web site.

Predator control programs can exist outside of IM (e.g. bear control to enhance muskox populations in northern Alaska). Furthermore, the BOG has at times modified regulations governing hunting and trapping of bears, wolves, and coyotes with the intent of increasing predator harvest to benefit ungulates. However, regulatory amendments are not typically subjected to feasibility assessments, statement of objectives, or monitoring of outcomes to the degree prescribed by the ADF&G IM Protocol.

Findings Regarding the Intensive Management Law

Based on our review of scientific literature and state documents related to the IM legislation, as well as our collective experience as wildlife professionals, the Alaska Chapter of TWS finds that:

1. Reducing abundance of wolves and bears is a tool that wildlife managers can use to potentially increase ungulate populations that are limited by predation.
2. The ADF&G IM Protocol is an important advance in the implementation of the IM law, and provides a means for wildlife managers and the public to (1) assess whether IM should be implemented, (2) evaluate the efficacy of an IM program, and (3) determine whether a program should be retained, modified, or suspended.
3. Although the IM law includes a provision for improvement of ungulate habitat (e.g. forage abundance), the BOG and ADF&G lack authority to regulate prescribed fire, manage natural fire regimes, or implement other habitat improvements on lands other than state Game Refuges and the Delta Bison Range.
4. In the 1970's the Legislature authorized ACs to revoke cow and calf moose hunts in their geographic areas because those hunts were often unpopular with local hunters. AC rejection of antlerless hunts has been an impediment to achieving adequate harvest of ungulates in some IM programs and could result in overabundant ungulate populations that exceed forage capabilities and cause long-term damage to habitats.
5. Achieving IM population and harvest objectives for ungulates can take several years and may require that more predators or additional species of predators be removed than is possible in some programs. This is especially true where predator reduction is primarily based on public participation or where environmental conditions make predator removal difficult.
6. Some codified population objectives for ungulates may not be attainable due to habitat limitations or other environmental factors. Poor hunter access or objections to liberalized harvest by local residents can prevent ungulate harvest objectives from being reached. Failure to reach population or harvest objectives may result in a perception that IM programs are ineffective. Reallocation of ungulate mortality from predation to harvest without an increase in the ungulate population growth may be favorable to some hunters but considered an inappropriate justification of IM by critics.
7. According to the ADF&G IM Protocol, implementing IM programs has required about one-third of the operations and salary budget of the Division of Wildlife Conservation (DWC) in some regions. The operational costs for IM are high, and can limit personnel and funds for other wildlife management programs in ADF&G.
8. The efficacy of predator reduction as a means to enhance deer populations has not been fully studied in Alaska. If such programs are implemented, they should be considered experimental and they should have measurable objectives that serve to assess their efficacy.
9. IM programs are typically result-oriented wildlife management actions that have the goals of increasing ungulate population density and subsequent harvest. They are usually not intended as research into predator-prey dynamics, which would require designed experiments with explicit controls.
10. As management actions, IM programs are ideally implemented under a clearly stated decision framework that allows review and revision of programs based on whether objectives are achieved. When IM programs are modified outside of that framework in response to public demand for increased efficacy or participation, assessment of the effects of individual management actions become difficult.

Recommendations Regarding the Intensive Management Law

Therefore, The Alaska Chapter of The Wildlife Society recommends that:

- I. IM programs that include predator control be judiciously employed in cases where (1) it is feasible to remove an adequate number of predators to elicit an ungulate population increase, and (2) increases in human harvest of moose or caribou can be achieved to prevent ungulate populations from exceeding carrying capacity and causing long-term damage to their habitat.
- II. The Legislature be aware of the long-term commitment and economic cost of IM programs, and when programs are implemented, provide adequate funding to support the scientific design and monitoring described in the ADF&G IM Protocol.
- III. The Legislature examine means to resolve conflicts between the IM law and legislation that grants ACs the authority to veto antlerless moose hunts.
- IV. The BOG consult with wildlife scientists to evaluate the codified ungulate population objectives to ensure they can be met given nutritional constraints imposed by habitat conditions. The Commissioner of ADF&G should not implement or renew predator reduction programs if the objectives for ungulate population size cannot be met due to habitat limitations, or if hunter harvest objectives cannot be fulfilled due to environmental or societal factors.
- V. Guidelines in the ADF&G IM Protocol be followed when IM programs are implemented. Of special importance are: (1) a feasibility assessment to evaluate whether predator and ungulate population objectives can likely be met, (2) defined population or habitat metrics that gauge the efficacy of the program and that may serve to terminate it either because the objectives have been achieved or are determined to be unobtainable, (3) monitoring to evaluate outcomes, and (4) a science-based adaptive management framework that provides for ongoing review and revision of programs based on achievement of goals. Progress toward goals is best evaluated if estimates of ungulate and predator populations are obtained, and ungulate habitat quality measured prior to implementation of an IM program.
- VI. Efforts to enhance ungulate populations via predator reduction occur under an IM framework, rather than through amendment of regulations to increase harvest of predators.
- VII. ADF&G evaluate the effects of intensive harvest on the dynamics of black and brown bear populations, and the efficacy of bear population reduction as a means to increase ungulate populations.