





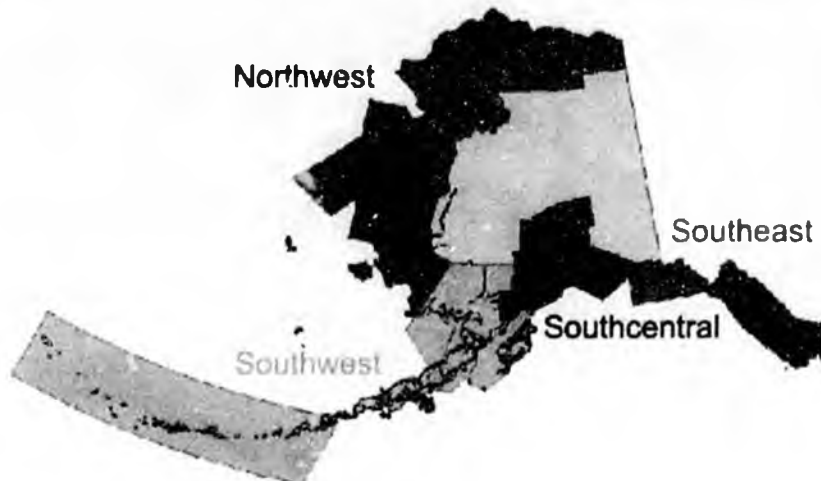
# Alaska Coastal Management Program

Division of Coastal and Ocean Management  
Department of Natural Resources

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# FISCAL NOTE

**STATE OF ALASKA**  
**2008 LEGISLATIVE SESSION**

Fiscal Note Number: \_\_\_\_\_  
 Bill Version: HB243  
 () Publish Date: \_\_\_\_\_

Identifier (file name): HB243-DNR-DCOM -03-14-08 Dept. Affected: Natural Resources  
 Title: An Act Relating to the Alaska Coastal Management Program RDU: Resource Development  
 Component: Coastal and Ocean Management  
 Sponsor: Joule, Edgmon  
 Requester: H CRA Component Number: 2680

**Expenditures/Revenues** (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information					
		FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
<b>OPERATING EXPENDITURES</b>							
Personal Services							
Travel							
Contractual							
Supplies							
Equipment							
Land & Structures							
Grants & Claims							
Miscellaneous							
<b>TOTAL OPERATING</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

<b>CAPITAL EXPENDITURES</b>							
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<b>CHANGE IN REVENUES ( )</b>							
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**FUND SOURCE** (Thousands of Dollars)

1002 Federal Receipts							
1003 GF Match							
1004 GF							
1005 GF/Program Receipts							
1037 GF/Mental Health							
Other Interagency Receipts							
<b>TOTAL</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

Estimate of any current year (FY2008) cost: 0.0

**POSITIONS**

Full-time							
Part-time							
Temporary							

**ANALYSIS:** (Attach a separate page if necessary)

No fiscal impact to DNR.

Prepared by: Randy Bates, Director  
 Division: Coastal and Ocean Management  
 Approved by: Tom Irwin, Commissioner  
Natural Resources

Phone 465-8797  
 Date/Time March 14, 2008  
 Date March 14, 2008

During Session:  
Alaska State Capitol  
Juneau, Alaska 99801-1182  
(907) 465-4855  
Fax (907) 465-4586  
1-800-782-4833

Representative\_Reggie\_Joule@legis.state.ak.us



During Interim:  
P.O. Box 673  
Kotzebue, Alaska 99752  
(907) 442-3880  
Fax (907) 442-3022

**Alaska State Legislature**  
**REPRESENTATIVE REGGIE JOULE**

Date: March 20, 2008

To: Representative Johnson, Co-Chair Resources  
Representative Gatto, Co-Chair Resources

From: Representative Joule *RJ*

Re: Request for Hearing

I would like to formally request a hearing on CS HB 243, "An Act relating to the Alaska coastal management program; and establishing the Alaska Coastal Policy Board." I have attached the committee substitute, sponsor statement, fiscal note, sectional analysis, and some other pertinent information. If possible we would appreciate a hearing as soon as possible. If you have any questions or concerns, please contact our office. I appreciate your consideration of this request.

## NORTHWEST ARCTIC BOROUGH

P.O. Box 1110

Kotzebue, Alaska 99752

(907) 442.2500 or (800) 478.1110

Fax: (907) 442.3740 or 2930

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April 8, 2008

Honorable Craig Johnson  
Honorable Carl Gatto  
Co-chairs House Resources Committee  
State Capitol  
Juneau, Alaska 99801

Sent by fax: 907-465-3872

Re: HB 243 Coastal Management

Dear Senators Johnson and Gatto:

This letter responds to the request for additional information during the Resources Committee meeting on April 4, 2008, for more information about our coastal management plan. I was not able to attend the meeting; however, John Chase, our community planner and coastal area specialist, did attend and provided testimony. During the meeting, the committee requested more information about the enforceable policies and designated areas disapproved by the Alaska Department of Natural Resources (DNR) for our coastal management plan.

On October 31, 2006, the Commissioner of DNR adopted the Final Recommendation to the Commissioner on the Northwest Arctic Borough's coastal management plan. Since the Final Recommendation is too long to fax, I have arranged for a hard copy of it to be delivered to the Resources Committee. This finding may also be viewed on the Alaska Coastal Management Program (ACMP) website at the following address: [http://alaskacoast.state.ak.us/District/Final\\_Tables/NorthWestArctic.htm](http://alaskacoast.state.ak.us/District/Final_Tables/NorthWestArctic.htm)

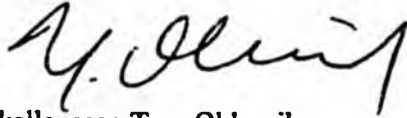
As background, the Northwest Arctic Borough has been revising our coastal management plan since 2005 at the request/direction of the state. We have met all of the deadlines, and we made a special effort to ensure our plan met all of the requirements in the revised ACMP statutes and regulations. Unfortunately, despite many efforts, all of our proposed important habitat areas and areas designated for historic and prehistoric resources were denied; and only one small subsistence use area was approved which contradicts local lifestyles of our Alaska residents that depend solidly on subsistence for our local economy and culture. We are currently in mediation with the state over the decision on our plan, and the mediation meeting is scheduled for May 6 -7, 2008 in Kotzebue.

**NORTHWEST ARCTIC BOROUGH****P.O. Box 1110****Kotzebue, Alaska 99752****(907) 442.2500 or (800) 478.1110****Fax: (907) 442.3740 or 2930**

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I appreciate the committee's interest in HB 243, and I urge you to pass this bill from the committee. Please contact me if you have any questions about our proposed plan at (907) 442-2500 or by email at [tokleasik@nwabor.org](mailto:tokleasik@nwabor.org).

Sincerely,



**Ukallaysaq Tom Okleasik**  
**Planning Director**

**Debra Higgins**

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**From:** Bates, Randall W (DNR) [randy.bates@alaska.gov]  
**Sent:** Tuesday, April 08, 2008 4:09 PM  
**To:** Debra Higgins  
**Cc:** Lesh, Melanie G (DNR)  
**Subject:** ACMP Information  
**Attachments:** 080408 NSB Mediation Brief.pdf; 080408 NAB Mediation Brief.pdf

Debra,

Thanks for your good work and support during the H RES hearing for HB 243 regarding the Alaska Coastal Management Program. During the hearing last Friday (April 4), I was asked to share with the committee members information regarding the North Slope Borough and Northwest Arctic Borough coastal management plans, their proposed enforceable policies, and the issues related to the pending mediation. The members can find information as follows:

1. North Slope Borough coastal management plan information -  
[http://www.alaskacoast.state.ak.us/District/Final\\_Tables/NorthSlope.htm](http://www.alaskacoast.state.ak.us/District/Final_Tables/NorthSlope.htm)
2. Northwest Arctic Borough coastal management plan information -  
[http://www.alaskacoast.state.ak.us/District/Final\\_Tables/NorthWestArctic.htm](http://www.alaskacoast.state.ak.us/District/Final_Tables/NorthWestArctic.htm)
3. State of Alaska briefs for the North Slope Borough and the Northwest Arctic Borough – attached in .PDF

If you would be willing to forward this information as appropriate, I would appreciate it. If I can provide you or the H RES members any additional information or answer any other questions, please let me know.

Again, thanks!

Randy

4/8/2008

## I. INTRODUCTION

The Alaska Coastal Management Program (ACMP) was formed in 1977 under the authority of the federal Coastal Zone Management Act of 1972. Since 1977, the ACMP has undergone significant changes, yet the program has maintained its original objective of properly managing the competing demands upon, preservation of, and sustainable use of Alaska's rich and diverse coastal resources. A list of the ACMP's procedural history pertinent to this mediation follows:<sup>1</sup>

- 1972 - Federal Coastal Zone Management Act provides a forum to address the increasing demands for the use and enjoyment of coastal resources.
- 1977 - Alaska Coastal Management Act is established as a program within the Office of the Governor administered through the Division of Governmental Coordination (DGC). The Governor appoints the Coastal Policy Council (CPC) to make program policy decisions.
- August 1997 - The ACMP Assessment Steering Committee is formed to evaluate the efficiency of the program and outline problems within the program.
- 1997 - Senate Bill 308 requires reform of the coastal district plans requiring that coastal district plans not incorporate by reference statutes and administrative regulations by state agencies. No coastal districts amend their coastal plan in light of this bill and the CPC fails to enforce the bill.
- November 27, 2002 - NOAA's Office of Ocean and Coastal Resource Management (OCRM) approves an amendment of the previous ACMP as a routine program change. This routine program change includes changes to 6 AAC 50 (the former regulations governing the consistency review process) and incorporates the requirements of Senate Bill 308 into the program.
- February 12, 2003 - Executive Order 106 transfers responsibility for the ACMP from DGC to the Department of Natural Resources (DNR) Office of Project Management and Permitting (OPMP).
- May 21, 2003 - Governor Murkowski signs House Bill 191 into law. The bill recites the need to update the existing statewide standards to make them clear and concise, and to provide predictability in the consistency review process. The bill also calls for an update and reform of the district coastal management plans so that "the local enforceable policies within these plans are clear and concise, provide greater uniformity in coastal management throughout the state, relate to matters of local concern, and do not duplicate state and federal requirements." The new plans are to be submitted to OPMP by July 1, 2005.
- May 26, 2005 - Governor Murkowski signs Senate Bill 102 into law. This bill nullifies and voids district enforceable policies that conflict with state law and extends the deadline for districts to submit their revised coastal management plans by eight months (to March 1, 2006).
- July 1, 2005 - The original deadline established by Senate Bill 191 for coastal districts to review their existing plans, revise as necessary, and submit them to DNR for review and approval.

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<sup>1</sup> Many of the legislative acts listed included numerous changes to the ACMP. Only those changes that are pertinent to this mediation are detailed.

- July 1, 2006 -- The original date that existing coastal plans were to sunset (except those submitted before July 1, 2005 and approved by DNR).
- March 1, 2006 – New date (first extension) for coastal districts to review their existing plans, revise as necessary, and submit them to DNR for review and approval.
- March 1, 2007 – New date for existing coastal plans to sunset (except those submitted before March 1, 2006 and approved by DNR).
- September 1, 2007 – New date (second extension) for existing coastal plans to sunset (except those submitted before March 1, 2006 and approved by DNR).
- October 2007 – The Office of Project Management and Permitting (OPMP) is split apart with Large Project Permitting staying within OPMP and the creation of the Division of Coastal and Ocean Management (DCOM) to manage the ACMP.

The ACMP relies, in part, on local implementation of the ACMP through the coastal district management plans. As a result of the legislative overhaul of the ACMP, twenty eight coastal districts throughout Alaska have amended or are in the process of amending their coastal district management plans. The new statewide standards at 11 AAC 112 and the plan amendment regulations at 11 AAC 114 establish the requirements for coastal district plan approval by the Department of Natural Resources. The approval of a coastal district plan is contingent upon the district plan's compliance with the statutory requirements of AS 46.40 and the implementing regulations at 11 AAC 112 and 11 AAC 114.

The North Slope Borough (NSB) triggered the State's review and approval process of the NSB coastal district plan amendment when it submitted its draft plan to the former OPMP on March 1, 2006. The former OPMP released its preliminary recommendations and comments to that draft on June 12, 2006. A thirty day public review and comment period was held on the proposed plan amendments and on the former OPMP's analysis and preliminary recommendations.

The NSB submitted its final plan amendment to the former OPMP in October 2007. This plan was evaluated pursuant to the applicable statutes and regulations and was submitted to the DNR Commissioner on October 31, 2007. The former OPMP recommended that the DNR Commissioner adopt NSB's plan in part and disapprove the NSB's plan in part – the Commissioner adopted the former OPMP's final recommendations pursuant to 11 AAC 114.335(e). The NSB requested mediation pursuant to 11 AAC 114.350(a)(2) for the following unapproved portions of its plan: enforceable policies A-1 through A-7, B-1 through B-3, C-1 through C-2, C-4 through C-10, D-1 through D-4, E-1 through E-3, F-1 through F-3, H-1 through H-2; natural hazard designated areas (specifically permafrost designation for all coastal waters south of Point Hope and the erosion designation for all areas within 20 feet of the mean high water mark of rivers); subsistence use designated areas (specifically the subsistence use designation for fish, gathering, Wainwright fall bowhead whale hunt, Point Hope fall bowhead whale hunt, and Point Lay spring bowhead whale hunt); important habitat designated areas, and technical edits to the CMP text.

## **II. DESIGNATED AREAS**

A district must have approved designated areas for natural hazards, subsistence use, and important habitat in order to develop enforceable policies applicable to those areas. *See* 11 AAC 114.250, 11 AAC 114.270, and the ACMP program description at §5.3.9.2. (submitted with the ACMP program amendment approved by NOAA's OCRM). The criteria for designating these areas are listed at 11 AAC 114.250(b), (g), (h). In addition, designated areas must be described or mapped at a scale sufficient to determine whether a use or activity is located within the area. *See* 11 AAC 114.270(g). To assist districts with the mapping of designated areas, the former OPMP developed mapping standards that are applied to all proposed coastal district management plan amendments. These standards are applied to ensure that all designated area maps meet the requirements of 11 AAC 114.250 and 11 AAC 114.270. In order for the former OPMP to recommend approval for designated areas, the district must have demonstrated that each designated area meets the above requirements and standards. A discussion follows regarding each disapproved designated area the NSB is mediating.

### **Natural Hazards**

The NSB's designated natural hazard areas for permafrost for all coastal waters south of Point Hope and for erosion for all areas within 20 feet of the mean high water mark of rivers cannot be approved because the NSB did not discuss the likelihood for occurrence as required by 11 AAC 114.250(b) for subsea permafrost south of Point Hope and for erosion in rivers.

### **Subsistence**

The NSB's designated subsistence use area for fish and gathering cannot be approved because the designation is too broad to meet the requirements of 11 AAC 114.250(g). The subsistence designated use area is too broad because the NSB's designated "fish" category contains fish with varying lifecycles, and the designated "gathering" category contains both gathering on land and in the marine environment. 11 AAC 114.250(g) states that a "district may ... designate areas in which *a* subsistence use is an important use of coastal resources and designate such areas." (emphasis added).

The former OPMP provided coastal districts, including the NSB, with guidance and direction on how to designate, document, and map *a* subsistence use. The designated subsistence use areas for "fish" and "gathering" is too broad because there is not a clear breakdown of the category of use (i.e., marine fish harvest, freshwater fish harvest, anadromous fish harvest, marine gathering, land-based gathering, etc.).

The bowhead whale subsistence use for Wainwright fall, Point Hope fall, and Point Lay cannot be approved because the district has not shown per 11 AAC 114.990(23) that bowhead whale subsistence use in these areas at these times is a current and actual use. In addition, these designations were added after the preliminary review and were not a part of the former OPMP public review process.

### **Important Habitat**

The NSB's designated important habitat areas cannot be approved for two reasons: 1) the areas address matters authorized under state law without documentation

that the matter is not adequately addressed under state law and 2) the designated area maps do not meet the state's mapping requirements.

The proposed designated important habitat area is considered an "enforceable policy" under the definition at AS 46.40.210(8). 11 AAC 114.270(e)(3) requires that district enforceable policies must "not address a matter regulated or authorized by state or federal law unless the enforceable policy relates to a matter of local concern as defined at AS 46.40.070(a)(2)(C)." NSB's designated important habitat areas duplicate existing state authority without demonstrating the matter is not adequately addressed. For example, the NSB designates "All anadromous waters identified in the Fish Distribution Database are designated as important habitat, including a 1000-foot corridor on either side of the stream as measured from the mean high water mark (Appendix G-3)." The ADFG Fish Distribution Database Atlas is a matter authorized by state law and is the authority under which other state laws are implemented. The NSB's designation duplicates existing ADF&G authority without demonstrating the matter is not adequately addressed.

In addition, the designated important habitat area maps do not meet the mapping requirements for the following reasons:

1. The legends do not state they are important habitat designated area maps, they do not list applicable enforceable policies, and they do not include the correct agency logos.
2. The maps designate areas on federal land.
3. The maps are not clear and concise as to what is actually being designated.
4. The maps include designations outside the coastal district boundary.
5. The maps are not backed up by written and scientific evidence that the areas have direct and significant impacts on coastal water and are biologically and significantly productive.

### **III. ENFORCEABLE POLICIES**

A break down of each category of enforceable policies and a general discussion follows:

#### **Natural Hazards**

There were four proposed natural hazards policies (D-1 through D-4). Only D-3 was approved in part. These policies are not approvable because they address a matter that is already adequately addressed by the Natural Hazards State Standard at 11 AAC 112.210. The Natural Hazards State Standard at 11 AAC 112.210 (c) reads:

Development in a natural hazard area may not be found consistent unless the applicant has taken appropriate measures in the siting, design, construction, and operation of the proposed activity to protect public safety, services, and the environment from potential damage caused by known natural hazards.

This Natural Hazards State Standard applies in all areas designated as a natural hazard including areas designated by the NSB. In addition, "appropriate measures in the siting, design, construction, and operation of the proposed activity" is further defined in 11 AAC 112.210(d).

### **Subsistence Use**

The subsistence use policies are not approvable because many of the policies address matters already covered under the subsistence state standard at 11 AAC 112.270 which addresses the avoidance and minimization of impact to subsistence uses of coastal resources within designated subsistence use areas. NSB has not demonstrated, pursuant to AS 46.40.070(a)(2)(C) and 11 AAC 114.270(e), that the matters are not adequately addressed by the subsistence state standard. Policy A-2 addresses access to the subsistence use areas. Enforceable policies for subsistence use are only applicable within the designated area. Therefore, this policy is not approvable because it does not flow from the state standard at 11 AAC 112.270 and does not comply with 11 AAC 114.270(a)(1). Policies A-3 and A-6 through A-7 address the availability of subsistence resources. Availability of subsistence resources is outside the purview of the ACMP. The Alaska Department of Fish and Game is authorized to ensure the availability of fish and game resources. The Subsistence State Standard simply tries to protect identified subsistence uses from reasonably foreseeable impacts from proposed projects in identified subsistence use areas.

### **Important Habitat**

At the most basic level, all of the enforceable policies for important habitat are not approvable under 11 AAC 114.250 and 11 AAC 114.270. The regulations require that an approved designated area must exist before a district can draft enforceable policies in this area. 11 AAC 114.270 also requires that a description or map developed under that subsection must be referenced in the applicable enforceable policy. The NSB does not have an approved designated area for important habitat for the reasons stated above, and, as a result, the NSB enforceable policies cannot be approved.

In addition, the important habitat policies are not approvable for the following reasons. First, some policies duplicate the authority of AS 41.14.840, AS 41.14.870, AS 46.03, and 18 AAC 70 that provides protection to fish and wildlife habitat. In addition, the State Habitat Standard at 11 AAC 112.300 already addresses certain aspects of impacts to fish habitat. The NSB has not demonstrated, pursuant to AS 46.40.070(a)(2)(C) and 11 AAC 114.270(e), that the important habitat is not adequately protected by these authorities. Third, many policies address areas adjacent to designated important fish habitat. Enforceable policies for important habitat are only applicable within the designated area. Therefore, these policies are not approvable because they do not flow from the state standard at 11 AAC 112.300 and do not comply with 11 AAC 114.270(a)(1).

### **Energy Facilities**

The energy facilities policies are not approvable for the following reasons. First, the energy facilities policies address activities that do not flow from a use or activity identified in 11 AAC 112.200-112.240, 112.260-280, or 114.250 (b)-(i), and do not comply with 11 AAC 114.270(a) and *The Alaska Coastal Management Program as amended June 2, 2005* (approved by OCRM December 29, 2005). Second, many of the proposed policies address activities already addressed by the state energy facility at 11 AAC 112.230, 11 AAC 112.300 and under the state's authority at AS 41.14.840 and AS

41.14.870. The district has not demonstrated pursuant to AS 46.40.070(a)(2)(C) and 11 AAC 114.270(e) that the matters are not adequately addressed under these authorities.

#### **Transportation Routes and Facilities and Utility Routes and Facilities**

The transportation routes and facilities and utility routes and facilities are not approvable because they address a matter that is already adequately addressed by the Transportation Routes and Facilities State Standard at 11 AAC 112.280 and the Utility Routes and Facilities State Standard at 11 AAC 112.240. The NSB has not shown, pursuant to AS 46.40.070(a)(2)(C) and 11 AAC 114.270(e), that the matter is not adequately addressed. The Transportation Routes and Facilities and the Utility Routes and Facilities State Standards do not require designated areas and are applicable through the coastal zone as appropriate.

#### **Conclusion**

For the most part, the NSB's proposed enforceable policies duplicate, restate, or incorporate by reference statutes and administrative regulations adopted by state or federal agencies, or address matters regulated by state or federal law that are not matters of local concern, or do not otherwise meet the requirements in AS 46.40.070. Each of the policies being addressed by this mediation cannot be approved for one or more of these reasons.

#### **IV. SOLUTION**

Components of the NSB's coastal management plan do not meet the requirements of the regulations. The Division of Coastal and Ocean Management (DCOM) can only approve the unapproved portions of the NSB's coastal management plan if the NSB makes substantial changes to comply with the regulations and mapping requirements, as described above.

#### **V. CONCLUSION**

The statewide standards listed in 11 AAC 112 are designed to be broad standards and are meant to be applied by resource agencies as well as coastal districts during a project's consistency review. Because these standards are so broad, it is only in rare circumstances that the interests of coastal districts may not be addressed by a statewide standard. This is why the regulations allow districts to develop enforceable policies under specific circumstances. The districts may continue to review projects and advise the state reviewing agency of the issues that were once covered by former district policies, yet under the current ACMP laws, many of these policies simply cannot be written into individual district plans. Such is the case with the unapproved portions of the NSB's coastal management plan.

## I. INTRODUCTION

The Alaska Coastal Management Program (ACMP) was formed in 1977 under the authority of the federal Coastal Zone Management Act of 1972. Since 1977, the ACMP has undergone significant changes, yet the program has maintained its original objective of properly managing the competing demands upon, preservation of, and sustainable use of Alaska's rich and diverse coastal resources. A list of the ACMP's procedural history pertinent to this mediation follows:<sup>1</sup>

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The NAB submitted its final plan amendment to the former OPMP in September 2006. This plan was evaluated pursuant to the applicable statutes and regulations and was submitted to the DNR Commissioner on October 26, 2006. The former OPMP recommended that the DNR Commissioner adopt NAB's plan in part and disapprove the NAB's plan in part – the Commissioner adopted the former OPMP's final recommendations pursuant to 11 AAC 114.335(e). The NAB requested mediation pursuant to 11 AAC 114.350(a)(2) for the following unapproved portions of its plan: enforceable policies A-1 through A-5, B-1 through B-3 and B-6 through B-10, C-1 through C-2, D-1 through D-2, E-1, F-1 through F-4, G-1 through G-6, H-1 through H-17; subsistence use designated areas (specifically the Sisoalik Spit Subsistence Use Area, the Kobuk-Selawik Lakes Subsistence Use Area, the Cape Espenberg/Goodhope River Subsistence Use Area, the Kobuk River Delta Subsistence Use Area, the Selawik River Delta Subsistence Use Area, the Maniilaq River/Ambler Lowlands Subsistence Use Area, the Inmachuk River Subsistence Use Area, the North Fork Squirrel River/Omar River Subsistence Use Area, the North Kivalina Coast Subsistence Use Area, the Onion Portage Subsistence Use Area, the Eschscholtz Bay Subsistence Use Area, the Elephant Point/Choris Peninsula Subsistence Use Area, the Kobuk River Sheefish/Chum

Salmon/Whitefish Subsistence Use Area, Wulik River Subsistence use Area, the Noatak River Subsistence Use Area, and the Upper Kivalina River Subsistence Use Area); important habitat designated areas; areas important to the study, understanding, or illustration of history, prehistory, and archeology; and technical edits to the CMP text.

## **II. DESIGNATED AREAS**

A district must have approved designated areas for subsistence use, important habitat, and history, prehistory, and archeology in order to develop enforceable policies applicable to those areas. *See* 11 AAC 114.250, 11 AAC 114.270, and the ACMP program description at §5.3.9.2. (submitted with the ACMP program amendment approved by NOAA's OCRM). The criteria for designating these areas are listed at 11 AAC 114.250(b), (g), (h). In addition, designated areas must be described or mapped at a scale sufficient to determine whether a use or activity is located within the area. *See* 11 AAC 114.270(g). To assist districts with the mapping of designated areas, the former OPMP developed mapping standards that are applied to all proposed coastal district management plan amendments. These standards are applied to ensure that all designated area maps meet the requirements of 11 AAC 114.250 and 11 AAC 114.270. In order for the former OPMP to recommend approval for designated areas, the district must have demonstrated that each designated area meets the above requirements and standards. A discussion follows regarding each disapproved designated area the NAB is mediating.

### **Subsistence**

The NAB's designated subsistence use area cannot be approved because the designation is too broad to meet the requirements of 11 AAC 114.250(g). 11 AAC 114.250(g) states that a "district may ... designate areas in which *a* subsistence use is an important use of coastal resources and designate such areas." (emphasis added).

The former OPMP provided coastal districts, including the NAB, with guidance and direction on how to designate, document, and map a subsistence use. The designated subsistence use areas are too broad because there is not a clear breakdown of the category of use. In addition, the subsistence use maps provided by the NAB in Appendix P designate subsistence uses outside of the coastal zone boundary.

The NAB also designates subsistence use areas in Appendix H. These subsistence use designations are sub-designations of subsistence use areas designated in Appendix P. The subsistence use areas mapped in Appendix H include a significant portion of federal land which, according to OCRM, is not allowed.

### **Important Habitat**

The NAB's designated important habitat areas cannot be approved for two reasons: 1) the areas address matters authorized under state law without documentation that the matter is not adequately addressed under state law, 2) the designated area maps do not meet the state's mapping requirements, and 3) the discussion of direct and significant impact on coastal waters, specifically for caribou calving grounds, is not directly tied to the area proposed for designation.

The proposed designated important habitat area is considered an "enforceable policy" under the definition at AS 46.40.210(8). 11 AAC 114.270(c)(3) requires that district enforceable policies must "not address a matter regulated or authorized by state or

federal law unless the enforceable policy relates to a matter of local concern as defined at AS 46.40.070(a)(2)(C).” NAB’s designated important habitat areas duplicate existing state authority without demonstrating the matter is not adequately addressed. For example, the NAB designates “...all anadromous waters in the coastal zone identified in the 2005 Fish Distribution Database (Appendix F), including a 1000-foot corridor on either side of the streams measured from the mean high water mark...”. The ADFG Fish Distribution Database Atlas is a matter authorized by state law and is the authority under which other state laws are implemented. The NAB’s designation duplicates existing ADF&G authority without demonstrating the matter is not adequately addressed.

In addition, the designated important habitat area maps do not meet the mapping requirements for the following reasons:

1. The legends do not state they are important habitat designated area maps, they do not list applicable enforceable policies, and they do not include the correct agency logos.
2. The maps designate areas on federal land.
3. The maps are not clear and concise as to what is actually being designated.
4. The maps include designations outside the coastal district boundary.
5. The maps are not backed up by written and scientific evidence that the areas have direct and significant impacts on coastal water and are biologically and significantly productive.

All onshore, non-federal areas in the NAB is designated for caribou habitat. The criteria for designating important habitat at 11 AAC 114.250(h) are that uses and activities within the designated areas have a direct and significant impact on coastal water and that the designated areas are shown by written scientific evidence to be significantly productive habitat. The NAB provides a discussion on how caribou calving grounds are biologically and significantly productive based on scientific evidence. The caribou calving grounds that are biologically and scientifically productive habitats as shown by written scientific evidence in the resource inventory and analysis are not located in the areas within the NAB’s coastal zone nor are a significant portion within the coastal district.

#### **History, Prehistory, and Archeology**

The NAB’s designated area for history, prehistory, and archeology can not be approved since there are no approved enforceable policies. The proposed enforceable policies applicable for the designated history, prehistory, and archeology area is not approvable (see enforceable policy discussion below). Because there is no state standard under 11 AAC 112 that addresses impacts from proposed projects within a designated history, prehistory, and archeology area, a coastal district must have an approvable enforceable policy in order for the designated area to be meaningful and applicable. Without an enforceable policy applicable to the proposed designated history, prehistory, and archeology area, the designation of the area is meaningless for compliance purposes, and therefore is not approvable.

### **III. ENFORCEABLE POLICIES**

A break down of each category of enforceable policies and a general discussion follows:

#### **Subsistence Use**

The subsistence use policies are not approvable because many of the policies address matters already covered under the subsistence state standard at 11 AAC 112.270 which addresses the avoidance and minimization of impact to subsistence uses of coastal resources within designated subsistence use areas. NAB has not demonstrated, pursuant to AS 46.40.070(a)(2)(C) and 11 AAC 114.270(e), that the matters are not adequately addressed by the subsistence state standard. Policy A-2 addresses access to the subsistence use areas. Enforceable policies for subsistence use are only applicable within the designated area. Therefore, this policy is not approvable because it does not flow from the state standard at 11 AAC 112.270 and does not comply with 11 AAC 114.270(a)(1). Policies A-3 and A-5 address the availability of subsistence resources. Availability of subsistence resources is outside the purview of the ACMP. The Alaska Department of Fish and Game and the Federal Subsistence Board is authorized to address the harvest and availability of fish and game resources. The Subsistence State Standard simply tries to protect identified subsistence uses from reasonably foreseeable impacts from proposed projects in identified subsistence use areas.

#### **Important Habitat**

At the most basic level, all of the enforceable policies for important habitat are not approvable under 11 AAC 114.250 and 11 AAC 114.270. These regulations require that an approved designated area must exist before a district can draft enforceable policies in this area. 11 AAC 114.270 also requires that a description or map developed under that subsection must be referenced in the applicable enforceable policy. The NAB does not have an approved designated area for important habitat for the reasons stated above, and, as a result, the NAB enforceable policies cannot be approved.

In addition, the important habitat policies are not approvable for the following reasons. First, some policies duplicate the authority of AS 41.14.840, AS 41.14.870, AS 46.03, and 18 AAC 70 that provides protection to fish and wildlife habitat. In addition, the State Habitat Standard at 11 AAC 112.300 already addresses certain aspects of impacts to fish habitat. The NAB has not demonstrated, pursuant to AS 46.40.070(a)(2)(C) and 11 AAC 114.270(e), that the important habitat is not adequately protected by these authorities. Third, many policies address areas adjacent to designated important fish habitat. Enforceable policies for important habitat are only applicable within the designated area. Therefore, these policies are not approvable because they do not flow from the state standard at 11 AAC 112.300 and do not comply with 11 AAC 114.270(a)(1).

#### **History, Prehistory, and Archeology**

The history, prehistory, and archeology policies are not approvable because they are neither clear nor concise as to the activities and persons affected by the policy and the requirements of the policy in accordance with AS 46.40.070(a)(2)(A) and 11 AAC 114.270(e)(1). In addition, the former OPMP made suggestion on both June 6, 2006, and

September 19, 2006, which would have made these policies approvable; however, the NAB chose not to make the recommended changes. Therefore, these policies can not be approved.

### **Natural Hazards**

There were two proposed natural hazards policies (D-1 through D-2). These policies are not approvable because they address a matter that is already adequately addressed by the Natural Hazards State Standard at 11 AAC 112.210. The Natural Hazards State Standard at 11 AAC 112.210 (c) reads:

Development in a natural hazard area may not be found consistent unless the applicant has taken appropriate measures in the siting, design, construction, and operation of the proposed activity to protect public safety, services, and the environment from potential damage caused by known natural hazards.

This Natural Hazards State Standard applies in all areas designated as a natural hazard including areas designated by the NAB. In addition, "appropriate measures in the siting, design, construction, and operation of the proposed activity" is further defined in 11 AAC 112.210(d).

In addition, natural hazard policy D-1 attempts to manage impacts to water quality and habitat that is already addressed by various state and federal laws including AS 41.14.840, AS 41.14.870, 18 AAC 60, and 18 AAC 70. The state habitat standard at 11 AAC 112.300 also addresses certain aspects of impacts to habitat. The NAB has not demonstrated, pursuant to AS 46.40.070(a)(2)(C) and 11 AAC 114.270(e) that the matter addressing impacts to habitat is not adequately addressed.

DCOM made recommendations to the NAB on June 6 2006, that would have made natural hazard policy D-2 approvable; however, the NAB chose not to make the recommended changes. Therefore, this policy can not be approved.

### **Coastal Development**

The coastal development policy is not approvable because the policy is neither clear nor concise as to the activities and persons affected by the policies and requirements of the policies in accordance with AS 46.40.070(a)(2)(A) and 11 AAC 114.270(e)(1).

### **Utility Routes and Facilities and Transportation Routes and Facilities**

The utility routes and facilities and transportation routes and facilities are not approvable because they address a matter that is already adequately addressed by the Utility Routes and Facilities State Standard at 11 AAC 112.240 and the Transportation Routes and Facilities State Standard at 11 AAC 112.280. The NAB has not shown, pursuant to AS 46.40.070(a)(2)(C) and 11 AAC 114.270(e), that the matter is not adequately addressed. The Utility Routes and Facilities and the Transportation Routes and Facilities State Standards do not require designated areas and are applicable through the coastal zone as appropriate. In addition, policies F-1 and F-2 address matters already addressed by the habitat state standard at 11 AAC 112.300.

### **Energy Facilities**

The energy facilities policies are not approvable for the following reasons. First, the energy facilities policies address activities that do not flow from a use or activity identified in 11 AAC 112.200-112.240, 112.260-280, or 114.250 (b)-(i), and do not comply with 11 AAC 114.270(a) and *The Alaska Coastal Management Program as amended June 2, 2005* (approved by OCRM December 29, 2005). Second, many of the proposed policies address activities already addressed by the state energy facility at 11 AAC 112.230, the state habitat standard at 11 AAC 112.300, and under the state's authority at AS 41.14.840 and AS 41.14.870. The district has not demonstrated pursuant to AS 46.40.070(a)(2)(C) and 11 AAC 114.270(e) that the matters are not adequately addressed under these authorities. Third, oil and gas leasing are considered "uses of state concern" as defined at AS 46.40.210. Under 46.40.060, the district has not demonstrated that this policy does not arbitrarily or unreasonably restrict a use of state concern.

### **Conclusion**

For the most part, the NAB's proposed enforceable policies duplicate, restate, or incorporate by reference statutes and administrative regulations adopted by state or federal agencies, or address matters regulated by state or federal law that are not matters of local concern, or do not otherwise meet the requirements in AS 46.40.070. Each of the policies being addressed by this mediation cannot be approved for one or more of these reasons.

### **IV. SOLUTION**

Components of the NAB's coastal management plan do not meet the requirements of the regulations. The Division of Coastal and Ocean Management (DCOM) can only approve the unapproved portions of the NAB's coastal management plan if the NAB makes substantial changes to comply with the regulations and mapping requirements, as described above.

### **V. CONCLUSION**

The statewide standards listed in 11 AAC 112 are designed to be broad standards and are meant to be applied by resource agencies as well as coastal districts during a project's consistency review. Because these standards are so broad, it is only in rare circumstances that the interests of coastal districts may not be addressed by a statewide standard. This is why the regulations allow districts to develop enforceable policies under specific circumstances. The districts may continue to review projects and advise the state reviewing agency of the issues that were once covered by former district policies, yet under the current ACMP laws, many of these policies simply cannot be written into individual district plans. Such is the case with the unapproved portions of the NAB's coastal management plan.

**HB**

**256**

# FISCAL NOTE

**STATE OF ALASKA**  
**2008 LEGISLATIVE SESSION**

Fiscal Note Number: \_\_\_\_\_  
 Bill Version: CSHB 256(RES)  
 () Publish Date: \_\_\_\_\_

Identifier (file name): HB256CS(RES)-DFG-DWC-02-12-08 Dept. Affected: Fish and Game  
 Title: Active Game Management/Airborne Shooting RDU: Wildlife Conservation  
 Component: Wildlife Conservation  
 Sponsor: Rules by Request of the Governor  
 Requester: House Judiciary Committee Component Number: 473

**Expenditures/Revenues** (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

	Appropriation Required	Information						
		FY 2009	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
<b>OPERATING EXPENDITURES</b>								
Personal Services								
Travel								
Contractual								
Supplies								
Equipment								
Land & Structures								
Grants & Claims								
Miscellaneous								
<b>TOTAL OPERATING</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

<b>CAPITAL EXPENDITURES</b>								
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<b>CHANGE IN REVENUES ( )</b>								
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**FUND SOURCE** (Thousands of Dollars)

1002 Federal Receipts								
1003 GF Match								
1004 GF								
1005 GF/Program Receipts								
1037 GF/Mental Health								
Other Interagency Receipts								
<b>TOTAL</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

Estimate of any current year (FY2008) cost: 0.0

**POSITIONS**

Full-time								
Part-time								
Temporary								

**ANALYSIS:** (Attach a separate page if necessary)

Passage of this bill will not have any fiscal impact on the Department of Fish and Game.

Prepared by: Doug Larsen, Director  
 Division: Wildlife Conservation  
 Approved by: Denby Lloyd, Commissioner  
Department of Fish and Game

Phone 465-4191  
 Date/Time 2/14/08 8:00 AM  
 Date 2/14/2008



# LEGAL SERVICES

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LEGISLATIVE AFFAIRS AGENCY  
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Deliveries to: 129 6th St., Rm. 329

## MEMORANDUM

February 11, 2008

**SUBJECT:** Effective date of CSHB 256(RES)  
(Work Order No. 25-GH1076\C)

**TO:** Representative Craig Johnson  
Co-Chair of the House Resources Committee

**FROM:** Jack Chenoweth  
Assistant Revisor

This was introduced into the first session as a bill with a "July 1, 2007" effective date, and the House Resources Committee, in its recent deliberations, did not see fit to delete or modify that date. Please consider asking the next committee of referral to consider an effective date change for the measure or preparing an amendment to make a change when the measure is debated on the floor.

JBC:ljw  
08-078.ljw

Enclosure

**CS FOR HOUSE BILL NO. 256(RES)**

**IN THE LEGISLATURE OF THE STATE OF ALASKA**

**TWENTY-FIFTH LEGISLATURE - SECOND SESSION**

**BY THE HOUSE RESOURCES COMMITTEE**

**Offered:**

**Referred:**

**Sponsor(s): HOUSE RULES COMMITTEE BY REQUEST OF THE GOVERNOR**

**A BILL**

**FOR AN ACT ENTITLED**

1 **"An Act relating to active game management and to the airborne or same day airborne**  
2 **taking of certain game animals; making conforming amendments; and providing for an**  
3 **effective date."**

4 **BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:**

5 **\* Section 1. AS 08.54.750(f) is amended to read:**

6 (f) Notwithstanding (b) of this section, a registered guide-outfitter who is  
7 registered in three guide use areas may also register for and conduct big game hunting  
8 services for wolf, black bear, brown bear, or grizzly bear in guide use areas within a  
9 game management unit or portion of a game management unit where the Board of  
10 Game has identified predation by wolf, black bear, brown bear, or grizzly bear as a  
11 cause of the depletion of a [BIG] game [PREY] population or a reduction of the  
12 productivity of a [BIG] game [PREY] population that is the basis for the establishment  
13 of a [AN INTENSIVE MANAGEMENT] program under AS 16.05.255(f) in the  
14 game management unit or portion of the game management unit or for the declaration

1 of the biological emergency in the game management unit or portion of the game  
 2 management unit. A registered guide-outfitter may only conduct hunts in a guide use  
 3 area under this subsection for the big game species identified by the Board of Game as  
 4 the cause of the depletion or reduction of productivity of a [BIG] game [PREY]  
 5 population.

6 \* Sec. 2. AS 16.05.050(b) is amended to read:

7 (b) The commissioner shall annually submit a report to the Board of Game  
 8 regarding the department's implementation during the preceding three years of  
 9 [INTENSIVE MANAGEMENT] programs that have been established by the board  
 10 under AS 16.05.255(f) [AS 16.05.255] for identified [BIG] game [PREY] populations.

11 \* Sec. 3. AS 16.05.255(e) is repealed and reenacted to read:

12 (e) The Board of Game shall identify moose, caribou, and deer populations  
 13 that are important for providing for a high level of human harvest and shall establish  
 14 objectives for human harvest and population size of the identified populations.

15 \* Sec. 4. AS 16.05.255(f) is repealed and reenacted to read:

16 (f) The Board of Game shall adopt regulations to achieve the objectives  
 17 established under (e) of this section for human harvest and population size of the  
 18 identified moose, caribou, and deer populations, including, as it considers advisable,  
 19 seasons and bag limits, and regulations establishing management actions conducive to  
 20 achieving the objectives. If an identified moose, caribou, or deer population is not  
 21 meeting the established objectives, the board shall adopt regulations it considers  
 22 advisable to restore the population's productivity and increase human harvest,  
 23 including active management measures and programs. However, nothing in (e) of this  
 24 section or this subsection requires the board to establish that human harvest is the only  
 25 beneficial use of moose, caribou, and deer populations or precludes the board from  
 26 establishing specific areas exclusively for other beneficial uses of moose, caribou, and  
 27 deer populations.

28 \* Sec. 5. AS 16.05.255(j) is repealed and reenacted to read:

29 (j) In this section,

30 (1) "active management" includes predator control;

31 (2) "providing for a high level of human harvest" means allowing

1 allocation of a sufficient portion of the harvestable surplus of a game population to  
 2 achieve a high probability of success for human harvest of the game population based  
 3 on biological capabilities of the population and considering all hunter demand.

4 \* Sec. 6. AS 16.05.340(a)(15) is amended to read:

5 (15) Nonresident big game tags

6 A nonresident may not take a big game animal without previously purchasing a  
 7 numbered, nontransferable, appropriate tag, issued under this paragraph. The tag must  
 8 be affixed to the animal immediately upon capture and must remain affixed until the  
 9 animal is prepared for storage, consumed, or exported. A tag issued but not used for an  
 10 animal may be used to satisfy the tagging requirement for an animal of any other  
 11 species for which the tag fee is of equal or less value.

- 12 (A) Bear, black, each ..... 225
- 13 (B) Bear, brown or grizzly, each ..... 500
- 14 (C) Bison, each ..... 450
- 15 (D) Caribou, each ..... 325
- 16 (E) Deer, each ..... 150
- 17 (F) Elk, each ..... 300
- 18 (G) Goat, each ..... 300
- 19 (H) Moose, each ..... 400
- 20 (I) Sheep, each ..... 425
- 21 (J) Wolf, each ..... 30

22 A nonresident is not required to have a nonresident wolf tag to take a wolf in a  
 23 game management unit if the Board of Game has adopted a [AN INTENSIVE  
 24 MANAGEMENT] program under AS 16.05.255(D) [AS 16.05.255] for all or a  
 25 portion of the game management unit.

- 26 (K) Wolverine, each ..... 175
- 27 (L) Musk oxen, each ..... 1,100

28 \* Sec. 7. AS 16.05.340(a)(21) is amended to read:

29 (21) Nonresident alien big game tags

- 30 (A) Bear, black, each ..... 300
- 31 (B) Bear, brown or grizzly, each ..... 650

1 (C) Bison, each ..... 650  
 2 (D) Caribou, each ..... 425  
 3 (E) Deer, each ..... 200  
 4 (F) Elk, each ..... 400  
 5 (G) Goat, each ..... 400  
 6 (H) Moose, each ..... 500  
 7 (I) Musk oxen, each ..... 1,500  
 8 (J) Sheep, each ..... 550  
 9 (K) Wolf, each ..... 50

10 A nonresident alien is not required to have a nonresident alien wolf tag to take  
 11 a wolf in a game management unit if the Board of Game has adopted a [AN  
 12 INTENSIVE MANAGEMENT] program under AS 16.05.255(f)  
 13 [AS 16.05.255] for all or a portion of the game management unit.

14 (L) Wolverine, each ..... 250

15 \* Sec. 8. AS 16.05.783(a) is amended to read:

16 (a) A person may not shoot or assist in shooting a free-ranging wolf or  
 17 wolverine, or brown bear the same day that the [A] person has been airborne.  
 18 However, the Board of Game may authorize a predator control program [AS PART  
 19 OF A GAME MANAGEMENT PLAN] that involves airborne or same day airborne  
 20 shooting of wolves, wolverines, or brown bears if the board determines that the  
 21 program would be conducive to achieving the objectives established for human  
 22 harvest or population size of a moose, caribou, or deer population identified  
 23 under AS 16.05.255(e) or would be conducive to the health of a predator  
 24 population, and if the program is limited to the area necessary for that purpose  
 25 [HAS DETERMINED BASED ON INFORMATION PROVIDED BY THE  
 26 DEPARTMENT

27 (1) IN REGARD TO AN IDENTIFIED BIG GAME PREY  
 28 POPULATION UNDER AS 16.05.255(g) THAT OBJECTIVES SET BY THE  
 29 BOARD FOR THE POPULATION HAVE NOT BEEN ACHIEVED AND THAT  
 30 PREDATION IS AN IMPORTANT CAUSE FOR THE FAILURE TO ACHIEVE  
 31 THE OBJECTIVES SET BY THE BOARD, AND THAT A REDUCTION OF

1 PREDATION CAN REASONABLY BE EXPECTED TO AID IN THE  
2 ACHIEVEMENT OF THE OBJECTIVES; OR

3 (2) THAT A DISEASE OR PARASITE OF A PREDATOR  
4 POPULATION

5 (A) IS THREATENING THE NORMAL BIOLOGICAL  
6 CONDITION OF THE PREDATOR POPULATION; OR

7 (B) IF LEFT UNTREATED, WOULD SPREAD TO OTHER  
8 POPULATIONS].

9 \* **Sec. 9.** AS 16.05.783(b) is amended to read:

10 (b) This section does not apply to

11 (1) a person who was airborne the same day if that person was airborne  
12 only on a regularly scheduled commercial flight; or

13 (2) a person [AN EMPLOYEE OF THE DEPARTMENT] who [, AS  
14 PART OF A GAME MANAGEMENT PROGRAM,] is authorized under powers  
15 and duties in AS 16.05.050 to take wolves, wolverines, or brown bears [TO  
16 SHOOT OR TO ASSIST IN SHOOTING WOLF, WOLVERINE, FOX, OR LYNX  
17 ON THE SAME DAY THAT THE EMPLOYEE HAS BEEN AIRBORNE].

18 \* **Sec. 10.** AS 16.05.783(f) is amended by adding a new paragraph to read:

19 (3) "shooting" does not include the administration of tranquilizers or  
20 other drugs intended to be nonlethal.

21 \* **Sec. 11.** AS 16.05.255(g), 16.05.783(d), 16.05.783(e), and 16.05.783(f)(2) are repealed.

22 \* **Sec. 12.** The uncodified law of the State of Alaska is amended by adding a new section to  
23 read:

24 TRANSITION: REGULATIONS. The Board of Game may proceed to adopt  
25 regulations necessary to implement the changes made by this Act. The regulations take effect  
26 under AS 44.62 (Administrative Procedure Act), but not before the effective date of the  
27 statutory changes.

28 \* **Sec. 13.** Section 12 of this Act takes effect immediately under AS 01.10.070(c).

29 \* **Sec. 14.** Except as provided in sec. 13 of this Act, this Act takes effect July 1, 2007.

adopted  
2/5/08

25-GH1076\A.2  
Kane  
2/5/08

AMENDMENT #2

OFFERED IN THE HOUSE  
TO: HB 256

BY REPRESENTATIVE SEATON

- 1 Page 2, line 23, following "programs.":
- 2       Insert "However, nothing in (e) of this section or this subsection requires the board to
- 3 establish that human harvest is the only beneficial use of moose, caribou, and deer
- 4 populations or precludes the board from establishing specific areas exclusively for other
- 5 beneficial uses of moose, caribou, and deer populations."

CHANGES TO  
HB 256\A

AMENDMENT #4

OFFERED IN THE HOUSE

BY REPRESENTATIVE GATTO

TO: HB 256 (25-GH1076A)

Page 5, line 9:

Delete "an employee of the department"

Insert "a person"

adopted  
2/08/08

# FISCAL NOTE

**STATE OF ALASKA**  
**2008 LEGISLATIVE SESSION**

Fiscal Note Number: \_\_\_\_\_  
 Bill Version: HB 256  
 () Publish Date: \_\_\_\_\_

Identifier (file name): HB256-DFG-DWC-01-08-08 Dept. Affected: Fish and Game  
 Title: Active Game Management/Airborne Shooting RDU: Wildlife Conservation  
 Component: Wildlife Conservation  
 Sponsor: Rules by Request of the Governor  
 Requester: House Resources Committee Component Number: 473

**Expenditures/Revenues** (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below

	Appropriation Required	Information						
		FY 2009	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
<b>OPERATING EXPENDITURES</b>								
Personal Services								
Travel								
Contractual								
Supplies								
Equipment								
Land & Structures								
Grants & Claims								
Miscellaneous								
<b>TOTAL OPERATING</b>		<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

<b>CAPITAL EXPENDITURES</b>								
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<b>CHANGE IN REVENUES ( )</b>								
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**FUND SOURCE** (Thousands of Dollars)

1002 Federal Receipts								
1003 GF Match								
1004 GF								
1005 GF/Program Receipts								
1037 GF/Mental Health								
Other Interagency Receipts								
<b>TOTAL</b>		<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

Estimate of any current year (FY2008) cost: 0.0

**POSITIONS**

Full-time							
Part-time							
Temporary							

**ANALYSIS:** (Attach a separate page if necessary)

Passage of this bill will not have any fiscal impact on the Department of Fish and Game.

Prepared by: Doug Larsen, Director  
 Division: Wildlife Conservation  
 Approved by: Denby Lloyd, Commissioner  
Department of Fish and Game

Phone: 465-4191  
 Date/Time: 1/8/08 4:00 PM  
 Date: 1/8/2008

**SARAH PALIN**  
GOVERNOR

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**STATE OF ALASKA**  
**OFFICE OF THE GOVERNOR**  
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May 10, 2007

The Honorable John Harris  
Speaker of the House  
Alaska State Legislature  
State Capitol, Room 208  
Juneau, AK 99801-1182

Dear Speaker Harris:

Under the authority of art. III, sec. 18, of the Alaska Constitution, I am transmitting a bill relating to active game management. In general, the bill simplifies and clarifies the state's current intensive management law for big game and the state's "same day airborne hunting" law. This bill harmonizes these two currently inconsistent laws, and makes both laws more workable and consistent with other important game management laws, such as the state's subsistence law.

This legislation will provide direction to state regulators and biologists in accordance with the state's constitutional requirements to manage game under the maximum use, maximum benefit, common use, and sustained yield principles. Currently, in almost all cases, the Board of Game (board) must adopt a predatory control program before they can reduce hunting of an identifiable wildlife population, unless the board makes findings or there is an emergency action (both of which are complex and easily challenged.) The bill eliminates that unworkable process.

The bill clarifies statutory language requiring the board to identify moose, caribou, and deer populations that are important for high levels of harvest by humans, so that these important game herds will be managed for both abundant numbers and abundant harvest opportunities. This should assist courts and the public in understanding the goals and requirements of active management programs.

In addition, the bill defines the new term "active management", which is used in place of "intensive management." It also would eliminate several current definitions that have proven to be problematic for both the board and courts.

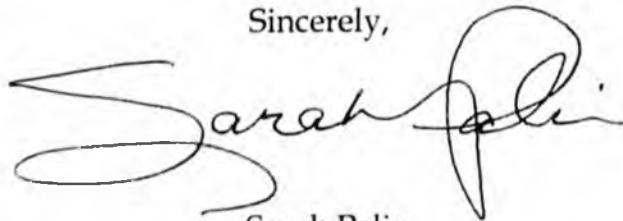
The Honorable John Harris  
May 10, 2007  
Page 2

This legislation eliminates the complex and problematic process the board now has to go through to authorize game management programs involving airborne or same day airborne shooting. It also makes it clear that Department of Fish and Game employees are allowed to shoot animals for public safety, scientific, or other legitimate governmental purposes on the same day that the employees have been airborne.

In summary, the bill takes two laws that were written to achieve almost exactly opposite purposes and rewrites them so that the state's game managers, courts, and public will have better tools to work together. The important principle of limiting use of airborne and same day airborne shooting of large predators is retained, while the process for conducting game management programs critical to meeting several of the state's constitutional mandates is made simpler, more workable, and legally defensible.

I urge your prompt and favorable consideration of the measure.

Sincerely,

A handwritten signature in black ink that reads "Sarah Palin". The signature is fluid and cursive, with a large initial "S" and a distinct "P" for "Palin".

Sarah Palin  
Governor

Enclosure

**Applicability of subsection (a).** — Subsection (a) applies to allocation of fish resources between two commercial fisheries. *Pennabio Mktg. Ass'n v. State*, 817 P.2d 937 (Alaska 1991).

In adopting a regulation for the allocation of harvestable treaty salmon, the Board of Fisheries had discretion to treat guided and unguided sport fishing as a single category and to make a separate allocation to the commercial trolling fishery. *Rutter v. State, Bd. of Fisheries, Dep't of Fish & Game*, 965 P.2d 1007 (Alaska 1998).

If a cooperative fishery and an open fishery use the same type of gear in the same administrative area to take the same fishery resource, an allocation of resources to the cooperative would be an impermissible allocation within a single fishery under subsection (c) of this section. *Grunert v. State*, 109 P.3d 924 (Alaska 2005).

**Allocation criteria addressed in earlier proposal.** — Where the Board of Fisheries considered each of the seven allocation criteria for sockeye salmon with an earlier proposal and incorporated its previous deliberations on that proposal into a later proposal, the board properly addressed the allocation criteria for sockeye salmon under subsection (c). *Stepovak-Shumagin Set Net Ass'n v. State, Board of Fisheries*, 886 P.2d 632 (Alaska 1994).

**Regulation delaying the commercial salmon fishing season** was consistent with and reasonably necessary for purposes of conservation and development, was not arbitrary and was supported by reasonable objectives. *Stepovak-Shumagin Set Net Ass'n v. State, Board of Fisheries*, 886 P.2d 632 (Alaska 1994).

**Regulation upheld.** — In promulgating a regulation governing commercial herring fishing in Norton Sound, the board pursued a permissible objective (allocation of a fishery resource between resident and nonresident fishermen) and employed means within its powers, and the regulation itself was reasonable and nonarbitrary. *State v. Habert*, 743 P.2d 392 (Alaska Ct. App. 1987), *aff'd*, 803 P.2d 863 (Alaska 1990).

Where a mixed stock regulation was the product of a four-day meeting in which the fisheries board took a hard look at the issues and justified its decisions through written findings, and where the regulation was not so indefinite or uncertain that it could be overturned as facially vague or devoid of substance, it was a valid exercise of discretion. *Native Village of Elm v. State*, 990 P.2d 1 (Alaska 1999).

**Regulation held invalid because inconsistent with statutes.** — Regulation developed by the Board of Fisheries to identify customary and traditional uses of Cook Inlet salmon qualifying for subsistence priority and codified as 5 AAC 01.697 was held invalid because it was inconsistent with former subsection (b) and AS 16.05.940 and contrary to the legislature's intent in enacting the 1976 subsistence law, ch. 151, SLA 1976. *Madison v. Alaska Dep't of Fish & Game*, 696 P.2d 168 (Alaska 1985).

Applied in *Meier v. State, Bd. of Fisheries*, 739 P.2d 172 (Alaska Ct. App. 1987), *Tongass Sport Fishing Ass'n v. State*, 866 P.2d 1314 (Alaska 1994).

Quoted in *Interior State Aerial Ass'n v. State*, 16 P.3d 686 (Alaska 2001).

Cited in *Reynolds v. State*, 656 P.2d 1213 (Alaska Ct. App. 1982), *Langesater v. State*, 668 P.2d 1359 (Alaska Ct. App. 1983), *State v. Eluska*, 698 P.2d 174 (Alaska Ct. App. 1985).

**Sec. 16.05.253. Operation of stationary fishing gear.** (a) The Board of Fisheries may require a person who holds a limited entry permit or an interim-use permit under AS 16.43 to be physically present at a beach or riparian fishing site during the operation of net gear or other stationary fishing gear at the site, except when the permit holder is at or traveling to or from the location of

(1) a sale of fish caught in the gear; or

(2) other stationary gear of the permit holder.

(b) In this section, "fishing site" means fishing site as defined by the Board of Fisheries and includes any structure used for providing shelter in support of the operation of the net gear or other stationary fishing gear. (§ 1 ch 94 SLA 1982; am § 1 ch 19 SLA 1983)

**Sec. 16.05.255. Regulations of the Board of Game; management requirements.** (a) The Board of Game may adopt regulations it considers advisable in accordance with AS 44.62 (Administrative Procedure Act) for

(1) setting apart game reserve areas, refuges, and sanctuaries in the water or on the land of the state over which it has jurisdiction, subject to the approval of the legislature;

(2) establishing open and closed seasons and areas for the taking of game;

(3) establishing the means and methods employed in the pursuit, capture, taking, and transport of game, including regulations, consistent with resource conservation and development goals, establishing means and methods that may be employed by persons with physical disabilities;

(4) setting quotas, bag limits, harvest levels, and sex, age, and size limitations on the taking of game;

(5) classifying game as game birds, song birds, big game animals, fur bearing animals, predators, or other categories;

(6) methods, means, and harvest levels necessary to control predation and competition among game in the state;

(7) watershed and habitat improvement, and management, conservation, protection, use, disposal, propagation, and stocking of game;

(8) prohibiting the live capture, possession, transport, or release of native or exotic game or their eggs;

(9) establishing the times and dates during which the issuance of game licenses, permits, and registrations and the transfer of permits and registrations between registration areas and game management units or subunits is allowed;

(10) regulating sport hunting and subsistence hunting as needed for the conservation, development, and utilization of game;

(11) taking game to ensure public safety;

(12) regulating the activities of persons licensed to control nuisance wild birds and nuisance wild small mammals;

(13) promoting hunting and trapping and preserving the heritage of hunting and trapping in the state.

(b) [Repealed, § 12 ch 52 SLA 1986.]

(c) If the Board of Game denies a petition or proposal to amend, adopt, or repeal a regulation, the board, upon receiving a written request from the sponsor of the petition or proposal, shall in addition to the requirements of AS 44.62.230 provide a written explanation for the denial to the sponsor not later than 30 days after the board has officially met and denied the sponsor's petition or proposal, or 30 days after receiving the request for an explanation, whichever is later.

(d) Regulations adopted under (a) of this section must provide that, consistent with the provisions of AS 16.05.258, the taking of moose, deer, elk, and caribou by residents for personal or family consumption has preference over taking by nonresidents.

(e) The Board of Game shall adopt regulations to provide for intensive management programs to restore the abundance or productivity of identified big game prey populations as necessary to achieve human consumptive use goals of the board in an area where the board has determined that

(1) consumptive use of the big game prey population is a preferred use;

(2) depletion of the big game prey population or reduction of the productivity of the big game prey population has occurred and may result in a significant reduction in the allowable human harvest of the population; and

(3) enhancement of abundance or productivity of the big game prey population is feasibly achievable utilizing recognized and prudent active management techniques.

(f) The Board of Game may not significantly reduce the taking of an identified big game prey population by adopting regulations relating to restrictions on harvest or access to the population, or to management of the population by customary adjustments in seasons, bag limits, open and closed areas, methods and means, or by other customary means authorized under (a) of this section, unless the board has adopted regulations, or has scheduled for adoption at the next regularly scheduled meeting of the board regulations, that provide for intensive management to increase the take of the population for human harvest consistent with (e) of this section. This subsection does not apply if the board

(1) determines that intensive management would be

(A) ineffective, based on scientific information,

(B) inappropriate due to land ownership patterns; or

(C) against the best interest of subsistence uses; or

(2) declares that a biological emergency exists and takes immediate action to protect or maintain the big game prey population in conjunction with the scheduling for adoption of those regulations that are necessary to implement (e) of this section.

(g) The Board of Game shall establish population and harvest goals and seasons for intensive management of identified big game prey populations to achieve a high level of human harvest.

(h) [Repealed, 2000 Ballot Measure No. 6.]

(i) For the purpose of encouraging adults to take children hunting, the board shall establish annual hunting seasons in appropriate areas of the state for big game, other than bison and musk ox, that are open before schools start in the fall and before regular hunting seasons begin. Only a resident child accompanied by a resident adult or a child accompanied by the child's resident parent, resident stepparent, or resident legal guardian may take big game in an area where a season established under this subsection is in effect. The adult, parent, stepparent, or legal guardian who accompanies the child may only assist the child in taking big game. A big game

animal taken under this subsection must be counted against the bag limits of both the child and the adult, parent, stepparent, or legal guardian who accompanies the child. In this subsection,

(1) "adult" means an individual who is 21 years of age or older;

(2) "child" means an individual who is not more than 17 years of age and not younger than eight years of age.

(j) In this section,

(1) "harvestable surplus" means the number of animals that is estimated to equal the number of offspring born in a game population during a year less the number of animals required for recruitment for population maintenance and enhancement, when necessary, and the number of animals in the population that die from all causes, other than predation or human harvest, during that year;

(2) "high level of human harvest" means the allocation of a sufficient portion of the harvestable surplus of a game population to achieve a high probability of success for human harvest of the game population based on biological capabilities of the population and considering hunter demand;

(3) "identified big game prey population" means a population of ungulates that is identified by the Board of Game and that is important for providing high levels of harvest for human consumptive use;

(4) "intensive management" means management of an identified big game prey population consistent with sustained yield through active management measures to enhance, extend, and develop the population to maintain high levels or provide for higher levels of human harvest, including control of predation and prescribed or planned use of fire and other habitat improvement techniques.

(5) "sustained yield" means the achievement and maintenance in perpetuity of the ability to support a high level of human harvest of game, subject to preferences among beneficial uses, on an annual or periodic basis. (§ 3 ch 206 SLA 1975, am § 5 ch 151 SLA 1978; am §§ 10, 11 ch 132 SLA 1984; am §§ 4, 5, 12 ch 52 SLA 1986; am § 1 ch 6 SLA 1989; am § 2 ch 13 SLA 1994; am § 2 ch 54 SLA 1996; am §§ 4 — 6 ch 76 SLA 1998, am § 1 ch 20 SLA 2000; am § 1 2000 Ballot Measure No. 6; am § 1 ch 68 SLA 2001; am § 1 ch 132 SLA 2003, am § 4 ch 87 SLA 2005)

Revisor's notes. — Subsection (g) was enacted as (h) and paragraphs (1)(1), (2), and (5) were enacted as (g)(3)-(5), respectively, relettered in 1998, at which time former (g)(1) and (2) were renumbered as (h)(3) and (4), and relettered as (i) in 2000 and as (j) in 2001.

Former subsection (h) was enacted as (i), relettered in 2000. Subsection (i) was enacted as (j), relettered in 2001, at which time former subsection (i) was relettered as (j).

Cross references. — For restriction on maximum area of land that may be closed to multiple uses, without an act of the state legislature, see AS 38.06.300(a).

For legislative findings, in connection with the enactment of (e), (f), and (g)(3) and (4) [formerly (c)-(g)] of this section, see § 1, ch 13, SLA 1994 in the Temporary and Special Acts. For legislative findings relating to the 1998 amendment to paragraph (h)(4) [formerly (h)(4)] and the enactment of paragraphs (1)(1), (1)(2), and

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(c) It is an affirmative defense to a prosecution under (a) of this section that the person took the bear in defense of life or property if the person who took the bear shows by a preponderance of the evidence that

(1) the necessity for the taking was not brought about by harassment or provocation of the bear by the person who took the bear;

(2) the necessity for the taking was not brought about by the negligent disposal of garbage or the creation of a similar attractive nuisance by the person who took the bear; and

(3) the person exhausted all other practicable means to protect life and property before the bear was taken.

(d) Notwithstanding (a) — (c) of this section, the department may authorize the taking of a problem brown or grizzly bear within one-half mile of a solid waste disposal facility at any time, if the taking of the bear is necessary to protect the public and is consistent with sound game management principles.

(e) In this section

(1) "criminal negligence" has the meaning given in AS 11.81.900(a);

(2) "property" means

(A) a dwelling, permanent or temporary;

(B) an aircraft, boat, automobile, or other conveyance;

(C) a domestic animal;

(D) other property of substantial value necessary for the livelihood or survival of the owner;

(3) "solid waste disposal facility" means a facility for the disposal of solid waste, other than sewage, for which a prior authorization has been issued under AS 46.03.100 (§ 1 ch 64 SLA 1989; am § 1 ch 136 SLA 2004)

**Cross references.** — For penalties for class A misdemeanors, see AS 12.56.035(d)(6), 12.56.036, and 12.56.135(a).

**Effect of amendments.** — The 2004 amendment, effective July 1, 2004, substituted "prior authorization" for "permit" in paragraph (e)(3).

#### Sec. 16.05.783. Same day airborne hunting.

(a) A person may not shoot or assist in shooting a free-ranging wolf or wolverine the same day that a person has been airborne. However, the Board of Game may authorize a predator control program as part of a game management plan that involves airborne or same day airborne shooting if the board has determined based on information provided by the department

(1) in regard to an identified big game prey population under AS 16.05.255(g) that objectives set by the board for the population have not been achieved and that predation is an important cause for the failure to achieve the objectives set by the board, and that a reduction of predation can reasonably be expected to aid in the achievement of the objectives; or

(2) that a disease or parasite of a predator population

(A) is threatening the normal biological condition of the predator population; or

(B) if left untreated, would spread to other populations.

(b) This section does not apply to

(1) a person who was airborne the same day if that person was airborne only on a regularly scheduled commercial flight; or

(2) an employee of the department who, as part of a game management program, is authorized to shoot or to assist in shooting wolf, wolverine, fox, or lynx on the same day that the employee has been airborne.

(c) A person who violates this section is guilty of a misdemeanor, and upon conviction is punishable by a fine of not more than \$5,000, or by imprisonment for not more than one year, or by both. In addition, the court may order the aircraft and equipment used in or in aid of a violation of this section to be forfeited to the state.

(d) When the Board of Game authorizes a predator control program that includes airborne or same day airborne shooting, the board shall have the prerogative to establish predator reduction objectives and limits, methods and means to be employed, who is authorized to participate in the program, and the conditions for participation of individuals in the program.

(e) The use of state employees or state owned or chartered equipment, including helicopters, in a predator control program is prohibited without the approval of the commissioner.

(f) In this section,

(1) "free-ranging" means that the animal is wild and not caught in a trap or snare; and

(2) "game management program" means a program authorized by the Board of Game or the commissioner to achieve identified game management objectives in a designated geographic area. (§ 1 1996 Ballot Measure No. 3, am §§ 1 — 4 ch 2 SSSLA 1999; am § 2 ch 20 SLA 2000; am § 2 2000 Ballot Measure No. 6; am §§ 1, 2 ch 124 SLA 2003)

**Revisor's notes.** — Paragraph (f)(2) was enacted as (d)(3) and relettered as (d)(2) in 1999. Subsections (d) and (e) were enacted as (e) and (f) and relettered in 2003, at which time subsection (d) was relettered as (f).

**Effect of amendments.** — The first 2000 amendment, effective July 20, 2000, inserted "or agent" in two places in paragraph (b)(2).

The second 2000 amendment, effective January 4, 2001, by referendum deleted "or agent" following "employee" in two places in paragraph (b)(2).

The 2003 amendment, effective June 19, 2003, rewrote subsection (a) and added subsections (b) and (c).

**Sec. 16.05.785. Effect of failure to remove old markers.** If the Board of Fisheries by regulation uses department markers to establish waters closed to commercial fishing and the state fails to remove the old markers when new markers are posted to establish waters closed to commercial fishing, commercial fishing is expressly permitted in the waters between the new markers and the old

## Answers to Commonly Asked Questions about HB 256

### Submitted by:

**Douglas Larsen, Director**  
**Division of Wildlife Conservation**  
**Alaska Department of Fish and Game**  
**P.O. Box 115526**  
**Juneau, AK 99811-5526**

**Kevin Saxby**  
**Sr. Assistant Attorney General**  
**Alaska Department of Law**  
**1031 W. 4<sup>th</sup> Avenue, Suite 200**  
**Anchorage, AK 99501**

*1. Isn't the bill just a response to current litigation challenging Alaska's predator control programs?*

No, the bill was in draft well before any of the current lawsuits were filed. It was done in response to requests from several legislators to the Murkowski Administration that ADF&G and the Dept. of Law be tasked to suggest improvements to the Intensive Management law and the Same-day Airborne law. When the bill was completed, early in the Palin Administration, she agreed that it included improvements that she also supported, and ordered that it be introduced

*2. Doesn't the bill remove all requirements for science-based decision-making on predator control decisions?*

No, the Department's role as the Board's science advisor, among other things, is not affected in any way by this bill. There is no need to have individual directives to use science in specific statutes or for any particular Board decisional process because, under its general statutory authorities, the Department always produces all scientific data within its control that is relevant to any Board decision. The Department does not envision its role before the Board changing in any way as a result of this bill, nor does it envision any diminution of the Board's reliance on science.

*3. Doesn't the bill remove requirements for a careful planning process before predator control is initiated?*

This question is frequently asked, but it is deceptive. Much depends on what the questioner considers to be an adequate plan. Currently, the Department does prepare for the Board a detailed predation control implementation plan before predator control is begun, and a great deal of effort, data and public input goes into the creation of these plans. However, opponents argue that such plans are still not detailed enough, and a multi-year, much more expensive planning process involving lengthier public debate should be completed before any predator control may begin. The bill preserves what the state has always understood to be the legislative intent for predator control by requiring timely action to respond to prey population declines, supported by the same excellent planning efforts that are currently developed to support the Board's decisions.

*4. Doesn't the bill weaken the Same-day Airborne law?*

In several ways, the Same-day Airborne law is strengthened. For example, for the first time brown bears are added to the species protected under that law. Also, necessary changes are made so that ADF&G personnel will not run afoul of the law if they are required to dispatch nuisance or threatening wolves, wolverines or brown bears on the same day they have been in an aircraft. The use of tranquilizer guns and other non-lethal forms of "shooting" is also authorized for the first time. What some see as a weakened standard for same-day airborne predator control, the requirement that it be determined to be "conducive" to meeting population and harvest objectives, is important because it harmonizes the Same-day Airborne law with the Intensive Management law where, currently, they are essentially contradictory.

*5. Doesn't the bill make it less likely that intensive (or active) management measures will be adopted? I.E. doesn't it weaken the Intensive Management law?*

No, the bill simplifies the Intensive Management law down to its core principles and states those principles more clearly and forcefully. The Board will be required to identify moose, caribou and deer populations that are important to manage for high levels of human consumptive use and to set population and harvest objectives for those populations. For such populations, the Board will then have an affirmative duty to always manage that population to meet those objectives, including both times of abundance and times of depletion. If objectives are not being met, the Board will also have the obligation to adopt active management measures, including predator control, designed to meet those objectives. Problematic definitions and complicated requirements about what steps must be taken when have been eliminated, leaving the simple statutory duty to manage these important populations for abundance.

*6. How does this bill fit with the pending initiative on the Same day airborne law.*

As stated above, the bill was drafted and introduced because ADF&G and the Department of Law, with the governor's approval, made commitments to various legislators to submit language that improves the Intensive Management and Same-Day Airborne laws. The bill should stand or fall on that basis. It is a comprehensive effort to rewrite these two laws in a way that makes them both workable, while preserving the important principles which underlie each one. Legislators and possibly voters, will make up their own minds about whether Alaska's predator and prey management is better with the bill or without it.

## Some things to consider about predator control

- Wolves and bears are skilled predators, and may kill up to 80% of the moose or caribou that die each year.
- Predator control programs are active on less than 10% of the state's land mass.
- Predator control is a regulated effort to reduce the number of wolves and bears in order to increase the number of moose or caribou.
- Predator control is not hunting. Only authorized individuals may participate, and fair chase standards do not apply.
- There is no indication that wolf or bear control programs have had a permanent adverse effect on either local or statewide wolf or bear populations.
- ADF&G will continue to closely monitor the effectiveness of wolf and bear control as there is still much to learn.



2007-08 Predator Control Areas

**Wolf control is not allowed on most federal lands**

## Seeing positive trends

Areas with active predator control in 2007-08 include the upper Susitna, Talkeetna, Nelchina and Copper Basins; the McGrath area; the upper Yukon and Tanana Basins, and part of Cook Inlet.

Results from these five areas are preliminary but indicate the beginning of increased moose calf survival and moose population growth.



## Board of Game and the public process

Alaska's hunting and trapping regulations are made by seven people appointed by the governor and approved by the legislature. This independent group is the Alaska Board of Game.

The Board of Game listens to all concerned members of the public, along with local Fish & Game Advisory Committees, and ADF&G biologists, in their effort to promulgate regulations that respond to people's concerns, while also considering the need for long term conservation and sustainable harvest of game populations.

It is the Board of Game, under the Intensive Management Law, that directs ADF&G to undertake predator control.

## Continuing controversy

There will always be controversy surrounding predator control. Some people oppose the management of wildlife populations for human benefit, while others demand management strategies that allow hunters to harvest a higher percentage of wildlife annually.

## Different strategies

It is not expected that one single management approach will satisfy everyone. Therefore, the Board of Game directs ADF&G to use different management strategies in different parts of the state to provide for different values and demands.

## Long-term wildlife health

ADF&G is committed to maintaining healthy caribou and moose populations and healthy wolf and bear populations. The department will continue to manage Alaska's wildlife populations with the health of all wildlife, sustainable harvests, and conservation as guiding principles.

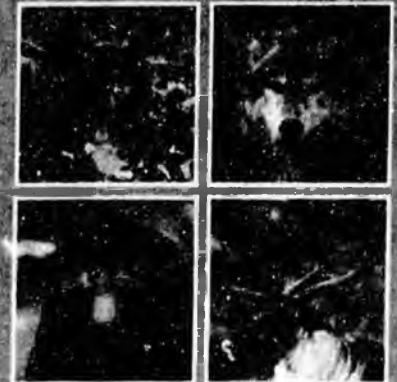
## Want to know more?

Visit [www.wildlife.alaska.gov](http://www.wildlife.alaska.gov). Click on the 'Management/Research' section, and scroll down to the link on 'Wolf Control in Alaska.'

The Alaska Department of Fish and Game printed this publication in December 2007 at a cost of \$0.24 per unit, to inform the public about predator management.

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## Understanding Intensive Management and Predator Control in Alaska



From the Division of Wildlife Conservation

of the Alaska Department of Fish & Game



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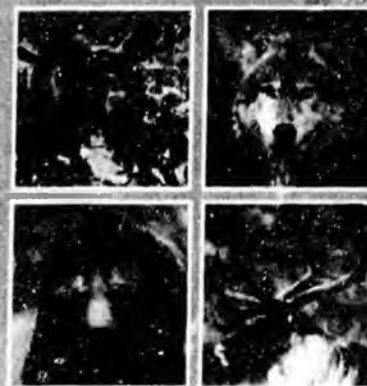
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From the Division of Wildlife Conservation

of the Alaska Department of Fish & Game



**When moose or caribou populations drop below a certain number, the intensive management law goes into effect.**

### First...

Alaska Department of Fish and Game biologists carefully study all the possible causes of declining moose or caribou numbers. They look at the quality of habitat, the health and reproductive rate of the herd, harvest levels by humans, and the impact of predators. They then undertake the action(s) that will most likely increase moose or caribou numbers.

### Their options include:

#### • Improving habitat

In some cases habitat improvement has involved controlled fire or vegetation crushing to generate new plant growth. However, reduced habitat quality or inadequate nutrition are not typically causes of moose or caribou population declines in Alaska.

#### • Reducing hunting

If hunting pressure is thought to be the cause of the decline, wildlife managers may reduce the season or impose strict harvest quotas. Some communities with declining moose populations have even voluntarily opted for moose hunting moratoriums.

#### • Easing predator trapping/hunting regulations

Where excess pressure from predators—typically wolves or bears—is creating the decline of moose or caribou populations, managers may increase the quota or relax restrictions on how people may hunt or trap predators

### Then...

If other methods are inadequate to reverse declining moose or caribou populations, and studies indicate significant predation from bears or wolves, the Board of Game may direct ADF&G to undertake predator control.

### Non-lethal methods tried

Various forms of non-lethal predator control have been tried in Alaska, including sterilization and relocation of wolves; offering predators alternative food sources during calving; and capturing and relocating bears. While these techniques have had moderate success, they are difficult, labor-intensive, expensive, and take biologists away from other important wildlife management work.

### Reduce but don't eliminate predators

Lethal predator control involves killing wolves, and sometimes bears. The intent is to reduce their numbers enough to allow moose or caribou populations to increase—but not to completely eliminate predators. The long-term goal is *increased* numbers of moose or caribou, *increased* harvest by humans, and *sustainable* populations of wolves and bears.

### In order for predator control to succeed...

- predation must be a major reason for the decline of the moose or caribou population;
- it must cover a large enough area;
- it must be continued long enough to allow for several years of moose and caribou calf survival;
- it must cover all species of predators affecting the moose or caribou population;
- harvest of prey populations by people must be reduced or eliminated; *and*
- there must be adequate habitat to support an expanding moose or caribou population.

*The long-term goal of predator control is to increase numbers of moose or caribou to allow for increased harvest by humans, while maintaining healthy and sustainable populations of wolves and bears.*



### A little history about...



### Intensive Management Law

Harvesting wild game is extremely important to many Alaskans. Participating in the hunt, helping with butchering, and sharing the benefits of economical, wild-grown meat are long-standing traditions in Alaska.

The Alaska Legislature recognized the importance of wild game meat to Alaskans when it passed the Intensive Management Law in 1994.

This law requires the Alaska Board of Game to identify moose and caribou populations that are especially important food sources for Alaskans—and to insure that these populations remain large enough to allow for adequate and sustained harvests by people.

If the moose or caribou populations drop below what the Alaska Board of Game determines is needed for continued harvests by people, the Board works with the Alaska Department of Fish and Game to undertake intensive management of that population, which may include predator control.



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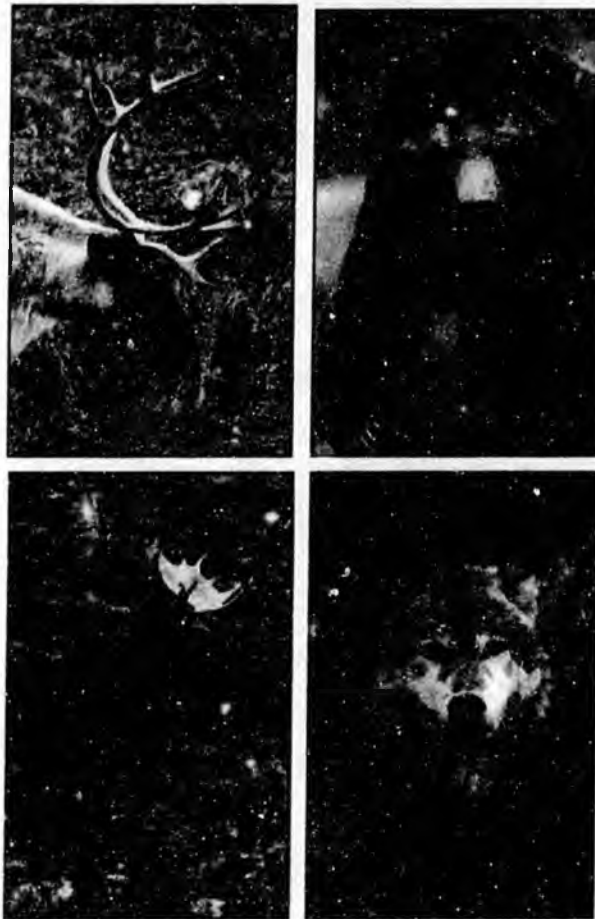
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# **Predator Management in Alaska**



**Alaska Department of Fish and Game  
Division of Wildlife Conservation  
November 2007**

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# Predator Management in Alaska

Alaska Department of Fish and Game  
November 2007

## Table of Contents

1.0 PURPOSE OF DOCUMENT.....	2
2.0 THE ISSUE.....	2
2.1 Definition of Predator Control .....	2
2.2 Alaska's Range of Values .....	3
2.3 Why and When Predator Control is Used .....	4
3.0 HISTORY .....	5
3.1 Pre-Statehood .....	5
3.2 Post-Statehood.....	5
4.0 LEGAL CONSIDERATIONS .....	5
4.1 Constitutional Mandate.....	5
4.2 Intensive Management.....	6
5.0 MAKING DECISIONS .....	6
5.1 Alaska Board of Game.....	6
5.2 Alaska State Legislature .....	7
5.3 Alaska Department of Fish and Game.....	7
5.4 Federal Management Authorities.....	8
6.0 THE ROLE OF SCIENCE .....	8
6.1 Predators and Prey .....	8
6.2 Monitoring and Managing Predators and Prey.....	9
6.3 Wildlife Surveys .....	9
6.4 Limiting Factors.....	10
6.5 Monitoring Habitat and Nutrition .....	12
6.6 Habitat Enhancement.....	13
6.7 Predator Control as a Management Tool.....	13
6.8 Can Predator Control Work?.....	14
6.9 Numbers of Predators Removed.....	15
6.10 Duration of Control .....	16
6.11 Alternatives to Lethal Predator Control.....	16
7.0 PREDATOR MANAGEMENT RESULTS.....	17
7.1 Pre-statehood Efforts.....	17
7.2 Post-statehood Efforts .....	18
7.3 Status of Current Programs.....	18
8.0 CONCLUSIONS .....	24
9.0 RESOURCES .....	25

## **1.0 PURPOSE OF DOCUMENT**

As the primary agency charged with managing resident wildlife populations in Alaska, the Alaska Department of Fish and Game (ADF&G) has a responsibility to provide the public with the best information regarding its management programs, including predator control. Continuing scientific, legal, and general public attention to predator management accentuates the need for ADF&G to inform Alaskans about their wildlife resources and how they are managed. These concerns are the impetus for this report.

This paper offers an overview of the social, legal, and biological bases for predator control in Alaska. It presents ADF&G's perspectives on predator management, lays out the reasons for specific wildlife management actions, describes the scientific information assembled by ADF&G that affects decisions on implementing predation control, and explains how ADF&G evaluates results. Abbreviated versions and other forms of this paper will be made available to help inform the public on this important issue. This document will be updated as new information and findings become available.

## **2.0 THE ISSUE**

### **2.1 Definition of Predator Control**

Big game species in Alaska, including predator populations, are affected by and managed primarily through regulated hunting and trapping. In contrast, predator control is a program used when other management techniques are not effective to reduce the limiting effects of predation on prey populations (e.g., moose, caribou, deer, Dall sheep, mountain goats). Predator control is intended to ultimately allow a higher sustainable harvest of prey in a particular area. The initial objective in a control program is a reduction (not elimination) in numbers of predators in the shortest possible time, in a specified area, followed by maintenance of predators at this temporarily lower level to enable the prey population to increase. After harvest and prey population goals set by the Alaska Board of Game (board) and ADF&G have been met, and predator populations have begun to increase in response to increased food resources, regulated hunting and trapping harvests of predators need to be sufficient to limit the growth of those predator populations. If these activities are insufficient, predator control programs may be reinstated.

Techniques used in predator control programs are determined based on what can be effective. For example, in many remote areas where ground access is difficult, the only effective method of reducing numbers of wolves is through the use of aircraft, in either land-and-shoot or aerial shooting. Land-and-shoot involves landing, exiting an aircraft, and shooting, whereas aerial shooting involves shooting from a flying aircraft.

Predator control is not the same as hunting and is not conducted under the same regulations as hunting or trapping. Hunting and trapping involves taking animals on a sustainable basis for food, to satisfy cultural needs, for monetary gain (trapping) and for recreation. They are governed by laws and regulations prescribing methods, means, and bag limits, and hunting involves the fair chase ethics of the individuals participating.

Hunting and trapping are broadly available to citizens who qualify for and purchase the appropriate licenses and tags. Take of predators by conventional hunting and trapping may be increased through liberalized seasons and bag limits to reduce the effects of predation on prey populations.

If conventional harvest is insufficient to produce the desired effect, predator control programs may be undertaken. Predator control is intended to reduce predator numbers while still retaining viable populations, and often employs methods not available to conventional hunters. These methods include: 1) aerial shooting (taking or attempting to take an animal by discharging a firearm from an airborne aircraft), 2) land-and-shoot (using an aircraft to locate an animal, landing the aircraft, exiting the aircraft, and immediately shooting or attempting to shoot the animal), and same-day-airborne shooting (taking an animal without waiting until after 3:00 a.m. following the day in which the person was airborne). Special permits are required to authorize members of the public using aircraft for predator control. Although the hides of wolves and bears taken under control programs must be salvaged, fair chase ethics are not applied to predator control programs.

Predator control is typically undertaken to benefit people (to maintain or increase the harvest of caribou and moose by people for food), not necessarily because it is needed to benefit moose, caribou, or deer populations. Predator control can be used to 1) allow prey populations to increase, 2) reallocate the harvest of prey by predators to people, 3) stabilize or prevent growth of predator populations, or 4) halt or reverse prey population declines due to hunting or other events.

Predator control programs are proposed by the public or ADF&G. Proposals are evaluated by ADF&G and may be adopted by the Alaska Board of Game. Programs are then designed by ADF&G and are conducted by ADF&G staff, permitted members of the public, or a combination of both. Budget constraints frequently preclude control activities conducted solely by ADF&G, so control programs currently depend on private citizen volunteers, who are issued permits to take wolves or bears using their own time and resources.

## **2.2 Alaska's Range of Values**

Citizen opinion varies widely about how wildlife should be managed. One of the most fundamental and controversy-generating differences of opinion is whether wildlife populations should be manipulated by people for human benefits.

Hunting is extremely important in Alaska. It is integral to lifestyles, traditional cultures, the economy, and basic food needs for many Alaskan families. Approximately 25,000 caribou (estimated) and 7,000 moose (reported) are harvested each year. Unlike in other states, many small communities in Alaska have few or no practical alternatives for meat. Frequently, these communities are not connected to road systems, are hundreds of miles from larger cities, have no commercial scale agriculture, and lack big grocery stores. Costs to acquire meat and other items from outside are high and, in many cases,

prohibitive. Wild game is a high quality, local, organic, free-range food source, and many Alaskans – even those who live on the road systems – prefer this meat over farmed or feedlot products. As a result, moose, caribou, deer, Dall sheep, and mountain goats provide an important food source for both rural and urban residents.

In this document, the term “prey” generally refers to moose and caribou. In much of Alaska, large predators kill far more prey than do hunters. Studies indicate that predators often take 70% to 80% of the moose and caribou that die each year.

In some situations, traditional hunting and trapping efforts have been able to adequately manage predator numbers. However, these efforts generally have the greatest effect in and around urban areas, where land is accessible and the number of hunters and trappers is high. Many rural areas of the state have lower numbers of hunters and trappers, more difficult and expensive access, and, in general, persistently low moose and caribou populations. These are also the areas whose residents rely most heavily on sustainable prey populations for food, where cash economies are not well-developed and income is limited, and food prices are the highest. In addition to remote terrain, poor weather conditions can make predator harvests in some years difficult if not impossible.

Citizen views range from believing that wildlife populations should not be manipulated for human benefits, and that people should harvest only the number of animals that the population can naturally replenish each year (the extreme range of that end of the spectrum includes people who believe wildlife should not be harvested at all), to a demand for manipulating most, if not all wildlife populations to allow people to harvest a high percentage of wildlife populations annually.

No single management approach can satisfy everyone in an environment with such radically opposed philosophies. ADF&G uses different management strategies in different parts of the state to provide for different values, interests, and demands. Some areas are managed aggressively – including the use of wolf and/or bear control – to maximize prey harvesting opportunities. Conventional management tools are used throughout most of the state to support hunting and wildlife viewing opportunities. Some areas are closed to hunting where wildlife viewing is the primary objective. ADF&G remains committed to maintaining viable predator and prey populations, and will continue to manage Alaska’s wildlife populations with long-term health, sustainable harvests, and conservation as guiding elements.

### **2.3 Why and When Predator Control is Used**

Low numbers of prey or low harvests are not necessarily biological, conservation, or management problems. Many parts of Alaska have prey populations at levels below what habitat can support. Low numbers, densities, or harvests become management problems when people want or need something different than what an area is providing. Predator control is considered when these conditions all occur: a) people request it, b) predation is limiting the number or harvest of prey by hunters, c) the habitat can support more prey animals, and d) other means of achieving prey population or harvest objectives are ineffective.

## **3.0 HISTORY**

### **3.1 Pre-Statehood**

Control of predation intended to increase human consumptive use of populations of moose, caribou, deer, and other game in Alaska began before contact with Europeans. Alaska Natives actively manipulated predator populations using a variety of techniques, including "wolf pupping" and "springbaits." The territorial government implemented a bounty in 1915, followed by federal programs to kill coyotes and wolves in the late 1920s. Federal agents and others used a number of methods to significantly reduce numbers of predators, including poisoning, statewide bounties, and aerial hunting (before the advent of the 1971 federal Airborne Hunting Act). Widespread predator control that began in the 1940s ended at statehood. (See Section 7.1 for more information about early control programs in Unit 13.)

### **3.2 Post-Statehood**

Limited programs involving shooting wolves from aircraft by state and/or private pilots or ground-based wolf removal methods have occurred intermittently for periods of about 2 – 6 years since the 1970s. Experimental programs to control bear predation have been conducted intermittently since the 1980s. (See Section 7.3 for more information about recent programs.)

Widely divergent opinions about the appropriateness of predator control led to ballot initiatives that prohibited shooting of wolves the same day airborne (1996) and a referendum that repealed legislative changes regarding aerial shooting of wolves by the public (2000). Both were substantially altered by legislative action within two years. Another initiative about same day airborne shooting by private pilots is scheduled for the 2008 primary election ballot in Alaska.

## **4.0 LEGAL CONSIDERATIONS**

### **4.1 Constitutional Mandate**

State government is charged with managing Alaska's fish and wildlife resources by Alaska's Constitution. Article VIII, Section 1 describes maximum use and development of natural resources, Article VIII, Section 2 directs that maximum benefit shall accrue to Alaskans through development of natural resources, and Article VIII, Section 3 reserves fish and game to the common use of all Alaskans. Specifically regarding fish and game management, Article VIII, Section 4 states: "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." This constitutional mandate is the state's primary directive for managing all fish and game species in Alaska, and is augmented by numerous state laws, contained largely in Title 16 of the Alaska Statutes (AS), and regulations, found mostly in Title V of the

Alaska Administrative Code (AAC). For precise wording of these legal documents, visit the state's website at: <http://www.law.state.ak.us/doclibrary/doclib.html>

"Sustained yield" is a basic principle of conservation specific to human use of resources. At its simplest, it means annual harvest should not exceed the annual regeneration of a resource, unless management goals encompass reducing a population to a lower, but still sustainable, level. This principle ensures harvests will not extirpate populations or drive species to extinction. This principle alone, however, provides little guidance where high levels of human use are mandated or desired.

#### **4.2 Intensive Management**

In 1994, the Alaska State Legislature (legislature) enacted AS 16.05.255, the "Intensive Management Law." The law requires the board to designate intensive management populations, for which human consumptive use is the highest priority use, and to set population and harvest objectives for those areas. If moose, caribou, or deer populations or harvests fail to meet management objectives, the board must consider and evaluate intensive management actions as a means of attaining the objectives.

The sequence of intensive management actions typically progresses from the more benign to the most aggressive. For instance, initial actions may include reducing or eliminating non-resident hunting, reducing or eliminating resident hunting, liberalizing hunting and trapping regulations for wolves and bears, and habitat improvement projects (primarily prescribed fire).

If these actions do not result or are unlikely to result in increased harvests of moose, caribou, or deer for food, the board will consider predator control, but only if habitat can support more of these animals and predation is a significant limiting factor. Predator control plans must consider the long-term viability of predator populations.

### **5.0 MAKING DECISIONS**

#### **5.1 Alaska Board of Game**

The board is Alaska's regulatory authority that adopts regulations to conserve and develop the state's wildlife resources and allocates uses of those resources. ADF&G works to actively monitor trends in wildlife populations, makes recommendations to the board to manage these populations, and implements regulatory programs established by the board.

The board consists of seven citizens appointed by the governor and confirmed by the legislature. The board promulgates hunting, trapping, and other regulations for wildlife, including predator management policy, through a well-established public process.

More than 80 local fish and game advisory committees, various organizations, and individual members of the public participate in the state's regulatory process every year.

Any individual or organization may propose new regulations or changes to existing regulations, and may offer oral and/or written testimony on regulatory proposals. For every proposal, ADF&G provides available scientific information pertinent to the issue and analyzes effects of proposals, if adopted. ADF&G also makes recommendations to the board to adopt or not adopt proposals. However, ADF&G normally does not make recommendations on proposals that affect allocation of a wildlife resource between competing user groups. Allocation issues are specifically the purview of the board, subject to pertinent legal review.

By law, the board considers all of the information presented to them in their decision-making process. The amount of data upon which the board bases its decisions is variable. Alaska is a huge state; it is financially impossible to amass detailed information on all wildlife populations in all areas. In some areas, the board and ADF&G must rely upon general information to make management decisions. In other areas, information is much more specific.

## **5.2 Alaska State Legislature**

The legislature may revise or create new statutes regarding wildlife management. Changes in state law necessarily affect how the board and ADF&G conduct their activities. The legislature delegates management authority to the board and ADF&G, who conduct their activities within the boundaries of state law and sometimes with specific legislative instructions.

## **5.3 Alaska Department of Fish and Game**

ADF&G is the state agency responsible for managing Alaska's fish and wildlife resources through constitutional mandate, state laws and regulations, and it is the government body wherein wildlife management expertise exists. The department contains the staff, resources, and local knowledge to implement and conduct management and research programs as well as make wildlife management recommendations on regulatory proposals to the board. Once the board has made regulatory decisions, it is up to ADF&G to implement the regulations.

ADF&G carries out a wide variety of programs to meet diverse public interests in the conservation and use of wildlife. These programs range from protected areas where only viewing is allowed (e.g., McNeil River, west of Cook Inlet) to intensive management of habitat, predation, and harvest to produce high yields of game species such as moose or caribou for consumptive use (e.g., the Fortymile River drainage north of Tok). Diverse public interests often preclude managing for multiple objectives in any given area, so management programs often differ among areas of the state.

ADF&G strives to determine when predators are preventing prey populations from either increasing or meeting minimum harvest targets. Additionally, ADF&G forecasts what effects predator control might have in given situations, and helps the public and the board

objectively evaluate results after predator control is initiated. ADF&G's primary goal is to manage and maintain healthy populations of all wildlife in perpetuity.

#### **5.4 Federal Management Authorities**

While the board and ADF&G have management authority over most of Alaska's wildlife resources, the federal government owns about 60% of the land in Alaska, including seventeen National Park Service (NPS) areas that cover 54 million acres, and a national wildlife refuge system that covers 69.5 million acres, administered by the U.S. Fish and Wildlife Service (USFWS). Both of these agencies have policies in place that either prohibit wolf and bear control or require elaborate procedural steps in order to implement predator control. As a matter of policy, the State of Alaska has not extended the wolf or bear control programs to these federal lands. Collectively, USFWS and NPS lands compose approximately one-third of Alaska's land area.

### **6.0 THE ROLE OF SCIENCE**

Biological information is used to estimate the size of predator and prey populations, detect if predators are limiting prey numbers or affecting prey population trends, forecast what effects predator control might have in given situations, and evaluate the results of predator control programs when they are implemented.

Science cannot answer the question of whether management programs should or should not be conducted – that is a value-based decision rendered from a mix of decision-making processes that involve the board, the legislature, and the public.

#### **6.1 Predators and Prey**

Wolves and bears are powerful and effective predators. ADF&G estimates that roughly 7,000 to 11,000 wolves, approximately 30,000 grizzly bears, and more than 100,000 black bears live in Alaska. Since statehood, populations of wolves and bears have been neither threatened nor endangered in Alaska. These predators' diets include large and small prey such as deer, caribou, moose, mountain goats, Dall sheep, fish, hares, and rodents. Bears also eat vegetation such as roots, berries, sedges, and grasses. Research in Alaska and Canada has shown that predation by wolves and bears can be an important factor in population declines or maintaining low densities of moose and caribou. ADF&G research has shown a single wolf consumes 12-13 moose in a typical year, and/or 30-40 caribou, mostly calves. But when faced with large predator populations of only one species, either wolves or bears, moose can reach relatively high densities.

Although caribou populations are subject to significant fluctuation, ADF&G estimates that more than one million currently live in Alaska in 32 herds. They eat lichens and other plant material and migrate widely between winter and summer ranges. About 175,000 – 200,000 moose live in Alaska and are widely distributed throughout the state in densities that vary markedly. Moose eat willows, shrubs, sedges, grasses, mushrooms, and aquatic plants during the summer and mostly woody twigs during the winter.

## **6.2 Monitoring and Managing Predators and Prey**

Managing wildlife populations requires biologists to monitor prey populations to ensure that the capacity of the habitat to support them is not exceeded. Surveys of predators help biologists understand predator-prey dynamics and enable them to ensure long-term viability of populations of both.

ADF&G uses a variety of tools to monitor predator and prey populations including aerial surveys, radio-tracking, harvest reports, mortality studies, calving surveys, body condition surveys, and habitat surveys. Hunting and trapping seasons and bag limits are constantly monitored and regularly revised to make sure populations are sustainable in the long term.

## **6.3 Wildlife Surveys**

A key element in managing wildlife is knowing or estimating the status and dynamics of given populations. Geography, vegetative cover, snow cover, funding, and many other factors frequently prevent biologists from directly counting individual animals across large areas. In addition to direct observations and reports from the public, wildlife managers use various field survey techniques including statistically rigorous population estimates to relative abundance indices and general counts to estimate animal numbers and relative proportions of sex and age classes of animals in a population. Carefully designed sampling in the form of composition surveys can help detect changes in population trends and reveal important herd characteristics, such as relative abundance of bulls and cows, numbers of calves per 100 cows, and trends in survival of calves. Different situations require different tools.

### Caribou

Caribou range widely through a typical year. Biologists generally rely on a subset of radio-collared animals to estimate annual productivity, survival, and movements. In summer after calving, caribou tend to form large aggregations in areas that are identified by aerial tracking of radio-collared animals. Groups are surveyed from low-flying aircraft, photographed, and counted. Counting the number of individuals in the aerial photographs provides a minimum herd size. Accounting for caribou not in the aggregations by radio-tracking and surveying adjacent areas allows estimations of overall population size.

Composition surveys are also important to caribou management. Biologists in helicopters examine a subset of animals and collect information on numbers of calves produced, survival of young and adult animals, and proportions of males to females, and young to older animals.

## Moose

The most common method of estimating moose numbers is a stratified random sample, where large areas, commonly Game Management Units (GMU), are divided into survey units and a randomly selected sample of these units is surveyed using small, slow-flying aircraft in winter. The resulting information is projected over entire GMUs or defined portions of GMUs to produce population estimates. Biologists also employ repeated count areas, i.e., counting animals on the same large plots of land year after year. Composition surveys provide information on numbers of calves produced, survival of young and adult animals, and proportions of males to females and young to older animals. Biologists also conduct habitat surveys.

## Wolves

Wildlife managers estimate wolf abundance by employing aerial surveys in winter, when snow cover and daylight are most favorable for observing wolf tracks. Wolf numbers may be estimated using reconnaissance techniques, or they may be surveyed using more intensive, expensive techniques that result in statistical estimates. Important data are also provided by trappers and hunters through sealing reports that include information about pack sizes, locations, and movements. Multiple reports of individual wolf packs received throughout the winter from trappers, hunters, and other members of the public help biologists estimate pack sizes, colors, and ranges over large management areas.

## Bears

Bears remain in dens over the winter and must be counted in the summer, when thick foliage and a lack of snow create challenges to observation. In non- or sparsely-forested habitats, bears may be observed from the air, and wildlife managers are able to estimate bear populations using mark-and-resight or aerial transect techniques. In habitats too dense for aerial surveys, biologists can use bait sites surrounded with barbed wire to collect individual bears' hair for DNA analysis. Along the Upper Susitna River as well as near McGrath, biologists have experimentally removed and relocated bears, which allowed for a minimum count of bears in those areas.

## **6.4 Limiting Factors**

### Habitat

*Carrying capacity* is defined as the greatest number of animals that can be supported by a certain area of habitat at a given time and at a defined nutritional condition. Although this concept is easy to understand, it is very difficult to measure. Changes in forage quality, vegetative cover, winter conditions, and snow depth all influence an area's carrying capacity over time.

Habitat regulates wildlife populations because as populations grow, competition for forage increases. The declining availability of forage causes nutrition to wane, calf

production to taper off, and mortality to increase. The nutritional condition of populations diminishes the closer they approach carrying capacity. This increases the vulnerability of these populations to severe winters, disease, predation, and other environmental influences. Habitat conditions play an integral role in the productivity and survival of prey populations.

Attempting to manage for the absolute highest density that can be supported may have unintended consequences, such as damage to browse species, poor body condition, risk of widespread mortality during a severe winter, or increased vehicle collision or crop damage. Managers may recommend threshold values of nutritional indices (see Section 6.5) for defining the carrying capacity, or the public may define other thresholds above which negative effects of high prey density become undesirable.

### Predators

In much of Alaska, predation by wolves and bears holds moose and caribou populations well below what their habitat can support. High predation rates can keep prey populations at low densities for years, and in some cases, indefinitely. Many moose and caribou populations persist in what biologists refer to as a *low density dynamic equilibrium*, meaning both predator and prey numbers may fluctuate at low levels for indefinite periods of time.

Simply put births and deaths regulate the number of animals on the landscape. In most of the U.S., where large predators are absent, wild caribou (which exist in very low numbers outside of Alaska) and moose are limited by habitat and commonly experience nutritional stress. In Alaska, moose populations are commonly at low population densities despite widely available forage maintained by wildland fires and floodplain disturbance. In these systems, nutrition is good and the number of calves born relative to the number of cow moose can be quite high, although survivorship is quite low because of predation. If deaths are reduced, these populations will grow and a higher number of animals will be available for harvest.

Very high rates of mortality during the first year – and especially the first few weeks – of life greatly reduce the number of calves that are “recruited” into the population: i.e., those that survive to become adults. This loss of recruitment can substantially reduce the number of moose and caribou available for harvest and restricts the population from growing larger, or may even cause it to decline. Poor recruitment of calves to adulthood can also limit sustainable harvest from moderate density populations.

Wildlife scientists can determine when predators are keeping caribou and moose at low densities relative to available forage by using information collected from various combinations of field surveys including data from aerial surveys of predators and prey, harvest reports, calf mortality studies, body condition and weight measures, and browse surveys. Reproductive rates in particular are useful indicators of prey populations' potential for growth.

When wildlife habitat is healthy and abundant, moose and caribou are in good physical condition, and calf production is high. Biologists must understand causes of mortality if populations are unable to increase. If disease is not evident, the survival of different age classes of moose and caribou can be assessed, which can be used to indicate if wolves or bears are the primary source of predation. Bears focus predation on very young calves compared to wolves.

In some cases when moose or caribou populations have exceeded what their habitat can support, habitat can be damaged. If severe damage occurs, such as with the Nelchina basin caribou range during the late 1960s, it may take several decades for the habitat to recover. Habitat quantity and quality ultimately determine how many animals a range can support.

## 6.5 Monitoring Habitat and Nutrition

### Habitat

In many other states, where large predators are absent, wild moose (and what few caribou exist outside Alaska) are limited primarily by habitat, winter conditions, vehicle collisions, hunting, and other factors. Generally, animals that are limited by habitat experience poor body condition, low reproductive rates, and higher incidence of disease and parasites. Where prey animals do not show signs of habitat limitations or limitations by other non-predation mortality factors, wildlife managers may suspect and investigate whether prey populations are primarily limited by predation.

Not all habitats are equal. Some areas are inherently more productive than others, given elevation, latitude, and geological differences. While one habitat may not be as high quality as another, it is important to distinguish this situation from habitat damaged by an overpopulation of moose or caribou, or other factors. Overall habitat quality affects prey reproduction, survival, and in the long term, the number of animals in an area.

### Nutrition

Wildlife managers monitor several indicators of nutritional health of moose and caribou, including:

- *Twinning Rate.* The percentage of cow moose giving birth to twins declines as the population approaches carrying capacity. Caribou do not twin.
- *Calf weight.* Poorly nourished calves, or calves conceived late in the rut, are smaller the following winter and have lower overwinter survival rates than heavier calves.
- *Forage Characteristics and Use.* More vegetation will show signs of browsing as the population approaches carrying capacity. Moderately high browsing rates on some plant species accelerates regrowth, but severe overbrowsing can actually kill plants or allow plant species less favorable as browse to dominate.
- *Age of first reproduction.* As nutritional condition declines, cow moose have their first calves later in life. For example, in areas where plenty of good food is

available, cow moose and caribou may have their first calves at two or three years of age, but where food is scarce, a majority of cow moose do not reproduce until four years of age. Annual changes in productivity resulting from fluctuating nutritional status are common in caribou, resulting in fluctuations in the proportion of three-year-old cows that have calves.

- *Pregnancy rate.* The percent of females that are pregnant each year is related to nutritional condition of the population during the previous autumn. Predation on last year's calves can reduce over-winter lactation demands resulting in increased pregnancy rates the following fall. Under excellent nutritional conditions, caribou cows can have calves every year and the majority of reproducing cow moose can have twins. Poorly nourished caribou cows often skip a year between pregnancies, and fewer than 10% of poorly nourished moose cows have twin calves.
- *Sources of Mortality.* The percent of moose that die for reasons unrelated to predation or harvest (e.g., disease, malnourishment, or accidents) can increase as a population increases toward the upper limit of habitat carrying capacity.

To date, ADF&G has not identified any Alaska moose populations that have been limited at low densities by poor nutritional status.

## **6.6 Habitat Enhancement**

Rejuvenation of moose winter forage has been accomplished at the landscape scale by working with landowners and managers to allow wildland fire to cycle nutrients and regenerate shrubs and young deciduous trees. However, benefits gained through wildland fire are unpredictable because of the uncertainty of when and where fires will take place. Large prescribed fires have been accomplished, but they are becoming increasingly unpopular with the public, especially near urban interface areas, where there is strong aversion to smoke. Mechanical treatments (e.g., bulldozers) can crush or shear decadent forage species, which stimulates growth of new forage. Mechanical techniques are expensive and inherently limited to small, localized areas, and logging operations are presently small and limited to areas adjacent to the road system in Interior and southcentral Alaska.

## **6.7 Predator Control as a Management Tool**

When conventional hunting and trapping prove insufficient to keep predator populations within management objectives, predator control may be the only practical means of changing this situation. When nutritional condition of moose or caribou is adequate, reducing predation by wolves and/or bears can improve survival of both calves and adult prey to increase population numbers or harvest by hunters.

If prey numbers fall to very low levels, reductions in predation and harvest must be more dramatic. When implemented in a timely manner, predator control can result in shorter-term programs where prey numbers are stabilized and improved more quickly and efficiently. In such cases, the age and sex structure of prey populations can be maintained at optimum ratios of young to adults. When populations boom and crash, age structures

can become skewed, and create difficult management situations long into the future. Harvest regulations also change regularly as the sustainable harvest numbers fluctuate year to year. Predator control programs are designed to maintain stability of elevated harvests while maintaining viable numbers of prey and predators alike.

In control programs, predators are reduced in number but never permanently eliminated from any area; viable populations of predators are a requirement of law. The long-term goal of a successful program is increased prey density, increased harvest, and stable populations of predators. Biologists determine the level of predator removal needed to allow growth of prey populations. Biologists determine predator population objectives for areas that can achieve desired levels of harvest. Intensive management efforts, including predator control, focus on achieving those objectives.

Past wolf control efforts have involved ADF&G staff or members of the public. Current programs allow public permittees to remove a specific number of wolves using land-and-shoot or aerial shooting techniques in designated areas as part of predator control programs. Shooting from aircraft is a federal offense for hunters, and state law prohibits hunters from landing and shooting animals the same day they have been airborne. However, these methods are allowed for permittees involved with predator control programs. Similarly, bear control programs may, in some cases, allow permittees to sell bear hides or set bait stations for grizzly bears in control areas. These activities are prohibited under hunting regulations.

When members of the public participate in control programs, their activities are monitored under a permit system. Wolves killed must be reported promptly, and ADF&G requires permittees to report numbers, colors, and locations of all wolf packs and individual wolves seen or taken.

There is no indication from available scientific data that state-sponsored wolf or bear control programs have permanently adversely affected the persistence or ability of wolf or bear populations to recover following control on either a statewide or local basis. Not all public proposals for predator control are approved for implementation. To date, more proposals have been rejected by the board than approved.

### **6.8 Can Predator Control Work?**

When applied under appropriate conditions, predator control can provide the opportunity for people to increase their harvest of moose and caribou. Predator control has been used in a few areas of Alaska and elsewhere to effectively reverse or stabilize declining moose or caribou populations, increase the numbers and/or densities of prey animals, and increase harvest of moose and caribou. Habitat quality, weather conditions, the mix and movement of predators, human access, management costs, and land ownership can all contribute to or detract from the success of control programs. The response of prey to control efforts depends on many factors, and in some cases, several years of predator reductions. Several studies specifically note reduced hunting and favorable weather during and immediately after predator control as contributors to successful programs.

Moose and caribou population and harvest objectives are usually not met if programs are interrupted or applied sporadically or incompletely.

Predator control programs can be effective when:

- *Predation is a limiting factor of prey abundance and survival.*
- *Significant predation is controlled.* Where more than one predator is responsible for significant levels of mortality on a moose or caribou population (i.e., wolves and bears), reductions in only a single predator such as wolves will be less effective than reductions in both predators.
- *Predators are reduced for sufficient time.* A program must exert sufficient influence long enough to allow increases in calf survival over several years. The sooner prey declines are addressed, the sooner intensive management can be successful. Waiting until a "biological emergency" exists requires the most drastic and intensive predator control.
- *Habitat is sufficient to support more prey.* Forage must be able to support higher numbers of prey, and snow must be shallow enough to allow access to the forage. Food, space, cover, and arrangement of habitat resources must be adequate to support the population and harvest objectives. The history of natural disturbances (e.g., fire and flooding) and management of each area is important in understanding and determining how many animals a particular area can support.
- *Control is conducted in sufficient area.* Experience gained from successful predator control programs suggests control areas should be at least 10,000 square kilometers (3,861 mi<sup>2</sup>) in size to both account for prey movements and dispersal and to reduce the effect of immigration of predators from adjacent areas. Wolves especially have very high dispersal rates and can quickly re-populate areas having low numbers of wolves as prey populations increase.
- *Harvest of prey by hunters is limited.* Harvest of the prey population, including subsistence harvest, must not be excessive and may be reduced or, in extreme situations, even eliminated during a control program. Typically, before predator control is implemented, harvest is severely restricted and often limited to subsistence only.

## 6.9 Numbers of Predators Removed

The numbers of predators that must be removed to achieve program objectives is unique to each area. Not all areas have the same suite of predators and prey. For example, GMU 13 contains moose, caribou, wolves, brown bears, and black bears, with limited availability of salmon, whereas GMU 16 includes moose but relatively few caribou, wolves, more brown bears, more black bears, and abundant salmon (which are important food for predators). Further, availability and quality of forage differs by area and species (i.e., more calves may be born in one population than another), creating a better situation for population recovery. General reduction targets are not simply applied across the state but are specifically designed for each situation.

Several published studies report increases in prey numbers in Alaska and the Yukon after wolf control occurred that reduced wolf numbers to at least 55% or less of their pre-

control numbers for at least four years. Wolf fecundity increases in response to control efforts as well. For example, in GMU 13 from 1989 to 1999, normal, regulated hunting and trapping removed only 20-50% of the wolves annually. While that may appear high, given the dispersal, reproduction, and harvest patterns of wolves in this area, the GMU 13 wolf population actually increased to an all-time high during this period.

In some cases, there are enough historical data on predator and prey populations to demonstrate the reduced level at which wolf populations will allow moose and caribou populations to increase. In other areas, this level of information is lacking, requiring less specific, more generalized approaches in the implementation of predator control. Given changing wildlife productivity, as well as changing access and the ability of regulated hunters and trappers to remove predators in specific areas, each situation must be carefully reviewed before intensive management programs are implemented.

#### **6.10 Duration of Control**

The duration of intensive predator control programs needed to achieve success depends on specific situations. Intensive, short-term wolf control cannot be reasonably expected to initiate a successful, sustainable, long-term increase in harvest of moose or caribou. Calf survival must be protected for at least three to four years until the calves are old enough to produce calves of their own. The National Research Council's (NRC) 1997 review of predator control programs in Alaska and Yukon found that successful programs lasted at least four years.

Wolf control is stopped when prey populations and/or harvest objectives are reached. After control has been terminated, long-term, sustained harvest of wolves and bears usually remains necessary to sustain the higher prey populations. If moose or caribou populations are increased, those populations constitute not only increased harvesting opportunity for hunters, but also an increased source of food for predators, whose populations will predictably tend to increase in size in response to greater food availability.

Therefore, harvest of wolves and bears – through traditional hunting and trapping or other means – must limit the natural growth of predator populations, which would otherwise normally return the predator-prey situation to the same low density dynamic equilibrium condition that existed before the control program was initiated. Efforts by the public or possibly periodic, short-term secondary predator control will sometimes be a necessary part of overall, intensive management programs designed to increase harvests of moose and caribou.

#### **6.11 Alternatives to Lethal Predator Control**

Non-lethal methods have been effective in reducing predation on moose and caribou. However, some of these methods tend to be very expensive or logistically impractical, except in relatively small areas. Although these methods have the potential to be relatively efficient, effective, and easy to monitor in some situations, they often are

difficult to implement on a geographic scale large enough to be effective in most intensive management situations. However, these non-lethal methods will continue to be considered in Alaska's predator control programs on a case-by-case basis to determine if they are applicable in specific situations.

The following methods have been applied in Alaska:

- ***Surgical sterilization/relocation.*** In GMU 20E (Fortymile drainage), surgical sterilization of primary male and female wolves in 15 packs prevented pairs from producing pups; yet the pairs continued to defend their territories against incursions by other wolves. In addition, all other subordinate wolves in these targeted packs were removed either through live-capture and release at remote sites or by public trapping and hunting. This reduced the number of wolves in the vicinity of caribou calving grounds, which reduced the amount of predation on caribou calves. This program was relatively expensive, and it was difficult to find release sites acceptable to the public for the wolves that were live-captured and removed from the control area. Public concerns arose about translocated wolves causing predation problems in the areas where they were released.
- ***Diversionary feeding.*** In GMUs 20D (Delta) and 20E, studies have demonstrated that providing wolves and bears with alternate sources of food during the moose calving season produced an increase in moose calf survival to early winter. Reduction in predation stops as soon as the diversionary feeding is discontinued. This technique is cost prohibitive for large scale efforts.
- ***Predator relocation.*** In GMUs 13B, 13E, and 19D, capturing and relocating grizzly and/or black bears has resulted in substantial reductions in moose calf mortality. Two studies were conducted primarily to document the response of moose populations – specifically calf moose survivorship – to reductions in bear predation. These projects were not conducted as routine management techniques, or with an expectation that they would become routine efforts. These projects were expensive, logistically difficult, and unpopular with residents who lived in or had an interest in the localities where the bears were released. Also, bears have a strong tendency to return to their original locations, even over great distances, and may require additional translocations. Relocation of wolves has proven ineffective because wolves quickly return to their original home ranges. In addition, there are no areas of wolf habitat that need additional wolves.

## 7.0 PREDATOR MANAGEMENT RESULTS

### 7.1 Pre-statehood Efforts

In several areas, including GMU 13, extensive aerial shooting and poisoning through the late 1940s and early 1950s reduced wolf numbers dramatically. Poisoning likely reduced numbers of many non-target species as well, including black bears, brown bears, coyotes, wolverines, and eagles. Predator numbers were driven to the lowest recorded levels during this early period.

Large scale killing of predators allowed prey numbers to increase, often to levels their

habitat could not support. Many moose and caribou populations responded by growing rapidly and reaching historic high levels in the 1960s. The Nelchina caribou herd reached an all-time high and severely damaged its available habitat. Habitat degradation, severe winters, and over-harvest then combined to cause a large scale crash in the herd. Both moose and caribou in that area fell to very low numbers and it has taken decades for those populations to return to levels approaching those appropriate for the available habitat.

## **7.2 Post-statehood Efforts**

After statehood, different intensive management techniques were tested or used routinely, including relocating brown bears from the Upper Susitna River in GMU 13, diversionary feeding trials for bears in GMUs 13, 20D, and 20E, sterilization of wolves in GMU 20E, and several same-day-airborne and aerial shooting programs to remove wolves. With each effort, ADF&G biologists learned valuable insights about when and where predator control could be used, and what results could be expected in various situations.

The most intensively managed area for moose was the Tanana Flats and Alaska Range foothills south of Fairbanks (GMU 20A), which had predator control programs during 1976-82 (for moose) and 1993-94 (for caribou) and has sustained a relatively high harvest of wolves by hunters and trappers. This area now supports the highest moose density and harvest density in the state for any equal-sized unsettled area, yet predators kill an estimated four times as many moose as do hunters.

## **7.3 Status of Current Programs**

Predator control programs are presently employed on about 9% of Alaska's total land area. There is no indication from available scientific data that state-sponsored wolf or bear control programs have permanently adversely affected the long-term viability of wolf or bear populations on either a statewide or local basis. Wolf and bear populations have maintained their ability to increase after control programs end, even with continued public hunting and trapping.

Presently active wolf control programs are in relatively early stages, and results thus far show trends similar to results experienced in previous programs that successfully increased prey numbers or hunter harvests. Thus far, public participation in bear control areas has been low, and none have shown conclusive results. Bear control programs conducted by the public are relatively new, and it remains to be demonstrated whether the methods allowed thus far for taking bears in these programs will be successful. Additional methods for taking bears may be necessary to make these programs successful.

Status reports for current control programs include the following, with intensive management population and harvest objectives in 5 AAC 92.108 except as noted:

Upper Susitna, Talkeetna, Nelchina, and Copper basins (GMUs 13A, 13B, 13C, and 13E)  
(wolf control)

*Control Area Size:* 15,413 mi<sup>2</sup>

*Control Program Goal:* Initiate an increase to the intensive management population objective for these four subunits of 16,400 – 20,000 moose and intensive management harvest objective of 975 – 1,990 moose.

*Control Method(s):* Public hunting and trapping of wolves and hunting of bears, aerial shooting, and land-and-shoot take of wolves by permittees.

*Status:* Active

Within the Upper Susitna River (a portion of GMUs 13B and 13E) from 1976-1978, wolves were reduced by 40-60% as part of a multi-year research program to measure effects of brown bear and wolf predation on calf moose. After wolf removal ended, a large proportion of the brown bears were relocated out of the area. Calf survival increased immediately after bear removal, but dropped to pre-relocation levels once bears returned to the area. While attempts were made to liberalize brown bear hunting regulations at the time, harvest regulations and bag limits were conservative compared to current regulations.

Following these experiments, wolf management across GMU 13 kept pressure on wolves. Between 1977 and 1987, the spring wolf estimate averaged 147. While aerial shooting of wolves was prohibited without a permit after 1971, many wolves were harvested by the land-and-shoot method during this period under general hunting and trapping regulations. During the same period, moose numbers within long-term trend count areas covering some 3,500 mi<sup>2</sup> increased 9% annually, almost doubling in size in the ten-year period.

When land-and-shoot was eliminated as a legal method of take under hunting/trapping regulations in 1988, conventional shooting, trapping, and snaring became the only methods by which to manage wolves in GMU 13. While land-and-shoot activities were permitted for two years, 1990-1991, the efforts were too short-lived to have much of an impact on wolf numbers. The wolf population began to grow, and by 1999 and 2000, the population had reached an all-time high (both years the fall estimate was 520 wolves, spring estimates were 300 and 270, respectively). Moose numbers during the same period declined as well; numbers within long-term trend count areas declined by nearly 4% annually to nearly half of their former numbers.

In 2000, an intensive wolf management plan was adopted for GMU 13; the use of snowmachines was liberalized for the taking of wolves at that time, and the same-day-airborne taking of wolves began in January 2004. Between 2000 and 2006, the wolf population was reduced across the intensive management portion of GMU 13 (13A, 13B, 13C, and 13E). Trapping and hunting accounted for nearly 50% of the unit-wide annual wolf take, whereas same-day-airborne take was responsible for the other half. The

number of wolves taken same-day-airborne in GMU 13 has averaged 71 annually. From 2000 to 2006, total moose numbers in long-term trend count areas are up 14%, or about 2% per year; calf numbers increased 110%; yearling bulls increased 176%; total bulls increased 45%; and cows decreased 3%. The current spring wolf population objective for GMU 13 is 135-165, based largely on previous predator/prey dynamics within this area. The wolf population was within that range during spring 2006. ADF&G issued an emergency order April 11, 2007 to close the control program to prevent reduction of the wolf population below the mandated objectives.

While no intensive bear management program has been implemented for GMU 13, brown bears have been identified as significant predators of moose calves in that unit. As a result, hunting regulations have been increasingly liberalized over time. Results of these changes are currently being analyzed.

Cook Inlet (GMUs 16A and 16B) (wolf and bear control)

*Control Area Size:* 11,105 mi<sup>2</sup>

*Control Program Goal:* Initiate an increase to the intensive management population objective for these two subunits of 10,000 – 11,500 moose and intensive management harvest objective of 500 – 960 moose.

*Control Method(s):* Public hunting and trapping of wolves and hunting of bears, aerial shooting, and land-and-shoot take of wolves by permittees.

*Status:* Active

In 2004, when aerial wolf control began in GMU 16B, biologists estimated the unit population at about 200 wolves. The spring 2007 population was estimated at between 45 and 95 animals, for a total reduction of between 53 and 78%. Overwinter survival of moose calves was very high. However, spring to fall survival of newborn calves remained low at about 18%. To reduce predation on newborn calves, the brown bear season was liberalized from a take of one bear every four years to one bear per year beginning in fall 2001, and two brown bears per year beginning in fall 2005. Despite a year-round hunting season and a three bear limit, black bears remain abundant in GMU 16B. In July 2007, ADF&G initiated a black bear control program in 16B, allowing permitted participants to take an unlimited number of black bears of any age.

Middle Kuskokwim/Aniak (GMU 19A) (wolf control)

*Control Area Size:* 9,969 mi<sup>2</sup>. Since control does not occur on federal wildlife refuge lands or on private lands posted against trespass, 9,368 mi<sup>2</sup> of the control area are open to wolf control.

*Control Program Goal:* Initiate an increase to the intensive management population objective of 7,600–9,300 moose and intensive management harvest objective of 400–550 moose for this unit [5 AAC 92.125(e)(1)(A)(viii)].

*Control Method(s):* Public hunting and trapping of wolves and hunting of bears, aerial shooting, and land-and-shoot take of wolves by permittees, sale of black bear hides and skulls by permittees.

*Status:* Active

The five-year wolf control implementation plan, adopted by the board in March 2004 for the Central Kuskokwim, originally consisted of Units 19A and 19B and was initiated in July 2004. The plan was subsequently modified in January 2006 to include only Unit 19A.

During the 2004–2005 regulatory year, 42 wolves were taken same-day-airborne and 71 wolves were reported by all methods. During 2005–2006, 46 wolves were taken same-day-airborne and 76 wolves were reported by all methods. ADF&G issued an emergency order on April 3, 2006 to close the control program as well as hunting and trapping seasons to prevent a reduction of the wolf population below the mandated objectives. During 2006–2007, 7 wolves were taken same-day-airborne and 10 wolves were reported taken by all methods. The low wolf take in 2006–2007 resulted from poor snow conditions unsuitable for effectively tracking wolves.

Surveys conducted during January and March 2006 indicated 114–120 wolves inhabited Unit 19A. Largely based on these data, the board reduced the post-control wolf population objective from 40–53 to no fewer than 30 wolves during their May 2006 meeting.

During 2005–2006, 65% of the wolf population in 19A was taken by all methods. However, the distribution of this take was not uniform throughout the area. During 2004–2005 and 2005–2006, over 70% of the wolves in the lower Holitna, Hoholitna, and Stony River drainages were removed. Removal rates in other portions of Unit 19A were much lower, and probably had minimal effect in reducing predation on moose. Although snow conditions in the Aniak River drainage were not conducive to the use of airplanes to take wolves during 2004–2006, snow events in most winters are sufficient for aerial tracking purposes. Elsewhere in Unit 19A, topography, trees, typical wind and snow conditions, and other factors make it difficult to take wolves using fixed wing aircraft.

In fall 2004, a moose density estimate of 0.19 observable moose/mi<sup>2</sup> was measured in Unit 19A south of the Kuskokwim. The most recent density estimate, obtained in March 2006 in the western portion of Unit 19A south of the Kuskokwim River, was 0.38 observable moose/ mi<sup>2</sup>. No density estimates were obtained during winter 2006–2007 because of poor survey conditions.

During May 2007 a moose calf twinning survey in the Hōlitna and Hoholitna River drainages within 19A showed a 64% twinning rate. Furthermore, the data recorded on sex and age of observed moose suggested 31% yearlings, 62 calves:100 cows, and 26 bulls:100 cows. Although these observations suggest the beginning of moose population growth and excellent nutritional status, the sample size was too small to make conclusive statements. Biologists were unable to obtain sample sizes sufficient for analysis elsewhere in Unit 19A.

Middle Kuskokwim/McGrath (GMU 19D East) (wolf and bear control)

*Control Area Size:* 8,513 mi<sup>2</sup> (of this area, 6,245 mi<sup>2</sup> are active).

*Control Program Goal:* Initiate an increase to the intensive management population objective of 6,000 – 8,000 moose and intensive management harvest objective of 400 – 600 moose.

*Control Method(s):* Public hunting and trapping of wolves and hunting of bears, aerial shooting, land-and-shoot take of wolves by permittees, and ADF&G relocation of brown bears, hunting black bears over bait, same day airborne by permittees, sale of black bear and grizzly bear hides or skulls by permittees.

*Status:* Active

Research on the effects of predation on moose in the McGrath area began during spring 2001. Results from that research indicated that habitat is not limiting moose population growth and both bears and wolves were significant predators of moose in the McGrath area. Therefore, during the springs of 2003 and 2004, ADF&G staff removed 115 black bears and 10 grizzly bears from a 528 mi<sup>2</sup> area surrounding McGrath – the “Experimental Micromanagement Area” (EMMA). This removal represented at least a 70% reduction in the bear population for that area. In addition, starting in late winter 2004, a wolf control effort employing aerial shooting was initiated in the same area and remained in effect during the winters of 2004-2005 and 2005-2006. Wolf surveys conducted during spring suggest the wolf population within the area was about 75% lower as a result of the program.

ADF&G continued the basic research program that was initiated in the spring of 2001 during the predator removals, and it is that research project that provided insights into the effectiveness of removing predators in the McGrath area to increase moose numbers. During 2001 and 2002, prior to removal of predators, annual moose calf survival was 33% and 27%, respectively. Following removal of predators, survival of calves was 52%, 40%, 42%, and 65%, respectively, for 2003, 2004, 2005, and 2006. Annual survival rates of yearling moose also increased following removal of predators with 83%, 74%, 75%, 94%, 96%, and 85% surviving in 2001 thru 2006, respectively. Annual survival of adult moose followed the same basic pattern of increase following removal of predators with 86%, 89%, 95%, 100%, 98%, and 98% surviving in 2001 thru 2006, respectively. In addition, moose surveys conducted in the McGrath predator removal area indicated the

moose population in the area had grown from 524 moose in 2001 to 691 moose in 2006, representing an approximately 30% increase in the moose population. By request of the McGrath Advisory Committee, moose harvest in the EMMA has been voluntarily suspended during the control program.

Upper Yukon/Tanana basin (GMUs 12, 20B, 20D, 20E, and 25C) (wolf and bear control)

*Control Area Size:* 18,745 mi<sup>2</sup>. To avoid federal wildlife refuge lands, 15,949 mi<sup>2</sup> are open to wolf control and 4,050 mi<sup>2</sup> are open to grizzly bear control.

*Control Program Goals:* Initiate increases to: 1) the Unit 12/20E portion of the intensive management population objective of 8,744 – 11,116 moose and intensive management harvest objective of 547 – 1,084 moose [5 AAC 92.125(b)(1)(A)(xv)]; and 2) the Fortymile caribou herd intensive management population objective of 50,000 – 100,000 caribou and the intensive management harvest objective of 1,000 – 15,000 caribou.

*Control Method(s):* Public hunting and trapping of wolves and hunting of bears, aerial shooting, and land-and-shoot take of wolves by permittees, hunting black bears or grizzly bears over bait in the Brown Bear Control Area, same day airborne by permittees, sale of black bear and grizzly bear hides or skulls from Brown Bear Control Area by permittees.

*Status:* Active

Results of research and management surveys conducted within the Upper Yukon/Tanana Predator Control Area during the past 24 years indicated wolves were the primary predators on the Fortymile caribou herd, and brown bears and wolves were the primary predators on moose in northern GMU 12 and GMU 20E. A brown bear and wolf control program was initiated in 2005, within a portion of northern GMU 12 and GMU 20E, to reduce predation on moose. In 2006, the wolf control area was expanded to include the Fortymile caribou herd's range in portions of GMUs 12, 20B, 20D, 20E and 25C, to reduce predation on the caribou herd. One hundred wolves and six brown bears have been killed under these programs since it was initiated.

Initial indications suggest moose survival and moose numbers have increased in a 2,452 mi<sup>2</sup> portion of southern GMU 20E, within the west Moose Survey Area (survey area). Annual reductions in the wolf population within the survey area occurred during the winters of 2004-2005 and 2005-2006 as a result of wolf kills by wolf control permittees and harvests by hunters and trappers. The late-winter estimated wolf population within the survey area during the winters of 2004-2005 and 2005-2006 was less than 50% of the pre-control estimate. Results from a 2006 brown bear population survey conducted within the survey area indicated there were fewer grizzly bears within the survey area than reported during research conducted in the 1980s. Extensive fires occurred in southern GMU 20E in 2004 and 2005, which included much of the survey area. These fires may have influenced grizzly bear distributions and may have contributed to lower than normal numbers of bears in the survey area in 2006.

The calf:cow ratios observed in the survey area during 2005 and 2006 fall moose surveys were 30 and 37 calves:100 cows compared to an average of 19 calves:100 cows (range 14-26 calves:100 cows) observed in the survey area during 1998–2004. The fall moose population estimates in the survey area were 1,435 (90% confidence interval  $\pm 22\%$ ), 1,801 (90% confidence interval  $\pm 17\%$ ) and 2,398 (90% confidence interval  $\pm 19\%$ ) during falls of 2004, 2005, and 2006, respectively. This suggested an increase in the moose population between the fall of 2004 (pre-control) and 2006.

While lower numbers of wolves within the survey area likely resulted in increase moose survival, fewer grizzly bears may have accounted for some of the observed increase in the moose calf:cow ratio and the population within the survey area in the falls of 2005 and 2006. The moose population appeared to remain stable in the remainder of GMU 20E and northern GMU 12, where annual wolf reductions did not exceed 30% of the late-winter pre-control population. Additional information is needed to accurately evaluate the effects of the predator control program on the moose population. Because the wolf control program for the Fortymile caribou herd has only been in place for one year, there are inadequate data to evaluate this portion of the program at this time.

From 1981-1984, wolf numbers were reduced in Unit 20E by 30-60%, with no discernible effect on moose calf survival. Grizzly bears killed 50% of the moose calves born in 1984.

## 8.0 CONCLUSIONS

- Moose, caribou, and deer provide important food for many Alaskans.
- Moose and caribou populations across Alaska frequently persist at low densities, often kept that way by predation. Predators kill more moose and caribou than do hunters.
- The Alaska Board of Game and Alaska Department of Fish & Game are required by Alaska's Constitution and state law to manage predators and prey for all users in Alaska.
- Intensive management statutes require the Alaska Board of Game to adopt regulations that implement programs intended to provide more prey harvesting opportunities for hunters.
- Predator control programs are designed to reduce wolf or bear populations to increase numbers or harvests of moose or caribou. Each situation is approached systematically and individually.
- When properly designed and carried out, predator control programs have a high likelihood of increasing moose and caribou harvests. As populations increase, ADF&G will periodically assess nutritional status to determine capability of the habitat to support increasing populations.

- When members of the public are involved, the state limits participation to qualified applicants through the issuance of special permits and closely monitors the actions of participants.
- ADF&G has collected and continues to collect data to monitor the effectiveness of bear and wolf control programs. There is still much to learn.
- Predator control programs are active on about 9% of Alaska's lands.
- There is no indication from available scientific data that state-sponsored wolf or bear control programs have permanently adversely affected the persistence of wolf or bear populations on either a statewide or local basis.
- Data from each of the five active wolf control areas are preliminary, but indicate beginnings of increased moose calf survival and population growth.
- Current bear control programs in GMUs 16, 19A, and 20E are new and thus far inconclusive; new information is being collected and evaluated.
- Wolf and bear populations maintain their ability to increase after control programs end, even with continued public hunting and trapping.
- Citizen values range from rejecting manipulation of wildlife populations for human benefits, to demanding management practices allowing hunters to harvest higher percentages of wildlife populations annually. Because of these opposing public values, predator control will always be controversial.
- No single management approach can satisfy everyone; ADF&G uses different management strategies in different parts of the state to provide for different values, interests, and demands.
- ADF&G is committed to maintaining viable predator and prey populations and manages Alaska's wildlife populations with long-term health, sustainable harvests, and conservation as guiding principles.

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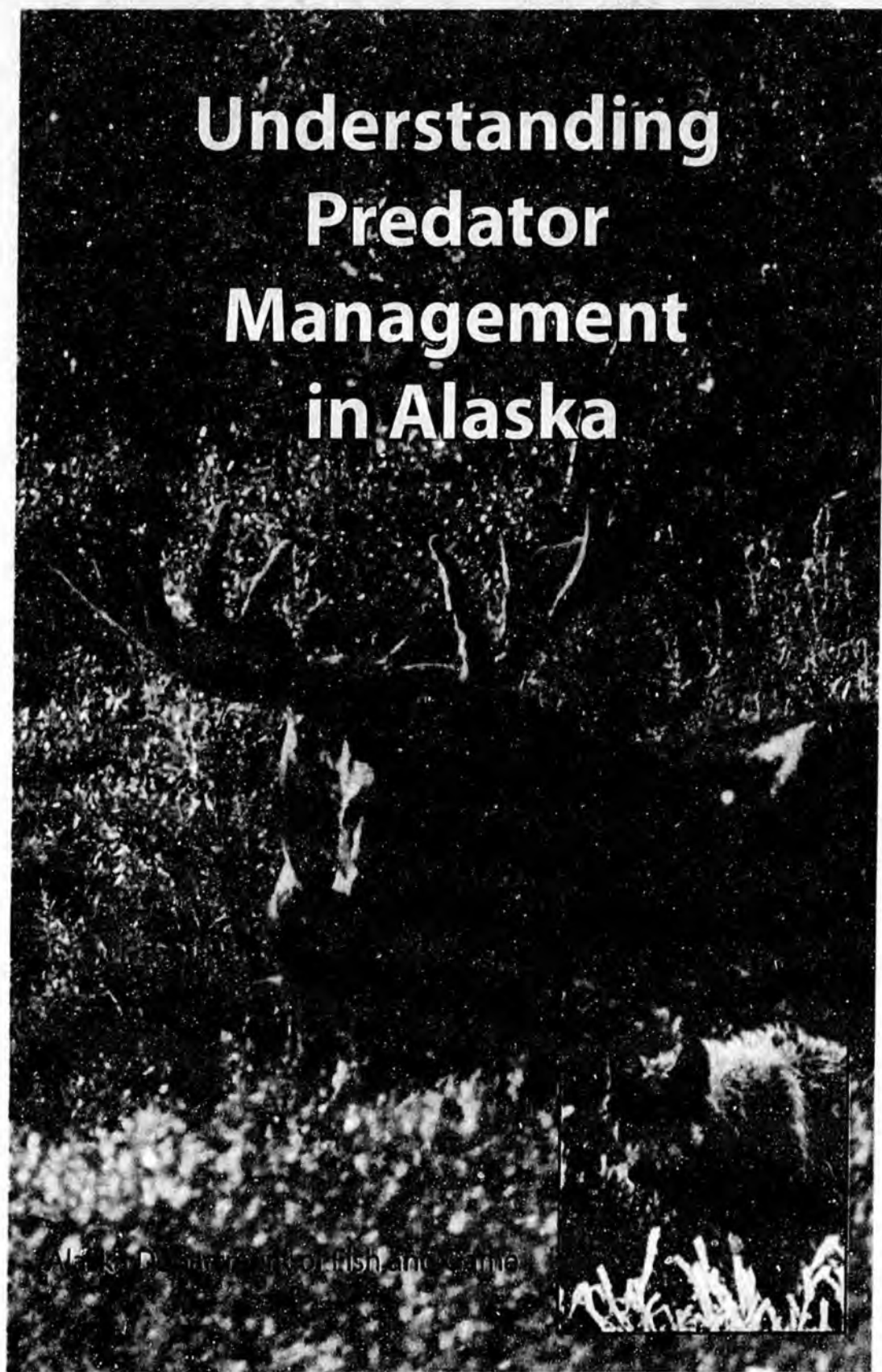
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For more information, visit the ADF&G web site:

<http://www.wildlife.alaska.gov/index.cfm?adfg=management.main>

# Understanding Predator Management in Alaska



Alaska Department of Fish and Game

Alaska's constitution requires that Alaska's resources, including its fish and wildlife, be managed for the maximum benefit of Alaskans. It also requires that its wildlife be managed on a sustained yield basis subject to preferences amongst beneficial uses. These constitutional requirements, further amplified by the Alaska State Legislature, create the basic framework for the Alaska Department of Fish and Game (ADF&G) and the Alaska Boards of Game and Fisheries to manage Alaska's bountiful fish and wildlife.

These mandates can create potential user conflicts, such as those created where predators are temporarily manipulated to benefit prey species important to Alaskans for food. Under direction from the Alaska State Legislature, ADF&G and the Alaska Board of Game (Board) have recently embarked on several programs to increase low moose and caribou populations by temporarily manipulating wolf and bear numbers.

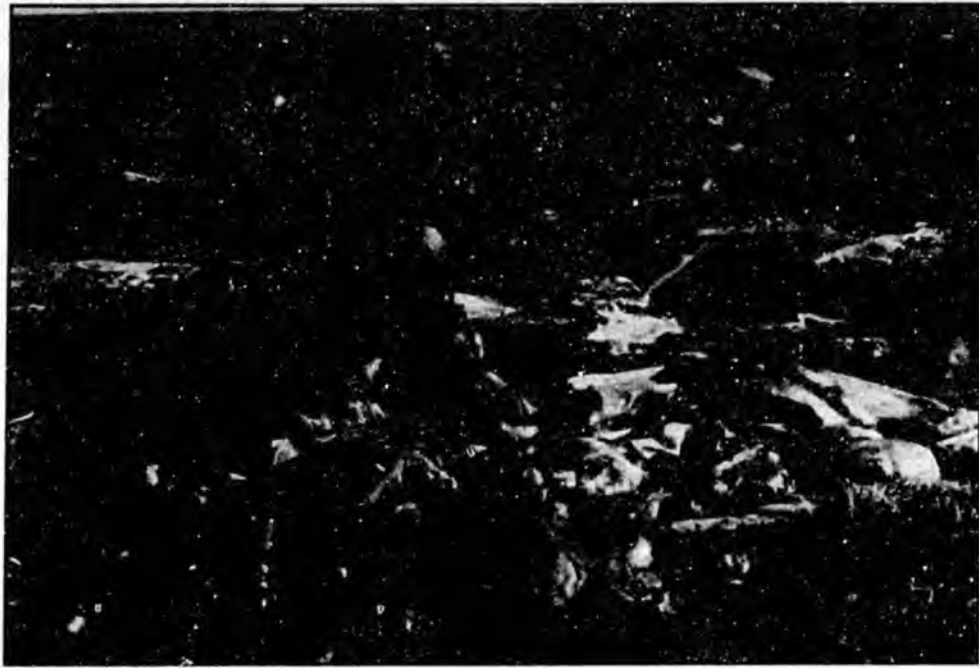
As the primary agency charged with managing the state's wildlife populations, ADF&G, in conjunction with the Board, is not only responsible for managing Alaska's wildlife but for providing information to the public on the background and scientific justification for, and the purposes and progress of all management programs. It is especially important to provide the public with information when programs are controversial and complex.

**This booklet offers an overview of the social, legal, and biological bases for predator management in Alaska. It presents ADF&G's perspectives on predator management, discusses the reasons for specific wildlife management actions, describes the scientific information assembled by ADF&G that affects decisions on implementing predator control, and explains how ADF&G evaluates results.**

Alaska is the only U.S. state with full complements of native big game (e.g., moose, caribou, deer, sheep, and mountain goats) and large predators. In this booklet, "prey" generally refers to moose and caribou and "predators" to wolves and bears.

**Alaska enjoys sustainable populations of both predators and prey. ADF&G's goal is to maintain those populations in perpetuity.**





*Hunting is extremely important in Alaska. It is integral to lifestyles, traditional cultures, the economy, and basic food needs for many Alaska families. Approximately 7,000 moose and 25,000 caribou are reported harvested each year.*

## **Social considerations**

**Moose, caribou, deer, sheep, and mountain goats provide an important food source for rural and urban Alaskans.** Wild game is a high quality, local, organic, free-range food source, preferred by many over meats shipped in from far away. In addition, many small communities have few or no practical alternatives for meat. Most rural communities are not connected to road systems, are hundreds of miles from larger cities, have no commercial-scale agriculture, and lack big grocery stores. Acquiring meat and other items from outside these communities can be cost prohibitive.

Citizen views range from the belief that wildlife populations should not be manipulated for human benefits, to a demand for actively managing populations to allow people to harvest a higher percentage of wildlife populations annually. No single management approach can satisfy all users. ADF&G uses different management strategies in different parts of the state to provide for different values and demands. Some areas are managed more aggressively to maximize harvest opportunities. Other areas are closed to hunting and provide other public uses, such as viewing.

ADF&G remains committed to maintaining sustainable predator and prey populations. The department will continue to manage Alaska's wildlife populations with long-term health, sustainable harvests, and conservation as guiding principles.

## Legal considerations

The Board adopts regulations to conserve and develop the state's wildlife resources, and allocates uses of those resources. Using a well established public process, the Board promulgates hunting, trapping, and other wildlife regulations, including predator management directives.

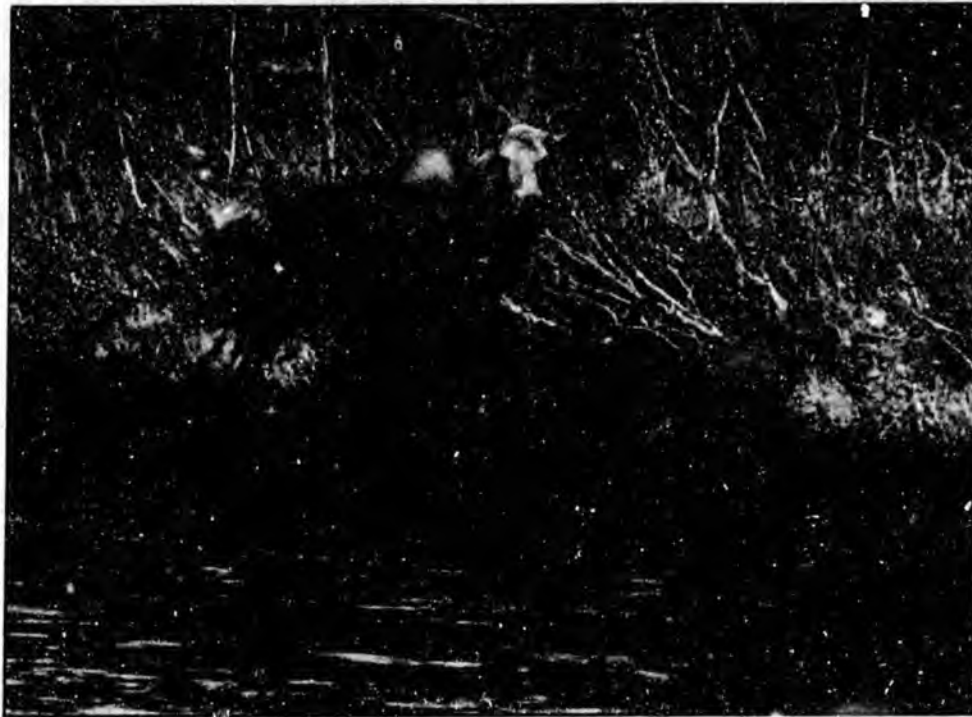
Alaska's Constitution charges state government with managing Alaska's fish and wildlife resources on the *sustained yield* principle. That is, long term harvest rates should not exceed regeneration. This principle ensures wildlife are maintained in perpetuity at sustainable levels.

**In 1994, the Alaska State Legislature enacted the "Intensive Management Law," requiring the Board to designate areas where human consumptive use is the highest priority use of wildlife, and then set prey population and harvest objectives for these areas. If management objectives are not met, the Board must consider intensive management actions, including: 1) reducing or eliminating non-resident hunting; 2) reducing or eliminating resident hunting; 3) liberalizing hunting and trapping regulations for wolves and bears; and 4) implementing habitat improvement projects (primarily prescribed fires).**

If these actions do not or are unlikely to result in higher levels of prey for food for people, and predation is the key limiting factor, the Board may consider predator control. Predator control measures are proposed by the public or ADF&G, evaluated by ADF&G, and considered by the Board. If adopted, programs are designed by ADF&G and conducted by ADF&G staff, specially permitted members of the public, or a combination of both. Not all public proposals for predator control are approved for implementation. In fact, historically, more have been rejected than approved.



***ADF&G works to actively monitor wildlife populations and trends, makes recommendations to the Alaska Board of Game to manage these populations, and implements the regulatory programs established by the Board.***



*In much of Alaska, large predators kill far more prey than hunters do. Predators may take 70 to 80 percent of the moose and caribou that die each year.*

## **Biological considerations**

**Control programs are designed to reduce numbers of predators, not eliminate them.** Programs must provide for the long-term sustainability of populations of predators and prey. Control efforts are suspended after prey population and harvest goals have been met. Typically, predator populations then begin to increase in response to an increased food resource. If regulated conventional hunting and trapping harvests of predators cannot limit the growth of predator populations, control programs may be reinstated.

***Control programs are designed to reduce numbers of predators - not eliminate them.***

Prey and predators are managed primarily through regulated hunting and trapping. Habitat quality, weather, disease, accidents, and preda-

tion also affect the abundance of prey populations. Hunting and trapping seasons and bag limits are constantly monitored and regularly revised to make sure populations are sustainable in the long-term.

A territorial bounty on wolves began in 1915. Widespread largely indiscriminate predator control included poisoning, and later aerial shooting and statewide bounties, and

resulted in markedly reduced wolf numbers. Poisoning killed non-target predators as well, including black bears, brown bears, coyotes, wolverines, and eagles.

Some moose and caribou populations responded by growing rapidly, reaching historic high levels, and severely damaging their habitat. Habitat degradation, severe winters, and over-harvest combined to cause large-scale population declines. Only after decades of recovery have these populations returned to levels commensurate with available habitat.

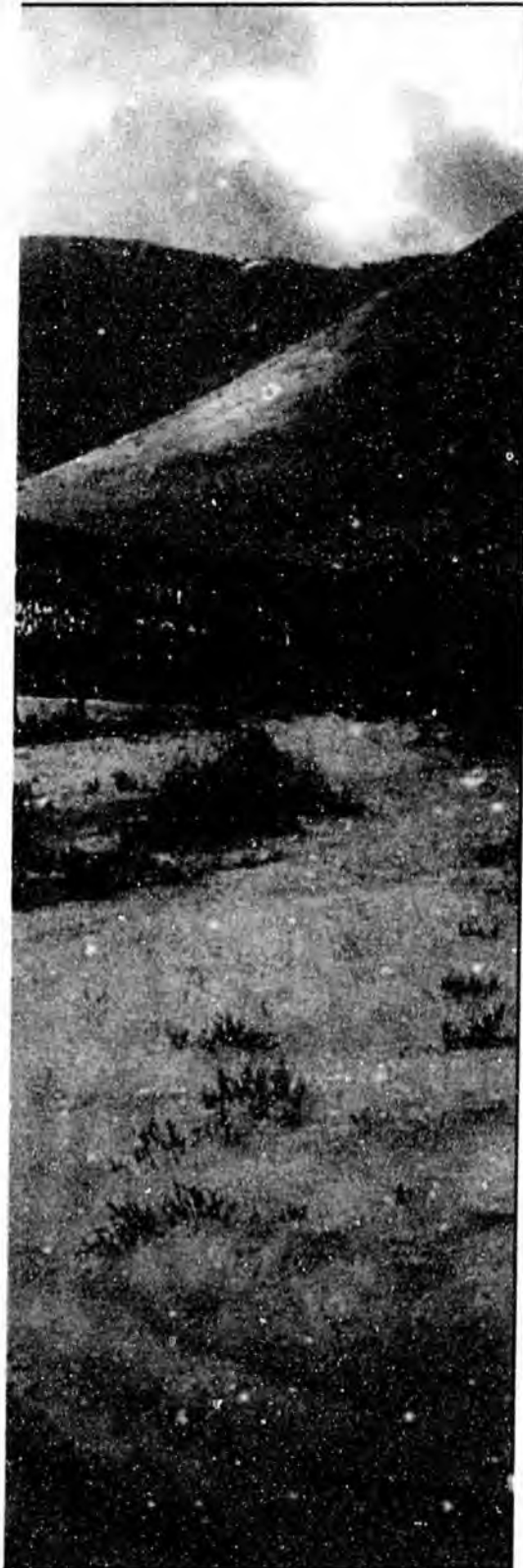
After statehood, different techniques were employed, including relocating brown bears, diversionary feeding trials for bears, sterilization of wolves, and same-day-airborne and aerial shooting programs to remove wolves. With each effort, ADF&G biologists gained valuable insights into when and where predator control could and should be used, and what results could be expected in various situations.

Limited programs involving shooting wolves from aircraft by state and/or private pilots or ground-based wolf removal methods have occurred intermittently for periods of about two to six years since the 1970s. Experimental programs to control bear predation began in 2003.

Predator control programs are established by the Alaska Board of Game, with information provided by ADF&G. Five areas of the state currently have predator control programs. Several other areas have been considered, but determined to be unsuitable for predator control.

***ADF&G estimates that 7,000 to 11,000 wolves, approximately 30,000 grizzly bears, and more than 100,000 black bears live in Alaska. About one million caribou live in Alaska in 32 herds; 175,000 - 200,000 moose are widely distributed in varying densities throughout the state.***





## **Reasons for specific wildlife management actions**

Predator control is typically undertaken to maintain or increase the harvest of prey for food by people. Predator control can be used to allow prey populations to increase, to reallocate the harvest of prey from predators to people, to stabilize or prevent further growth of predator populations, or to halt or reverse prey population declines.

Low numbers of prey or low harvests are not necessarily biological, conservation, or management problems. Many parts of Alaska have prey populations at levels below what habitat can support. A low number, density, or harvest becomes a management problem when people want something different than what an area is providing. Predator control is conducted to increase harvests and meet established objectives.

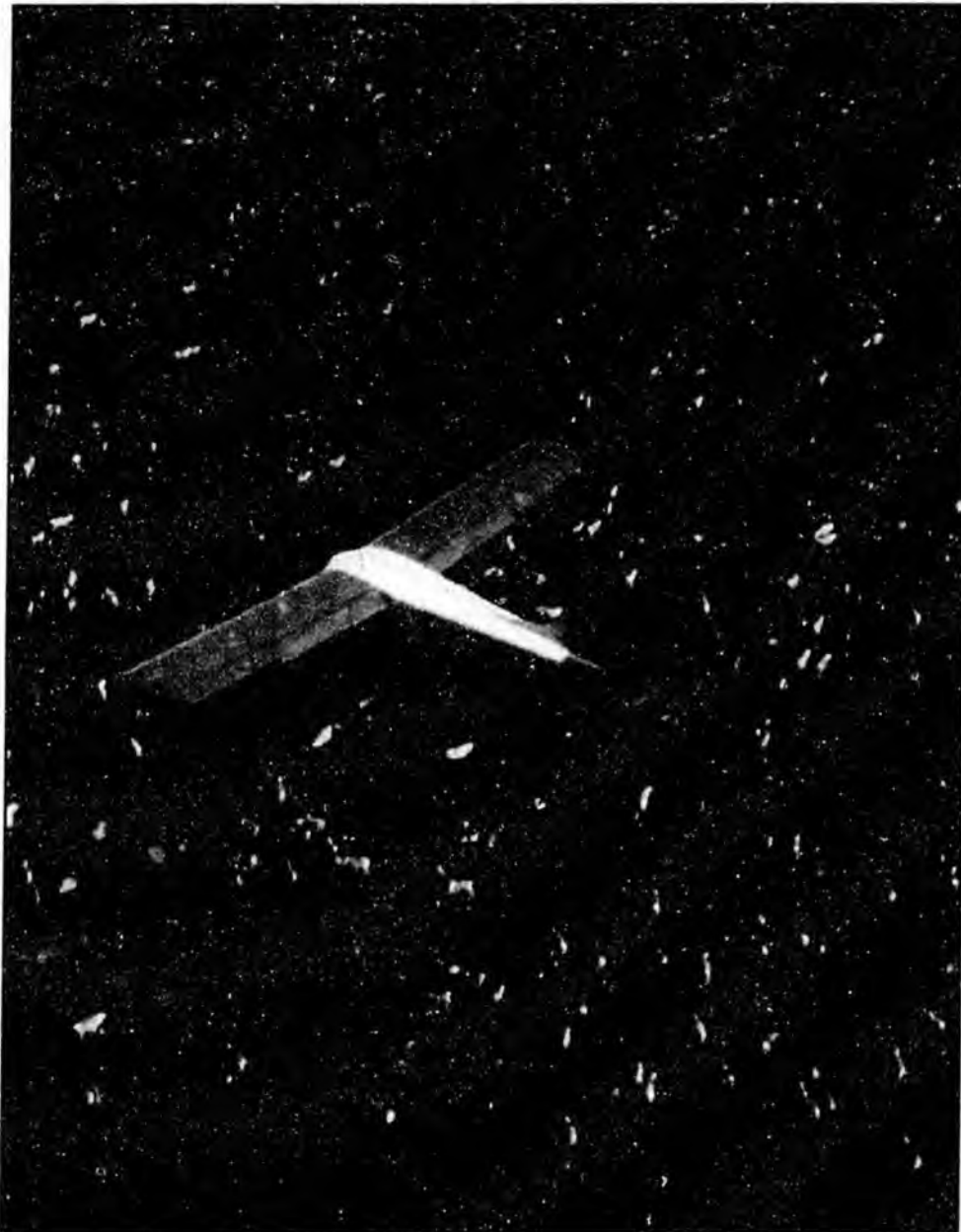
## **ADF&G's perspectives on predator management**

**Predator control is not hunting.** Conventional hunting and trapping is taking animals on a sustainable basis for food, to satisfy cultural needs, and for recreation. Laws and regulations prescribe methods, means, and bag limits for these activities. Any citizen with appropriate licenses and tags may engage in hunting and trapping.

**Predator control is a specific type of management action intended to reduce predator numbers to lower but sustainable levels.** It often employs

methods not available to hunters, such as aerial shooting. Fair chase standards do not apply. Members of the public involved in predator control are issued special permits authorizing them to employ these methods in specific areas. Techniques used in predator control

programs depend on what can be effective. For example, in some control areas, the most effective method of reducing numbers of wolves is through the use of aircraft, using either land-and-shoot or aerial shooting techniques.



***Biologists photograph and count caribou from the air to determine herd sizes, including numbers of bulls, cows, and calves.***

## Scientific information affecting decisions on predator control

Biologists use scientific information to understand predator-prey dynamics. They estimate the size of predator and prey populations, assess if predators are limiting prey numbers or affecting prey population trends, gauge the capacity of the habitat to support prey, forecast what effects predator control might have, and evaluate the results of predator control programs when they are implemented.

Aerial surveys, radio-tracking, harvest reports, calf mortality studies, body condition assessments, weight measurements, and browse surveys allow biologists to determine when predators are limiting prey.

**Science alone cannot dictate whether predator control programs should or should not be conducted. Those choices are value-based decisions made through public processes.**



## How ADF&G evaluates results

**A key element in managing wildlife is knowing or estimating the status and dynamics of given populations.** Constraints of geography, vegetative cover, snow cover, insufficient funding, and many other factors frequently prevent biologists from directly counting individual animals across large areas. Wildlife managers use various science-based estimation techniques to come up with population estimates and relative proportions of males, females, and young animals in populations.

Carefully designed sampling in the form of composition surveys can help detect changes in population trends and reveal important herd characteristics, such as relative abundance of bulls and cows, and numbers and survival of calves. Addressing changes, with their unique sets of biological circumstances, requires the use of unique and suitable management tools and techniques.

## Habitat as a limiting factor

**Habitat plays an integral role in the productivity and survival of prey populations.** Carrying capacity is defined as the greatest number of animals that can be supported by a certain area of habitat at a given time. This concept is easy to understand, but difficult to measure. Changes in forage quality, vegetative cover, winter conditions, and snow depth all influence an area's carrying capacity over time. Nutritional condition of populations diminishes as they approach carrying capacity. This increases the vulnerability of populations to severe winters, disease, predation, and other environmental influences.

Habitats are not equal. Some are inherently more productive than others, given elevation, latitude, geological differences,

damage from an overpopulation of moose or caribou, or other factors. Overall habitat quality affects prey reproduction, survival, and in the long term, the number of animals in an area.

**Wildlife managers monitor population characteristics that indicate the nutritional health of moose and caribou, including:**

- **Twinning rates**
- **Calf weights**
- **Forage characteristics and uses**
- **Age of first reproduction**
- **Pregnancy rates**
- **Sources of mortality**
- **Survival rates**
- **Growth rates**

When prey animals are not limited by habitat or non-predation mortality, wildlife managers may suspect and investigate whether predation is a primary limiting factor.

