Larry Van Daele
Kodiak - 2009

RC 88

Spirit of the Kodiak

By Larry Van Daele
Wildlife Biologist
Alaska Department of Fish and Game

"You are a dealer of death! How can you sleep at night realizing that you are responsible for the destruction of God's most magnificent creatures? You, sir, can be assured that your day of reckoning will come and you will be judged harshly for your actions!"

Wow. That was an interesting way to start another day as the wildlife biologist for the Alaska Department of Fish and Game (DFG) on Kodiak Island. The caller was unusually upset that we allow bears to be killed on Kodiak; however, her passionate interest in conserving Kodiak bears was typical of what I've heard over the last quarter century I've worked with these animals. Kodiak bears evoke strong emotions in just about everyone who learns about them. Our department's charge is to find ways to not only make sure the bear populations are healthy, but also strive to satisfy the diverse interests of people—rarely an easy assignment.

The Gulfstream V split the glistening sheen on the tarmac as it touched down on rain-soaked runway 25 on Kodiak. Inside, the corporate executives were as giddy as schoolboys as they anticipated the hunt of a lifetime. They'd been hunting for trophy animals around the world, but finally they had been able to secure a couple of the highly coveted permits to pursue a bear on Kodiak. As the private jet taxied to the terminal, the hunting partners bantered back and forth about how almost one in 10 bears taken on Kodiak each year make the Boone and Crockett records book and eight of the top-10 brown bears taken in North America have come from this island. Now it was their turn to test themselves against these magnificent creatures.

Kodiak bears evoke strong emotions in just about everyone who learns about them. **Our department's charge is to find ways to not only make sure the bear populations are healthy, but also strive to satisfy the diverse interests of people—rarely an easy assignment.**

In the early part of the 20th century it became evident that the bears inhabiting the Kodiak Archipelago were the largest in North America, and perhaps, in the world. Biologists classified them as a separate subspecies, *Ursus arctos middendorffi*, because of their large size and the fact that they had been isolated from other bear populations for at least 12,000 years. Unfortunately, the bear population had been severely depleted by the early 1900s primarily because of market hunting and wanton shooting by people who considered them predators on salmon and cattle. In 1904, James H. Kidder wrote one of the first accounts of hunting Kodiak bears and noted: "...most people have an exaggerated idea of the number of bears on the Kadiak (sic) Islands. Personally I believe that they are too few ever to make shooting them popular."

During that time, the country's game laws were tangled, contradictory, and often unenforceable. In 1887, the first American wildlife conservation organization was formed when several influential hunters, scientists, and military and political leaders founded the Boone and Crockett Club. Their efforts led to the first federal legislation to enforce wildlife regulations and the interstate traffic of illegally taken animals. The Game and Wild Bird Preservation and Disposition Act of 1900, also known as the Lacey Act, set the foundation for the first legal protection for much of America's wildlife, including Kodiak's bears. The cause of wildlife conservation was also pushed to the forefront of the nation's consciousness by the first president of the new century, Theodore Roosevelt, another of the Boone and Crockett Club's founders.

In 1925, the newly established Alaska Game Commission outlawed the sale of Kodiak bear hides and set the first limits on how bears could be harvested. As bear populations rebounded, sport hunting started to become an economic opportunity. A few entrepreneurs seized the opportunity to become the first professional Kodiak bear guides, and in the process, they became strong advocates for the bears.

In the late 1930s, cattle ranchers and fishermen were convinced that the bear population was out of control and should be drastically reduced. Guides and other sportsmen disagreed and took their arguments to territorial and federal lawmakers. The end result of the controversy was establishment of the Kodiak National Wildlife Refuge in 1941. Almost two-thirds of Kodiak Island was set aside as critical bear habitat and Refuge managers were charged with finding ways that the population could be sustained while allowing limited bear hunting. The rest of the island, including a one-mile strip around the coastline, was left open to homesteading, ranching, salmon canneries, and other human activities.

Conflicts continued for the next couple decades, with calls for bear control by vocal and well-organized representatives of cattlemen and canneries. Sportsmen countered these recommendations vehemently. A 1953 *Field and Stream* article said, "Conservationists and sportsmen all over America, aroused by the Kodiak threat, have joined battle in the bear's defense." An article in the *Saturday Evening Post* in 1955 noted "unless the species is given continued protection, the conservationists warn, America's most majestic wildlife creature could be wiped out in a few short years. The trouble is . . . that the big bears don't have a lobby in Washington. Surely a nation as big as ours can afford a few acres of real estate . . . so that this historic creature will not go the way of the mastodon and the hairy mammoth, and disappear from the face of the earth". As a result, bear control was never initiated, bear hunting regulations became more restrictive, and the one-mile coastal strip intended for human development was rescinded and became part of the Refuge.

When Alaska achieved statehood in 1959, the DFG took over responsibility of managing Kodiak bears. The state adopted most of the same regulations the Federal government imposed and even implemented more restrictive rules on some parts of the archipelago. On northeastern Kodiak (outside the Refuge), however, cattlemen found a sympathetic ear in the newly established legislature and bear control was initiated with DFG staff directed to actively hunt and kill bears near ranches.

Once again, sportsmen did not hesitate to make their voices heard in support of Kodiak brown bears. The most vociferous condemnation of the predator-control program came in a 1964 article in *Outdoor Life* titled, "The Kodiak Bear War." A group of Kodiak guides sent a telegram to the editor requesting that the magazine present the facts to the public. In its exposé, the magazine disclosed a "secret" state-sanctioned program that started in 1962 and employed the use of two World War II fighter pilots to shoot bears from the air. The Piper Super Cub aircraft with a semi-automatic M-1 Garand rifle mounted above the cockpit was prominently displayed on the magazine's cover. Unrelenting pressure finally terminated the controversial program in 1970.

Kodiak bears are not something to be eradicated, completely protected, or possessed by humans. They are the lifeblood and spirit of the Kodiak Islands, and as such, need to be treated with respect. This holds true for the hunters who have been all over the world, the average guy who only has one shot at getting a Kodiak trophy, or the people who finally get in touch with the natural world by watching a bear in the wild.

The wind whistled through the fiberglass roofing of the bear sealing shed as I crouched over the luxurious dark brown hide of the recently killed adult boar. It was not trophy-class, but definitely a nice hide. Most hunters are intensely interested in the size of their bear's skull, its age and the quality of the hide, and they usually pepper us with questions as we work our way through the mandatory inspection and sealing process before the hunter can take his trophy from the island. But this hunter just wanted to talk about the gall bladder. He wanted to know if he had prepared it properly. "I took it out of the bear as soon as it was dead and I made sure the bile stayed inside", he told me in a quiet and somber tone. "Then I smoked it over an alder fire—would you check to make sure it is dried enough?" I looked it over carefully, told him it looked fine to me, but admitted that I was not an expert on gall bladder preparation. My curiosity piqued, I then inquired why this particular part of the bear was his "trophy." He lowered his eyes and said, "My father has terminal liver cancer and the doctors said there was nothing they could do for him. But I found a Chinese doctor who told me that if I could get a fresh brown bear gall bladder he could cure him. I used my life's savings to go on this hunt and I don't want to screw things up. I have to do everything I can to save Dad."

Due to the efforts of sportsmen, guys like this gentleman, as well as the corporate executives and the average Alaska resident, still have an opportunity to pursue Kodiak bears. While battles ensued over whether bears should be conserved or eradicated, biologists were working to unlock the secrets of the bears' lives and find ways to manage them. By using modern radio-telemetry techniques and old-fashioned observation, we have learned where bears go during the year, what they eat, where they den, and how they interact. We've also discovered ways to determine how long they live, how many cubs they have, and how many bears there

Refuge History

Pre-establishment - Bear hunters concerned with the health and survival of the brown bear population petitioned for the protection of the world-famous mammals.

1941 Kodiak National Wildlife Refuge was established August 19, 1941 "for the purpose of protecting the natural feeding and breeding range of the brown bears and other wildlife on Uganik and Kodiak Islands, Alaska." About 1.987 million acres were included within the refuge boundary. A one mile coastal strip of refuge remained open to public land laws.

1958 A public land order withdrew a one-mile coastal strip from public land laws. At the same time two peninsulas were withdrawn from the northern most portion of the refuge reducing total acreage to approximately 1.82 million.

1971 The Alaska Native Claims Settlement Act (ANCSA) transferred 310,000 acres of refuge land to Native ownership. Uses were still required to be compatible with refuge purposes per section 22(g) of ANCSA

1975 The Mount Glottof Research Natural Area was designated within the refuge to protect alpine feeding habitat for brown bears. Located in the Uganik alpine, this 88,000-acre area provides for future research on this unique brown bear summer feeding habitat.

1980 The Alaska National Interest Land Conservation Act (ANILCA) added 50,000 acres of land on Afognak and Ban Islands to the refuge.

1990s Nearly 275,000 acres of valuable wildlife habitat were reacquired through purchase or donation of: fee title, conservation easement, and limited development easements. Funding sources included: Exxon Valdez Oil Spill civil and criminal settlement funds; Federal Land and Water Conservation Fund and; other private sources.

Today Current acreage within the refuge boundary totals approximately 1.9 million acres. As funding becomes available, acquisition of valuable habitat from willing sellers continues as guided by the refuge's Land Protection Plan.

are in each part of the islands. These findings, coupled with common-sense advice from guides and other hunters, have resulted in a finely tuned management system that distributes hunters in 32 different areas during two seasons (spring: April 1-May 15, and fall: October 25-November 30).

Each year about 4,500 people apply for the 496 permits available for Kodiak bear hunts (two-thirds to Alaska residents, one-third to nonresidents). Nonresidents are required to hire a registered guide who is authorized to hunt in a particular area, and this can cost from $10,000-$22,000. All hunters must come into our office in Kodiak prior to going into the field for a brief orientation and must check out before they leave the island. Few hunters complain about the expense or inconvenience, though, because they realize that the chance to hunt a Kodiak bear is a unique opportunity.

You could feel the tension in the air. Even the raucous gulls seemed to fall silent as the massive boar parted the tall grass along the shore and entered Frazer River. The sub-adults and family groups that had enjoyed a bounty of thousands of sockeye salmon struggling upriver to spawn moved aside as the half-ton monarch sauntered to a favored spot. Less than 30 yards away, a group of 10 people instinctively huddled a little closer together. They had come from Kodiak a couple hours earlier to watch and photograph bears, and had been thrilled by the interactions and antics of a couple dozen bruins, including a sow who nursed her cubs right next to the visiting humans. Yet this was different, and for the first time in their lives they were not the masters of their environment. They were as much a part of it as the salmon, the birds and the other bears, and deep in their souls they could sense their place in this drama.

Bears are solitary animals that come together for feeding opportunities that are critical to their survival.

The consequence of all this cooperation between hunters and biologists is a bear population that is probably as high as it has ever been. We estimate that there are 3,500 bears on the archipelago and the population is continuing to increase slightly each year. Just as important, we have seen an increasing number of large, trophy-sized boars (total skull size at least 28 inches) taken in recent years. For instance, in the 1970s around 2.5 percent of the bears killed on Kodiak were trophy-sized; in the 1990s and 2000s, the proportion increased to roughly nine percent.

Hunters are no longer the only group interested in Kodiak bears. In the past 20 years, bear viewing has become increasingly popular on Kodiak and other parts of Alaska. This diversification is due in part to a national trend of increasing interest in wildlife watching, and here in southern Alaska it has been accelerated by press coverage of the *Exxon Valdez* oil spill that highlighted the beauty of our area, and by fishing and hunting lodges who are striving to extend their seasons and client base. The most accessible bear viewing location on Kodiak, Frazer River, now has over 1,100 people who come each year, paying $450 each for a three-hour tour. Visitor numbers have been increasing at about 10 percent annually and there are plans for development of additional bear-viewing areas on the archipelago.

Although bear viewing is often touted as a "non-consumptive" use, it can have serious impacts on bear populations if it is not conducted properly. Most viewing occurs at places where bears congregate. Bears are typically solitary animals, and the only reason they come together in large numbers is because of feeding opportunities that are critical to their survival. If some bears avoid these areas because people are there, those bears may not get the fat and protein they need to make it through

the upcoming winter. So, while a hunter may make a "surgical strike" by stealthily harvesting a single bear, unmanaged bear viewing could impact several bears, especially productive sows with cubs.

Often times bear viewing and bear hunting are considered incompatible. Even if the bear population is healthy and bear hunting is sustainable, ethical questions arise, especially if hunting occurs near viewing areas and either during or soon after the viewing season. Many feel that it is not fair to encourage bears to be close to people during the summer only to allow them to be shot in the fall.

Here on Kodiak we tried to address these problems with a public planning process. In 2002, a citizen's advisory committee composed of representatives from 12 diverse stakeholder groups worked with the DFG to develop the *Kodiak Archipelago Bear Conservation and Management Plan*. The plan included over 260 recommendations, but the most impressive aspect of it was that all of the recommendations were by consensus. Even though the stakeholders had very different philosophical positions, they were willing to work together and compromise for the good of the bears.

The Kodiak bear plan recognized bear hunting as a legitimate, traditional, and biologically justifiable activity. It also recommends that the DFG and the Refuge find ways to make bear hunting and bear viewing compatible on the archipelago. Recognizing that this may be a challenging task, the citizen's advisory committee decided to carry on its work even after the plan was completed. For the past six years, committee members have continued to meet through the winter months to work with agency staff and each other. As a bear manager, this group has been a fantastic resource for conserving our valuable bear resource and to find ways to help people and bears co-exist.

Taquka'aq is a powerful spirit. The Alutiiq people who first inhabited Kodiak over 7,500 years ago have traditions that view the bear as a liaison between the spirit world and the physical world, in part because he spends half of the year in a dream state. Strict rituals surround how hunts can be conducted and how the meat, bones, and hide must be cared for and distributed. If these rules are not followed carefully it is impossible to live in harmony with bears or yourself. The essential aspect of all dealings with Taquka'aq is respect.

Many things have happened to the Alutiiq people in the 250 years they have lived with Western cultures. As they assimilated Russian, Scandinavian, and American ways either by choice or by force, they lost many of their traditions and much of their language. In recent years, however, there has been a revitalization of the culture as young people strive to resurrect the wisdom their Elders passed on for millennia. Bears are once again being considered as an integral part of their lives and their being, rather than just being seen as a nuisance or a way to make money.

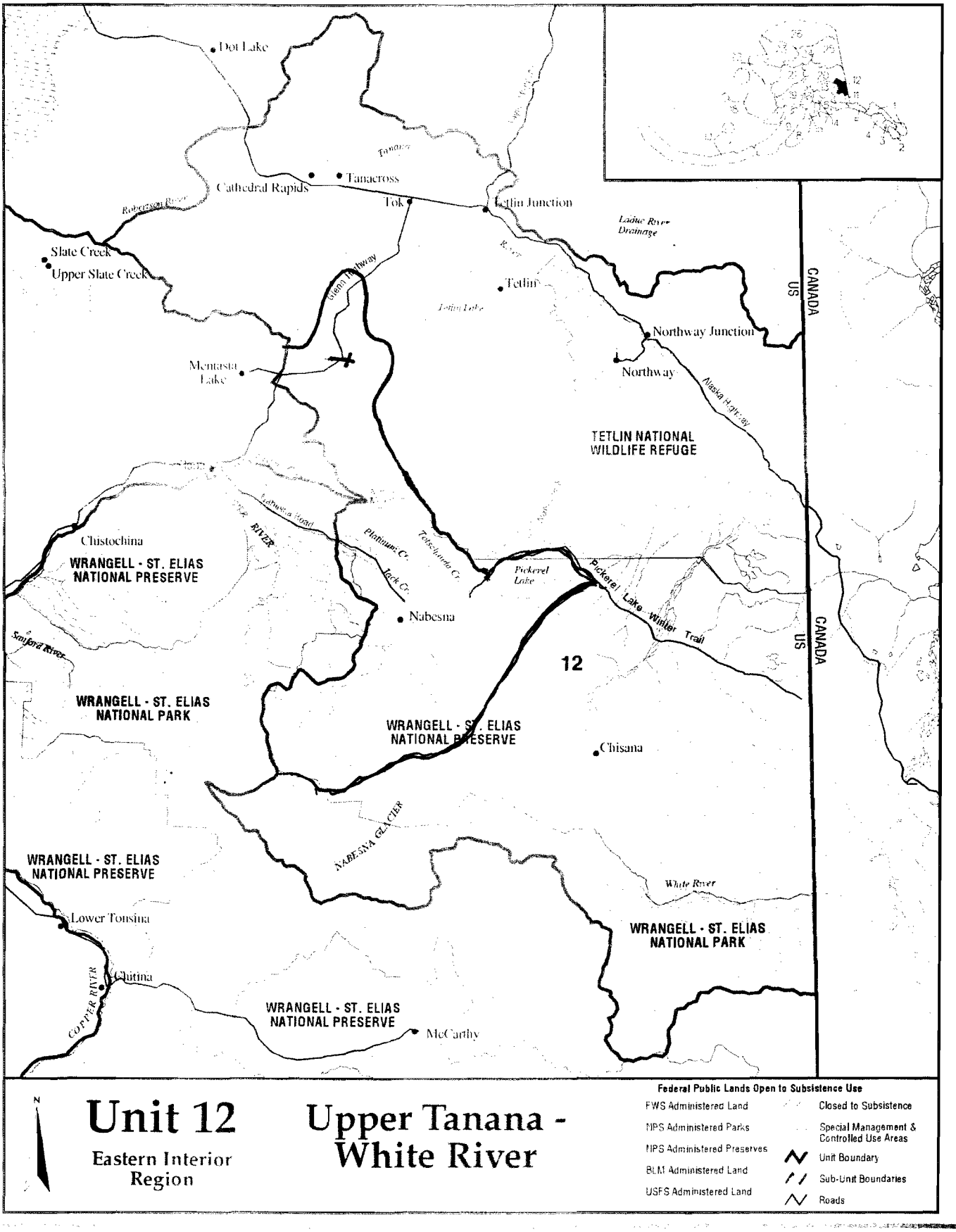
We too can learn from the wisdom of the Elders. Kodiak bears are not something to be eradicated, completely protected, or possessed by humans. They are the lifeblood and spirit of the Kodiak Islands, and as such, need to be treated with respect. This holds true for the hunters who have been all over the world, the average guy who only has one shot at getting a Kodiak trophy, or the people who finally get in touch with the natural world by watching a bear in the wild. I am convinced that by learning as much as possible about bears and the various people who care about them, we can find ways to share this gift with each other while being good stewards so that Kodiak bears continue to thrive for another 12,000 years or more. If we can do that, we can all be comfortable when we are asked about our role in dealing with "God's most magnificent creatures" when our "day of reckoning" comes. ■

RC 89

DISCUSSION POINTS FOR PROPOSAL 84
COMMUNITY HARVEST PROPOSAL

- One community harvest permit (CHP) – administered by AHTNA in close communication with ADF&G staff – serving the 8 Ahtna villages; Gulkana, Cantwell, Chistochina, Gakona, Mentasta, Tazlina, Chitina, and Kluti Kaah.
- Paid Ahtna staff would work with ADF&G to ensure timely harvest reporting and otherwise fulfill the administrative requirements of the permit. To the degree necessary, CHP hunters would bring moose jaws and antlers to ADF&G as part of harvest reporting.
- Eligibility would not be limited to tribal members enrolled in the 8 Ahtna villages. All Alaska residents living within village boundaries, as well as tribal members, could elect to participate in the community harvest permit harvests. Participation in the CHP would be completely voluntary. Any person choosing to participate in the CHP would not be allowed to participate in another state hunt for moose and only those other state caribou hunts where the bag limit is greater than the CHP bag limit.
- The geographical area for the CHP would encompass the area Ahtna people depend upon to meet subsistence moose and caribou needs. This includes GMU 13, 11, part of 12 (see attached map), and that part of 20A that encompasses the south drainage of the Yanert River Valley.
- All persons participating in the CHP would follow patterns of taking and use consistent with Ahtna C&T subsistence use patterns – patterns that are for the most part incorporated in the BOG's 2006 findings on C&T uses of moose and caribou in GMU 13. For example, moose and caribou taken under the permits would be shared with elders and others according to Ahtna traditional patterns.
- Ahtna estimates that the tribal members enrolled in theses 8 Ahtna villages would harvest around 150 moose and 300 caribou from state hunts under the CHP. Ahtna does not have a good estimate for the additional moose and caribou that would be harvested by other non-tribal community residents who may choose to participate in the CHP. Allowing at least an additional 50 moose and 100 caribou seems reasonable. This estimated harvest should not be incorporated into regulation, but rather seen for what it is, a good faith estimate of harvest levels for state hunts given the new opportunities presented by the CHP. Ahtna suggests that it meet with ADF&G Wildlife and Subsistence staff at the end of each season to evaluate the CHP with the goal of reaching consensus on any modifications that may be necessary to bring before future Boards.
- To the degree consistent with conservation, the CHP would allow taking bull and cow caribou and the taking of bull moose outside the current spike fork, 50 inch, 4 brow tine limit. Ahtna looks forward to working with area ADF&G staff to arrive at harvest levels that serve conservation as well as allowing maximum subsistence harvest opportunity. The right balance can be achieved through cooperation. The CHP would authorize a moose season open from August 10th through September 20th and a caribou season from August 10th through September 20th, and October 21 - 3/31

Submitted by Sky Starkey/Ahtna


Dot Lake
Tanacross
Cathedral Rapids
Tok
Tetlin Junction
Slate Creek
Upper Slate Creek
Tetlin
Northway Junction
Northway
Mentasta Lake
TETLIN NATIONAL WILDLIFE REFUGE
Chistochina
WRANGELL - ST. ELIAS NATIONAL PRESERVE
Nabesna
12
WRANGELL - ST. ELIAS NATIONAL PARK
WRANGELL - ST. ELIAS NATIONAL PRESERVE
Chisana
NABESNA GLACIER
WRANGELL - ST. ELIAS NATIONAL PRESERVE
White River
WRANGELL - ST. ELIAS NATIONAL PARK
Lower Tonsina
Chitina
COPPER RIVER
WRANGELL - ST. ELIAS NATIONAL PRESERVE
McCarthy
CANADA
US
Unit 12
Eastern Interior Region
Upper Tanana - White River
Federal Public Lands Open to Subsistence Use
FWS Administered Land
NPS Administered Parks
NPS Administered Preserves
BLM Administered Land
USFS Administered Land
Closed to Subsistence
Special Management & Controlled Use Areas
Unit Boundary
Sub-Unit Boundaries
Roads

RC 90

Kenai Brown bear genetics

Sean Farley

Anchorage Area office

Genetic research (Jackson et al. 2008) on the Kenai brown bear population did not find evidence of significant inbreeding, and only one of three algorithms used to test for the presence of a population fluctuation showed a signature of a genetic bottleneck (Infinite Alleles versus Step-wise and Two-Phase mutation models). However the level of Kenai brown bear mtDNA haplotypic diversity is remarkably low. And, while Jackson et al. (2008) also did not find evidence of population structure across the length of the Kenai Peninsula, recent work (Talbot et al. 2009 unpublished) shows that the Kenai brown bear population is significantly differentiated genetically from the population in the Anchorage area, as well as from more distant mainland populations (nuclear DNA: $\chi^2_{nuc} = \infty$, $\theta_{ST} = 0.113$; mitochondrial DNA: $\chi^2_{mit} = \infty$; $\Phi_{ST} = 0.8$; $P < 0.05$ for all tests; Bonferroni correction applied for microsatellite data).

Management of the Kenai Peninsula brown bear population will greatly benefit from expanding bear sample collection across the only geographic corridor to the Kenai Peninsula and to additional nearby south central Alaskan populations (i.e., Placer and Twenty Mile rivers, upper Eagle River, Girdwood, and western Prince William Sound). Understanding the biological significance of the DNA-based information will require determining the genetic diversity found in the major histocompatability complex (MHC) of Kenai brown bears. Expanded sample collections will establish if the most logical land route is a travel corridor connecting the Kenai Peninsula, and the variation of the MHC will be used to assess the biological significance of the Kenai brown bears genetic isolation.

Farley, S.D. (Chair, Interagency Brown Bear Study Team). 2005. Estimating the size of the Kenai Peninsula brown bear (*Ursus arctos*) population: A DNA based mark-recapture procedure employing stratified sampling along salmon bearing stream. 30pp.

Jackson, J., S. Talbot, and S. Farley. 2008. Genetic characterization of Kenai brown bears (*Ursus arctos*): microsatellite and mitochondrial DNA control region variation in brown bears of the Kenai Peninsula, south central Alaska. Canadian Journal Zoology. 86:756-764.

Talbot, S L., G. K. Sage, and S. D. Farley. 2009. Brown bears (*Ursus arctos*) of the Kenai Peninsula are genetically isolated from mainland south central and southwestern Alaskan populations (abstract).

RC 91

February 28, 2009

Cliff Judkins, Chairman
Alaska Board of Game
Alaska Department of Fish and Game
PO Box 115526
Juneau, Alaska 99811

Dear Chairman Judkins:

The Kodiak Brown Bear Trust has been actively involved in the conservation of Kodiak bears for over 28 years. We have supported research and management programs, education and habitat acquisition to benefit Kodiak bears and their habitat.

Four Trustees, one each representing U.S. Fish and Wildlife, Kodiak Electric Association, and State of Alaska, and one representing conservation groups, provide direction of the Trust. At Trustee meetings we typically receive briefings from management agencies and at our meeting on February 27, 2009, we learned of a proposal (No. 158) before the State Board of Game that concerns bear permits and bear sealing in Unit 8.

After discussion, the Trustees agreed that the Trust should oppose proposal 158. We are aware of the valuable information provided by the sealing program at Kodiak and are concerned that accuracy of that information would be diminished if bear sealing were permitted at locations other than Kodiak. We believe that an important strength of the sealing program at Kodiak is that it is done by Department people who have detailed knowledge of Kodiak and nearby islands, hunt areas and regulations, and provide consistent recording of data, examination for research marks, and collection of biological samples. Please note that Dr. Grant Hilderbrand, our Trustee representing State of Alaska, was not a participant in this discussion because he had to leave our meeting early for work on State Board of Game matters.

In summary, the Kodiak Brown Bear Trust recommends that the Board of Game not adopt proposal 158. We appreciate your consideration of our opposition to this proposal.

Sincerely,

David R. Cline
Chairman

DRC/VB:jb

Victor G. Barnes, Jr.
PO Box 1546
Westcliffe, Colorado 81252
telephone: 719-783-0335 B fax: 719-783-0336
email: jgbarnes@rmi.net

RC 92

February 28, 2009

Cliff Judkins, Chairman
Alaska Board of Game
Alaska Department of Fish and Game
PO Box 115526
Juneau, Alaska 99811

Dear Chairman Judkins,

I am writing to express opposition to Proposal 158 regarding the sealing of brown bear skins and skulls on Unit 8.

I worked 16 years as a research wildlife biologist for the U.S. Department of Interior on Kodiak Island. In cooperation with the Alaska Department of Fish and Game, I conducted research on brown bears and also served as defacto bear biologist for the Kodiak National Wildlife Refuge. Since retirement in 1998, I have remained active with brown bear management on Kodiak through volunteer and contract work.

My experience with research and management of brown bears on Kodiak has convinced me that the requirement for acquiring bear permits and sealing bears at the Kodiak ADF&G office is important and should be continued. The database for sealed Kodiak bears is a tremendous asset for management and it would be compromised by having the sealing done by personnel that do not have personal knowledge and experience on Kodiak Island. The current regulations provide the opportunity for ADF&G personnel in Kodiak to inform hunters on matters such as logistics, hunt conditions and compliance with regulations. In turn, sealing provides managers with current information on hunt conditions, animals seen, potential violations seen in the field, and the opportunity to collect biological samples. In particular, my research benefited from the ability of sealers to recognize and accurately record tattoo numbers of marked bears.

The number of bear hunters that are inconvenienced by the current regulation is very small. Most hunters must pass through Kodiak to conduct their hunts and ADF&G personnel make themselves available at all times to accommodate hunters. I think it would be unwise to change the regulations to accommodate just a few hunters and risk comprising a practice that provides so much useful data and sharing of information between hunters and Unit 8 managers.

The Kodiak brown bear is a tremendous resource and management of Kodiak bears is recognized as one of the best programs world-wide. The current regulation on bear sealing has contributed importantly to that program and should be kept intact

Thank you for your consideration of my comments.

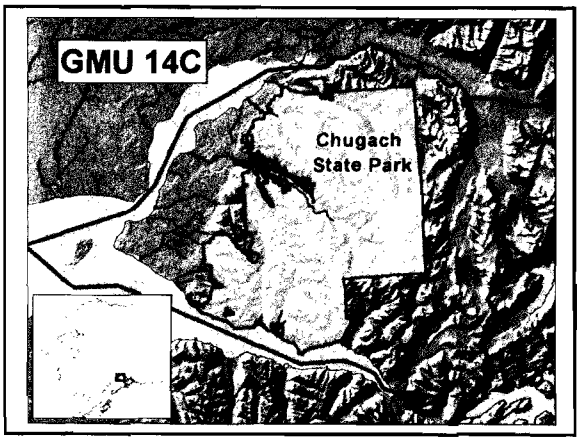
Respectfully,

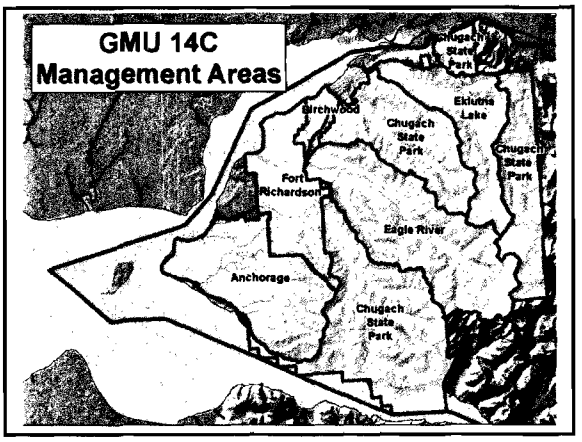
Victor G. Barnes, Jr.

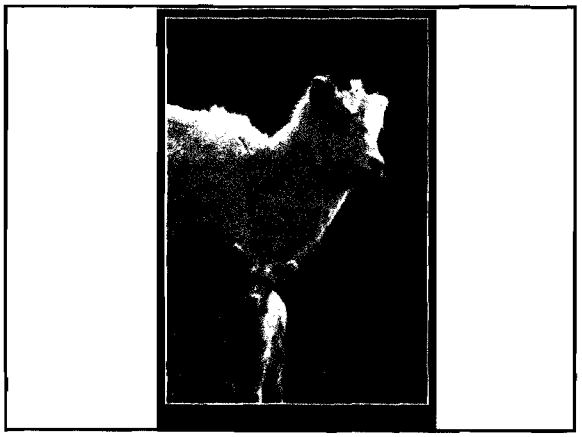
VGB:jb

Sinnott/Coltrane
Anchorage area office
3 March 2009

RC 93



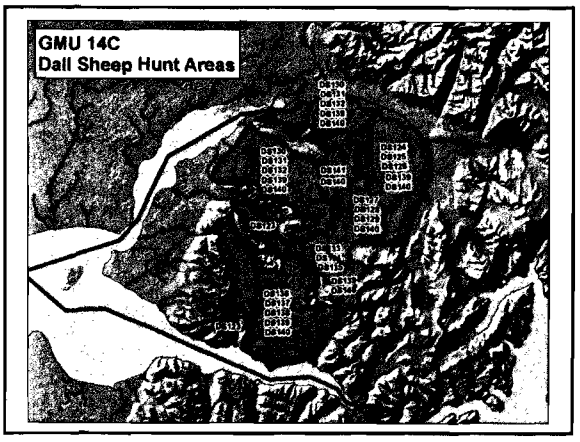


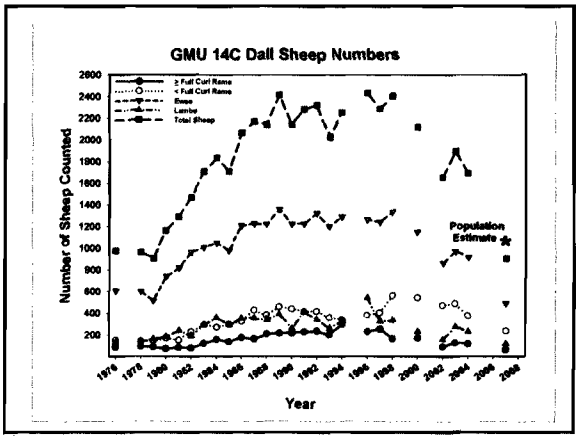


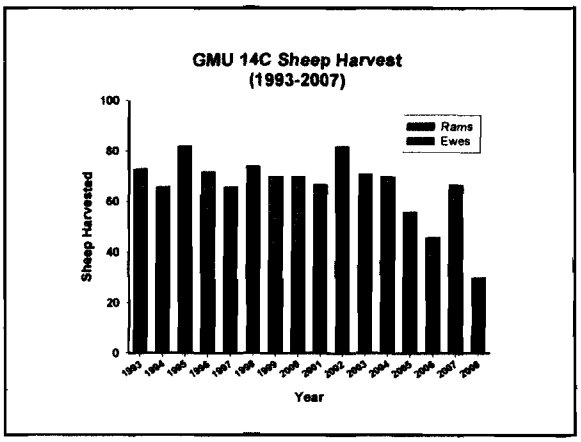
Dall Sheep

Status: Approximately 1130 sheep

Harvest: Drawing permits only, about 60-70 sheep/year







Dall Sheep

Status: Approximately 1130 sheep

Harvest: Drawing permits only, about 60-70 sheep/year

Management Activities:

- Annual aerial surveys
  - *Last complete survey 2004*
  - *Partial survey 2007*

Issues:

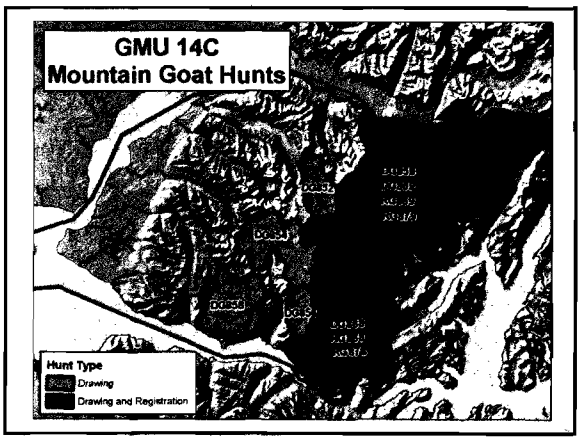
- Declining population numbers

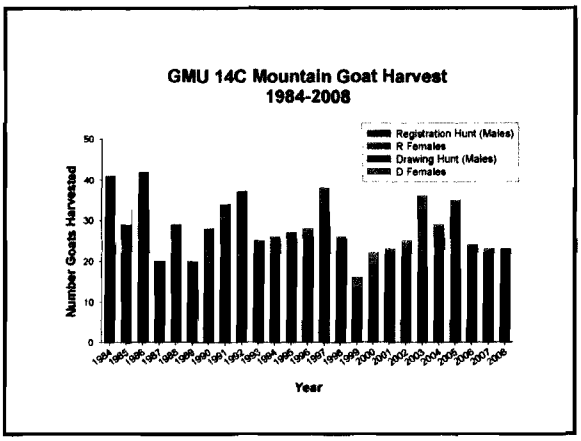
Proposals 14-20, 208

Mountain Goats

Status: Estimated 600-900 goats based on partial surveys

Harvest: Drawing and registration permits, 25-35 goats annually, about 60% billies





Mountain Goats

Status: Estimated 600-900 goats

Harvest: Drawing and registration hunts, 25-35 goats annually, ~60% billies

Management Activities: Aerial surveys incidental to sheep surveys

Issues:

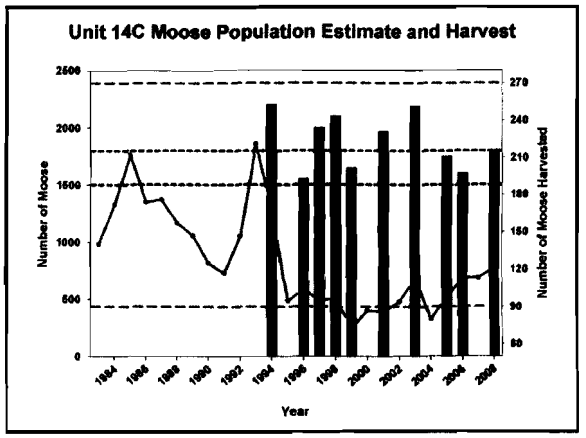
- Lack of current population estimate
- Increased human winter activities

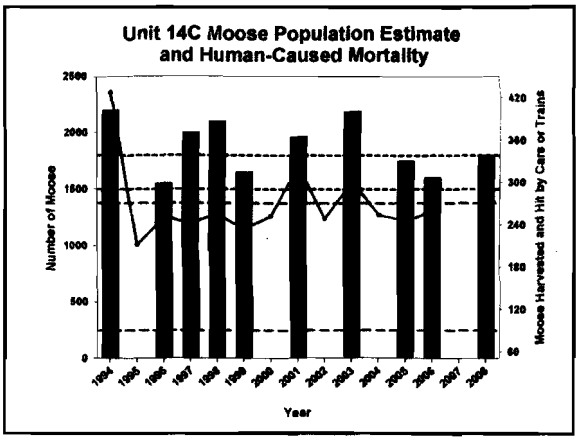
Proposal 4

Moose

Status: about 1800 moose
45 bulls:100 cows
30 calves:100 cows

Harvest: Majority by drawing permit, also registration & general seasons, about 95 moose/year





Moose

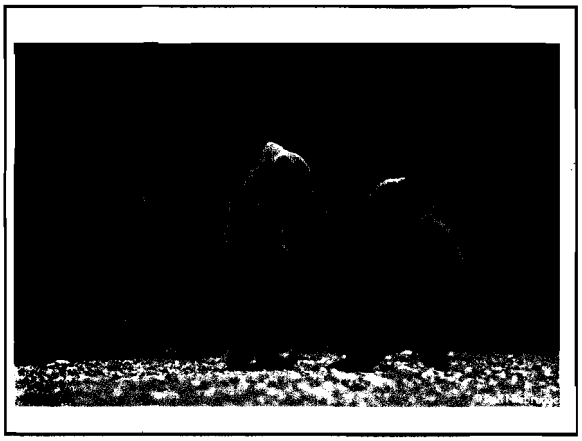
Management Activities:

- Annual composition counts
- Annual census on Ft. Richardson, Elmendorf, and upper Ship Creek
- Urban moose management

Issues:

- Moose-vehicle collisions
- Over-browsing
- Habitat fragmentation and destruction

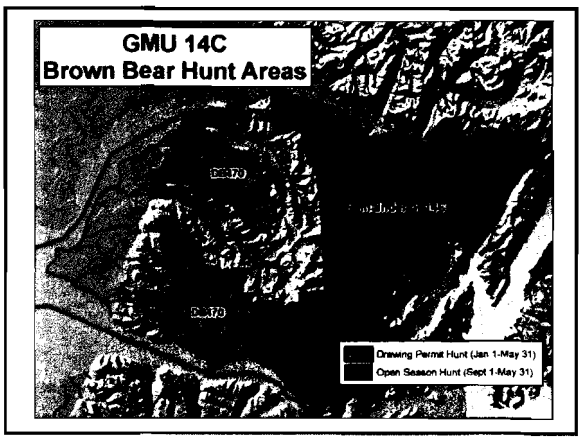
Proposals 5, 7-12

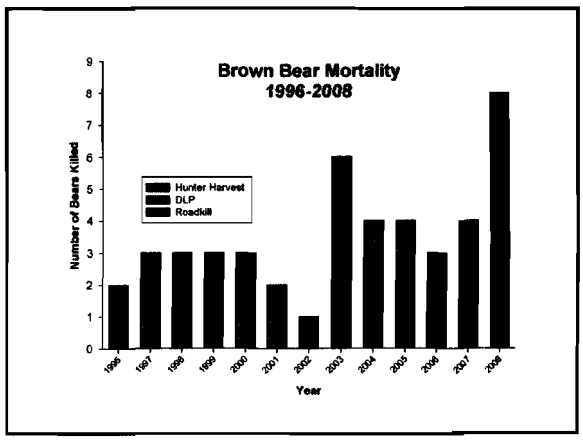


Brown Bears

Status: 65+ brown bears (rough estimate)

Harvest: Drawing and general season hunt, seldom taken by hunters but DLPs and roadkills





Brown Bears

Status: 65+ brown bears (rough estimate)

Harvest: seldom taken by hunters but DLPs and roadkills

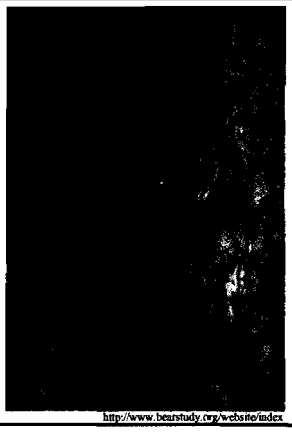
Management/Research:

- Monitoring of urban brown bears
- Research of brown bears on military bases

Issues:

- Human/bear encounters
- Spawning salmon and moose calves in neighborhoods and city parks

Proposals 1-3

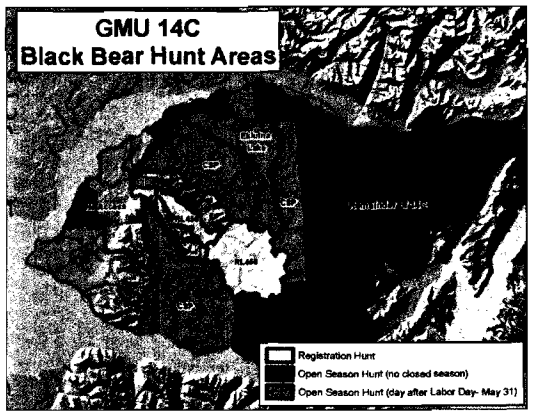


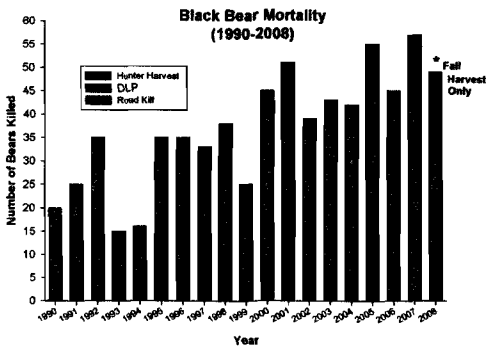
Black Bears

Status: 250-350 black bears

Harvest:

- Registration and general season hunts, about 30-40 bears/year
- DLPs and roadkills, about 10-20 bears/year





Black Bears

Status: 250-300 black bears

Harvest: 40-60 bears/year

Management/Research:

- 2 registration permit hunts
- Tracking urban bears
- Anchorage Bear Committee

Issues:

- Human/bear conflicts
- Garbage, birdseed, pet food

Furbearers

Status (fall): ~200-300 beavers, 25-35 wolves, 20 wolverines

Harvest: ~10-30 beavers, 0-4 wolves, 10-25 marten, 0-6 wolverines, 0-3 river otters, 0-5 lynx

Management/Research:

- Fur sealing
- Monitoring populations

Issues:

- Urban beavers
- Wolf-human interactions
- Wolverine population status
- Trapping in urban areas and parks

Proposals 20-28

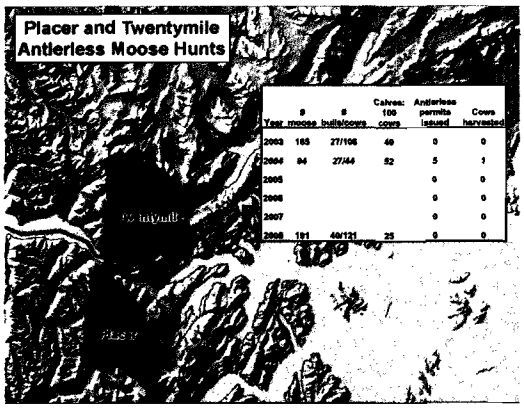
Proposal 12

Effect of Proposal: Reauthorize the antlerless moose hunt in the Twentymile, Portage, and Placer drainages of Units 7 and 14C

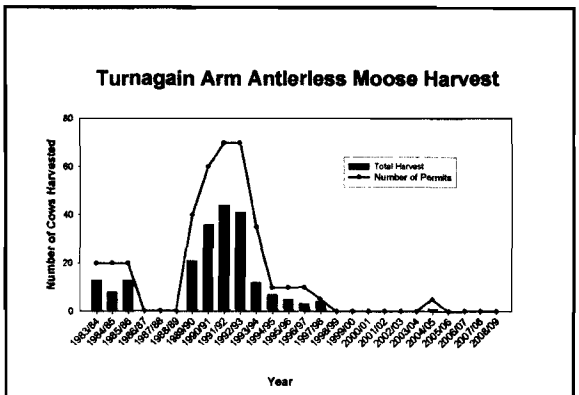
Department Recommendation: Adopt

Rationale: Department proposal

Anchorage F&G Advisory Committee Approved



Year	moose	bulls/cows	Calves: 100 cows	Antlerless permits issued	Cows harvested
2003	185	27/106	49	0	0
2004	84	27/44	52	5	1
2005				0	0
2006				0	0
2007				0	0
2008	181	49/131	25	0	0



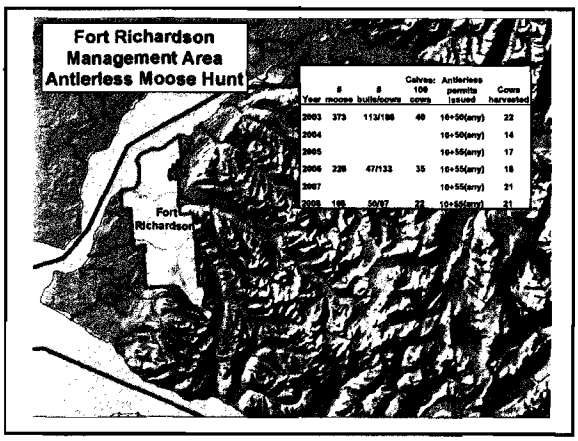
Proposal 7

Effect of Proposal: Reauthorize the antlerless moose hunt on Fort Richardson in Unit 14C

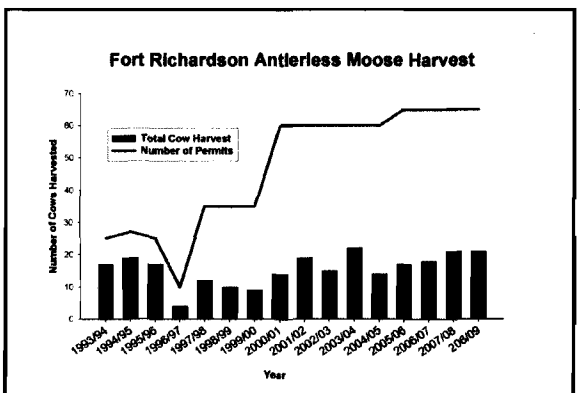
Department Recommendation: Adopt

Rationale: Department proposal

Anchorage F&G Advisory Committee Approved



Year	moose	bulls/cows	Calves: 100 cows	Antlerless permits issued	Cows harvested
2003	373	113/186	49	10+50(any)	22
2004				10+50(any)	14
2005				10+55(any)	17
2006	226	47/133	35	10+55(any)	18
2007				10+55(any)	21
2008	195	50/97	22	10+55(any)	21



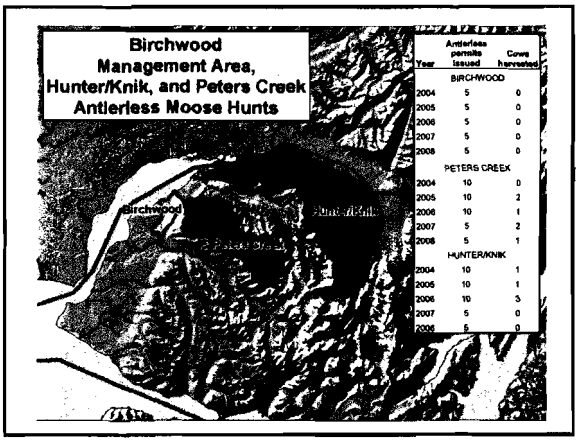
Proposal 9

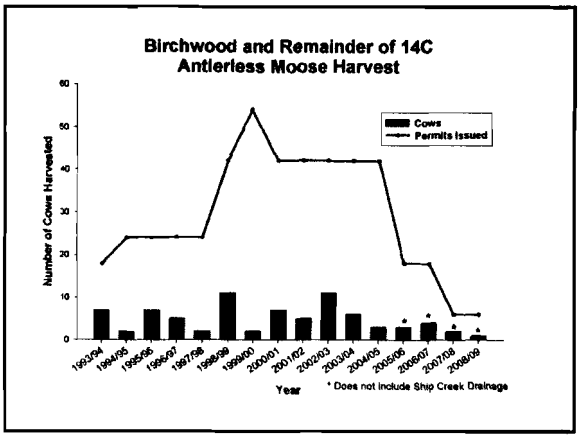
Effect of Proposal: Reauthorize the antlerless moose hunt in the Birchwood Management Area and the remainder of Unit 14C

Department Recommendation: Adopt

Rationale: Department proposal

Anchorage F&G Advisory Committee Approved





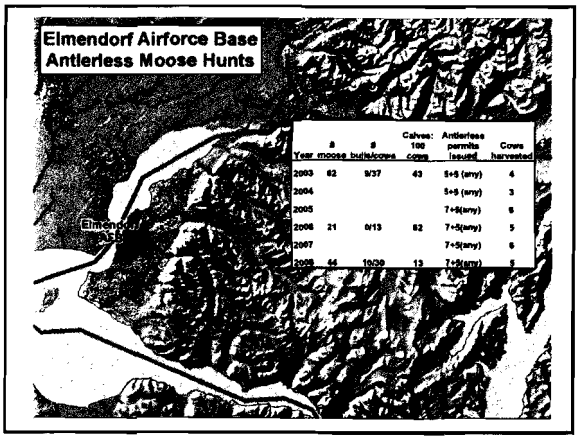
Proposal 10

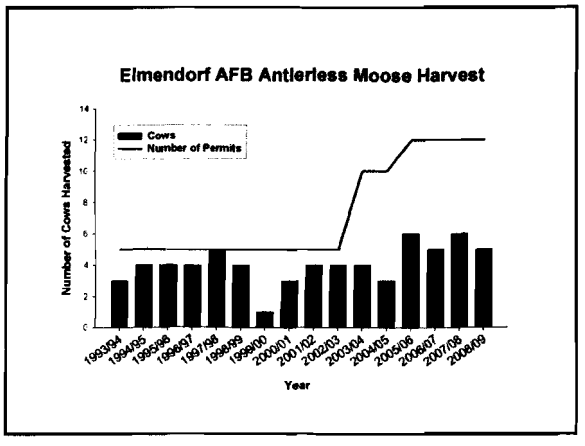
Effect of Proposal: Reauthorize the antlerless moose hunt on Elmendorf AFB in Unit 14C

Department Recommendation: Adopt

Rationale: Department proposal

Anchorage F&G Advisory Committee Approved





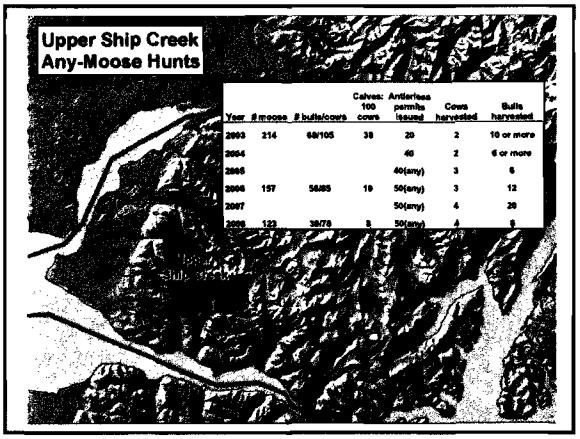
Proposal 11

Effect of Proposal: Reauthorize the antlerless moose portion of the any-moose drawing permit hunt In the upper Ship Creek drainage in Unit 14C

Department Recommendation: Adopt

Rationale: Department proposal

Anchorage F&G Advisory Committee Approved



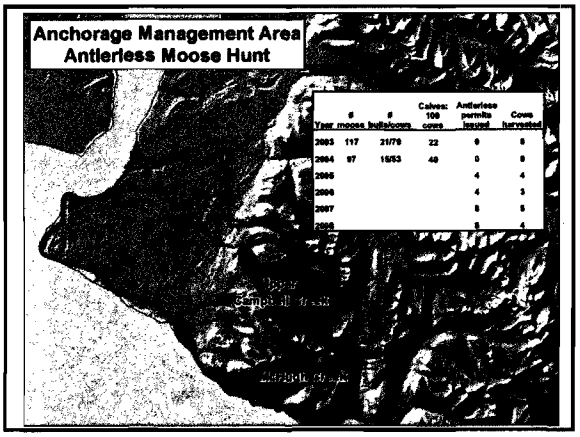
Proposal 8

Effect of Proposal: Reauthorize the antlerless moose hunt in the Anchorage Management Area

Department Recommendation: Adopt

Rationale: Department proposal

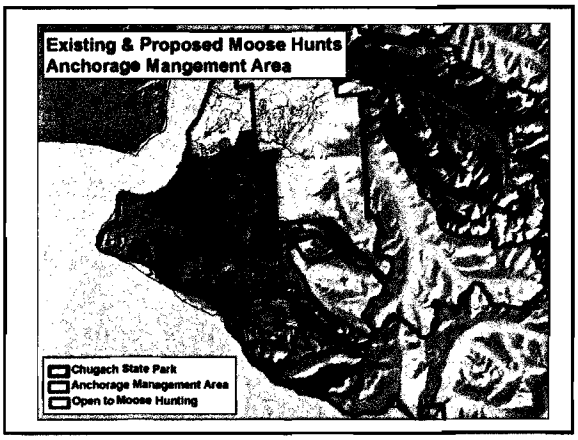
***NOT** Approved by Anchorage F&G Advisory Committee*



Proposal 5

Effect of Proposal: Establish new moose hunt areas in the Anchorage Management Area; issue minimum 20 permits, including at least 1 bull permit; and remove department's discretion

Department Recommendation: Do not adopt



Proposal 5

Effect of Proposal: Establish new moose hunt areas in the Anchorage Management Area; issue minimum 20 permits, including at least 1 bull permit; and remove department's discretion

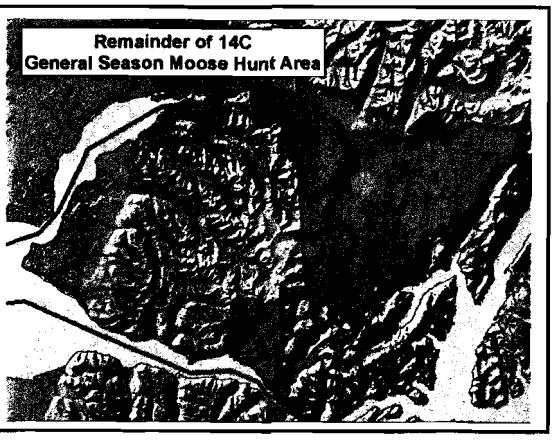
Department Recommendation: Do not adopt

Rationale:
- Unable to obtain city's permission to hunt in city parks, such as Bicentennial Park
- Creating a trophy bull hunt will lose public support for the hunt
- Permits limited due to number of other users – harvesting cows greater population effect
- Without department's discretion, may lose support of park advisory committee and Anchorage residents

Proposal 6

Effect of Proposal: Establish a November 1-10 archery season for bull moose in the remainder of Unit 14C

Department Recommendation: Do not adopt



Proposal 6

Effect of Proposal: Establish a November 1-10 archery season for bull moose in the remainder of Unit 14C

Department Recommendation: Do not adopt

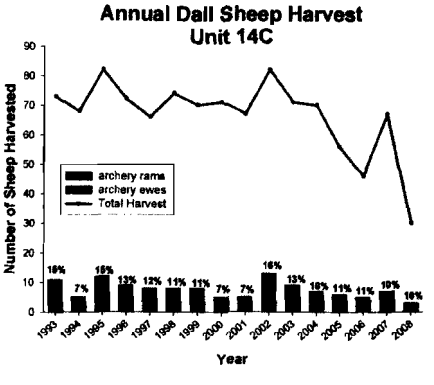
Rationale:
- Recently established hunts have increased harvests
- Harvestable surplus is low in these hunt areas
- Registration hunt for any bull would be popular and difficult to manage without exceeding harvest objectives

Proposal 208

Effect of Proposal: Eliminate drawing ewe permits in Units 14C and 7.

Department Recommendation: Do not adopt

Rationale:
- Discretionary authority exists to limit permit numbers.
- Ewe permits have already been eliminated.
- Archery take is small proportion of overall harvest and insignificant at a population level.

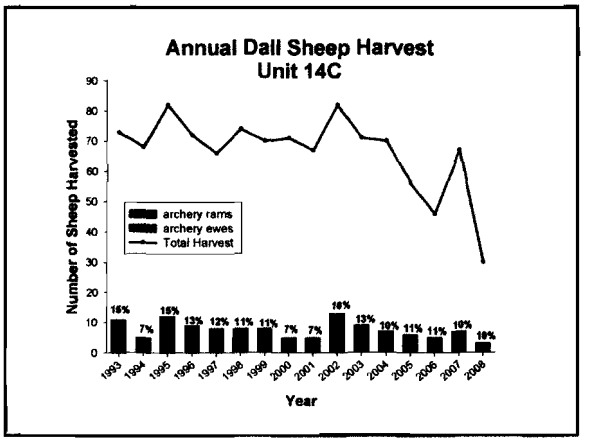


Proposal 18

Effect of Proposal: Change the bag limit for archery-only Dall sheep permit hunts in Unit 14C (DS140 and DS141) from any sheep to full curl only.

Department Recommendation: Do not adopt

Rationale:
- Archery take is small proportion of overall harvest and insignificant at a population level.
- Elimination of ewe-only hunts will address population declines



Proposal 15

Effect of Proposal: Close sheep hunting to nonresidents in Unit 14C.

Department Recommendation: Take no action

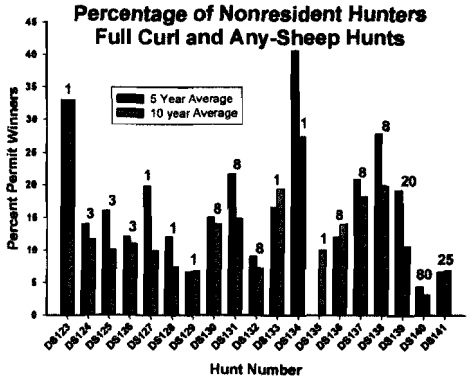
Rationale:
- Allocation issue
- See Proposal 14

Proposal 14

Effect of Proposal: Limit the number of drawing permits for nonresident hunters to ten percent or less for Dall sheep in Unit 14C

Department Recommendation: No recommendation

Rationale:
- Allocation issue



Proposed Resident/Nonresident Allocation

- 10-year average for drawing hunts:
  - Nonresidents: 13% of total full curl rifle permits
  - Nonresidents: 5% of total archery-only permits
- Allocate *up to* 13% of total permits to nonresidents in each of the 6 hunt areas, excluding the "Central" hunt area (DS123)
- Distribute nonresident permits equally across seasons for each hunt area when possible
- Randomly select season and area for nonresident permits when availble permit numbers are too few to distribute evenly.

Example

- Total rifle permits in 2009/10: 83 (*up to* 13% = 11 permits)
- Permit Areas
  - Central: 1 permit (resident only)
  - Northeast: 9 permits (13% = 1 nonresident permit)
  - Northwest: 24 permits (13% = 3 nonresident permits)
  - Southwest: 24 permits (13% = 3 nonresident permits)
  - West: 20 permits (13% = 3 nonresident permits) (late season)
  - Upper Eagle River and East Eklutna: 3 permits each area
    - (1 nonresident permit will be selected randomly each year for area and season)
- Seasons for Northeast, Northwest, Southwest, Upper Eagle River, and East Eklutna
  - Aug 10-Aug 22
  - Aug 23-Sept 4
  - Sept 5-Sept 17

Example

- Total archery permits in 2009/10: 105 (*up to* 5% = 5 permits)
- Permit Areas
  - West: 80 permits (5% = 4 nonresident permits)
  - West Eklutna: 25 permits (5% = 1 nonresident permit)

Proposal 16

Effect of Proposal:

1. Limit the number of nonresidents permits for Dall sheep hunts in Unit 14C to one tag per hunt or 10% of total permits issued (per hunt or unit-wide?), **OR**
2. Create separate drawing permit hunts for nonresident and resident hunters, with no more than 10% of the permits allocated to nonresidents (per hunt or unit-wide?)

Department Recommendation: Take no action

Rationale:

• Allocation issue

Proposal 17

Effect of Proposal:

1. Allocates 5-25% of full-curl drawing sheep permits in Unit 14C to nonresidents.
2. Requires nonresidents planning to hunt with resident relative of 2nd degree of kindred to apply for resident-only sheep permits.
3. Creates additional nonresident-only permit hunts in Unit 14C.
4. Specifies the number of permits for each hunt.

Proposal 17 (cont.)

Allocates permits as follows:

DS123: 1 permit (resident or nonresident)
DS124-126: 3 permits each hunt (resident only)
DS127-129: 1 permit each hunt (resident only)
DS130-131: 8 permits each hunt (7 residents and 1 nonresident)
DS132: 7 permits (resident only)
DS133-135: 1 permit each hunt (resident only)
DS136-137: 8 permits each hunt (7 residents and 1 nonresident)
DS139: 20 permits (18 residents and 2 nonresidents)
DS140: 80 archery permits (76 residents and 4 nonresidents)
DS141: 26 archery permits (23 residents and 3 nonresidents)

Proposal 17 (cont.)

Creates additional nonresident-only drawing permit hunts (no bag limit specified)

14C Northeast: 1 permit (10 August -17 September)
14C East Eklutna: 1 permit (10 August – 17 September)
14C Northwest: 1 permit (10 August – 17 September)
14C Upper Eagle River: 1 permit (10 August-17 September)
14C Southwest: 1 permit (10 August-17 September)

Proposal 17 (cont.)

Department Recommendation: Do Not Adopt

Rationale:
- Allocation issue
- However, if the Board specifies the number of permits to be issued in each hunt area, the department has no flexibility to increase or reduce the number of permits when the sheep population changes

Proposal 19

Effect of Proposal: Limit the number of drawing permits for nonresident hunters for Dall sheep in Unit 14C by one of the following:
1. Close nonresident season, OR
2. Allocate up to 10% of permits to nonresidents, OR
3. Close hunts from August 10-22 to nonresidents

Department Recommendation: Take no action

Rationale:
- Allocation issue

Proposal 13

Effect of Proposal: Require a guide-client agreement for nonresident applicants for drawing sheep hunts in Unit 14C

Department Recommendation: Take no action

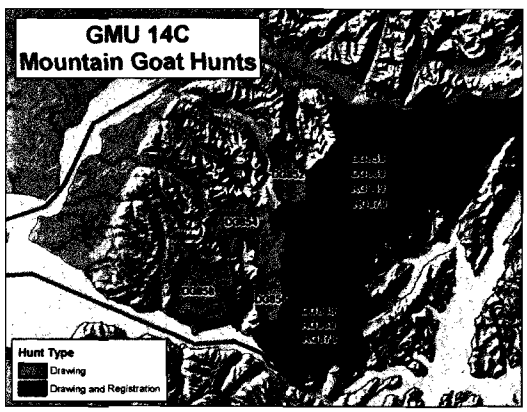
Rationale:
- Not necessary for implementation of sheep hunting in GMU 14C

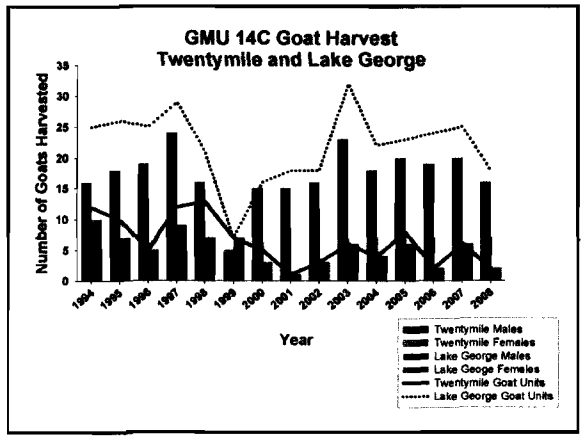
Proposal 4

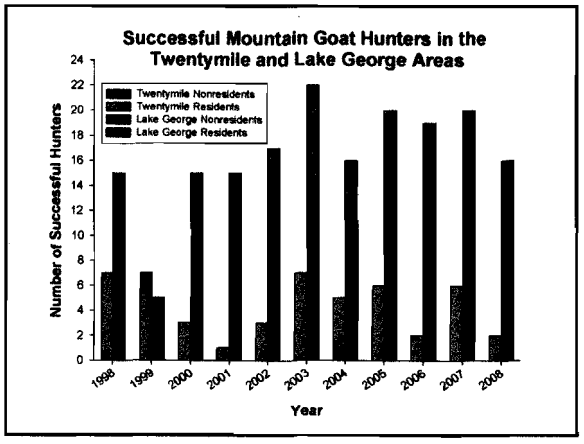
Effect of Proposal: Replace existing drawing permit hunts for goats in the Twentymile and Lake George areas of Unit 14C with registration permit hunts.

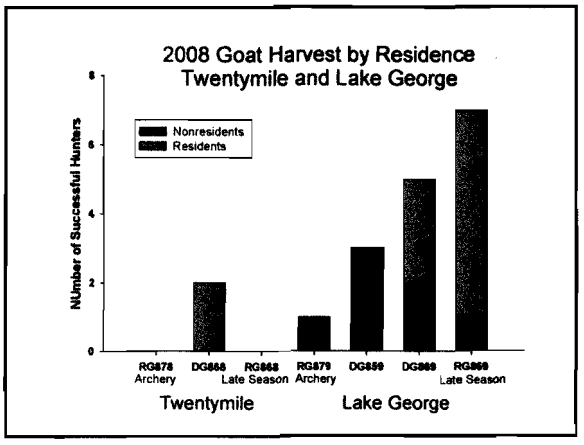
Department Recommendation: Do not adopt

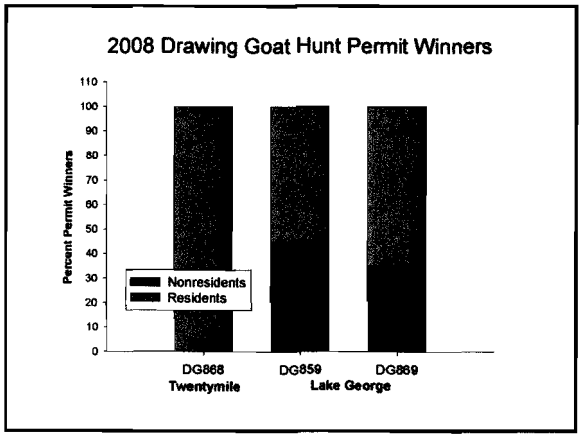
Rationale:
- Difficult to regulate participation/harvest
- Over-harvests are likely
- Only one year under the new hunt system
- Combination of drawing and registration hunts is easier to administer, less likely to overharvest goats, and more predictable for applicants









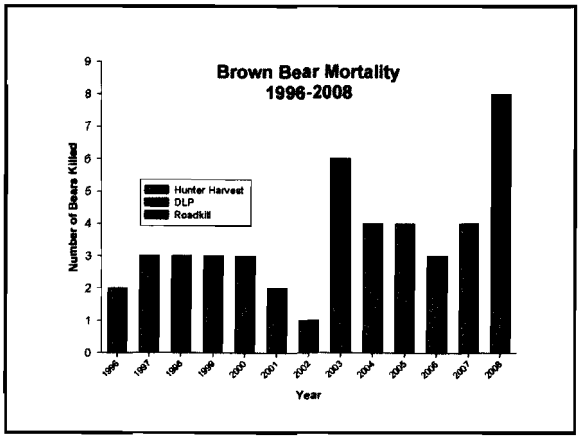


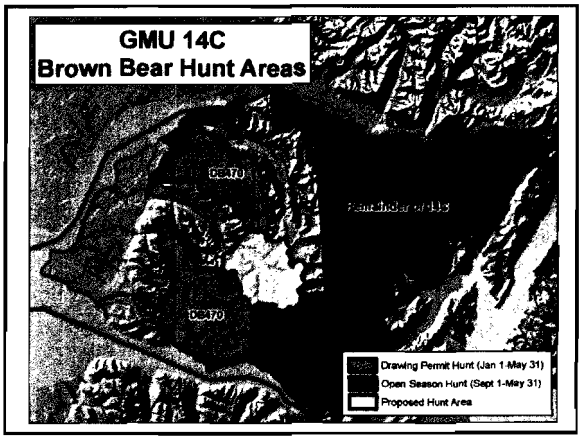
Proposal 2

Effect of Proposal: Add upper Eagle River drainage to the area where brown bears may be hunted with a drawing permit in the Chugach State Park Management Area in Unit 14C. Extend season from day after Labor Day through May 31.

Department Recommendation: Adopt

Rationale: Department proposal



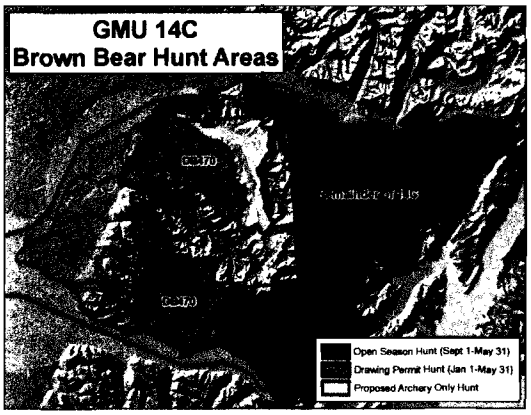


Proposal 3

Effect of Proposal: Create an archery-only brown bear drawing hunt in the Eklutna Lake Management Area within Chugach State Park.

Department Recommendation: Adopt

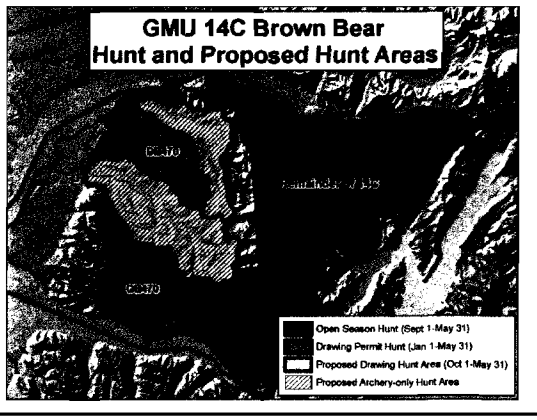
Rationale: Department proposal



Proposal 1

Effect of Proposal: Open new hunt areas, create a registration archery hunt, and add a fall hunting season for drawing and registration brown bear hunts in Unit 14C.

Department Recommendation: Take no action



Proposal 1

Effect of Proposal: Open new hunt areas, create a registration archery hunt, and add a fall hunting season for drawing and registration brown bear hunts in Unit 14C.

Department Recommendation: Take no action

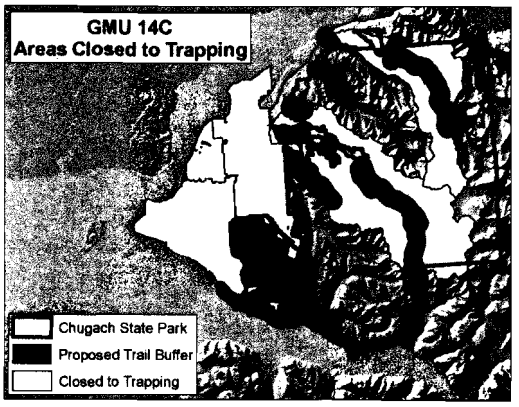
Rationale:

- Establishes an archery-only registration hunt same time and place as drawing hunt, or shortens drawing hunt for rifle hunters to create archery season.
- Adds entire Eagle River drainage, including areas where houses are.
- Extends fall season (from Oct. 1 instead of DALD)
- Adds entire Eklutna drainage

Proposal 20

Effect of Proposal: Close trapping within 1 mile of established trails in Unit 14C.

Department Recommendation: Do not adopt



Proposal 20

Effect of Proposal: Close trapping within 1 mile of established trails in Unit 14C.

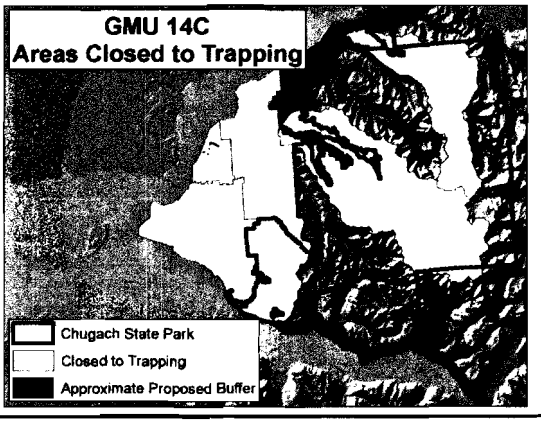
Department Recommendation: Do not adopt

Rationale:
- Trapping is prohibited, or restricted to a limited suite of furbearers, in most of Unit 14C
- This proposal would close trapping in most of Chugach State Park and a large portion of the remainder of Unit 14C, depending on definition of an "established" trail

Proposal 21

Effect of Proposal: Close trapping in Chugach State Park Management Area, in Unit 14C, within 1 mile of community boundaries.

Department Recommendation: Do not adopt



Proposal 21

Effect of Proposal: Close trapping in Chugach State Park Management Area, in Unit 14C, within 1 mile of community boundaries.

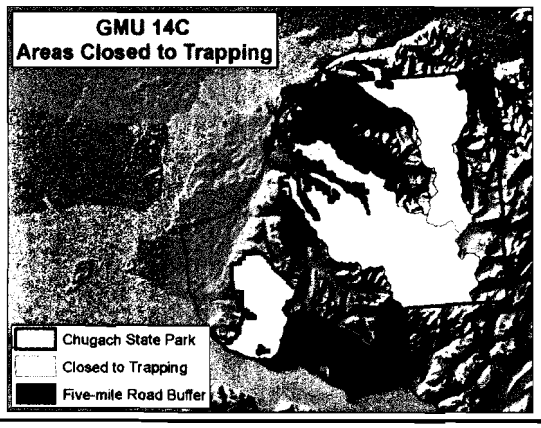
Department Recommendation: Do not adopt

Rationale:
- Trapping is currently restricted to a limited suite of furbearers in the Chugach State Park M.A.
- "Community" is not defined and boundaries may be difficult to delineate.
- This proposal could prohibit trapping within 1 mile of Old Glenn Highway, Chugiak, Birchwood, Eagle River, Indian, Bird, and Girdwood.

Proposal 23

Effect of Proposal: Close trapping in Chugach State Park Management Area, in Unit 14C, within 5 miles of any road.

Department Recommendation: Do not adopt



Proposal 23

Effect of Proposal: Close trapping in Chugach State Park Management Area, in Unit 14C, within 5 miles of any road.

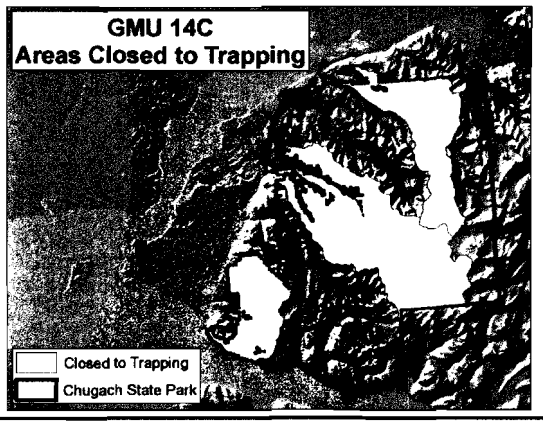
Department Recommendation: Do not adopt

Rationale:
- Trapping is currently restricted to a limited number of furbearers in the Chugach State Park M.A.
- This proposal would close all trapping in Chugach State Park except in small portions of the headwaters of Hunter, Peters, Ship, and Bird creeks

Proposal 25

Effect of Proposal: Prohibit use of Conibear traps for trapping wolverines and coyotes in Chugach State Park Management Area, in Unit 14C.

Department Recommendation: Do not adopt



Proposal 25

Effect of Proposal: Prohibit use of Conibear traps for trapping wolverines and coyotes in Chugach State Park Management Area, in Unit 14C.

Department Recommendation: Do not adopt

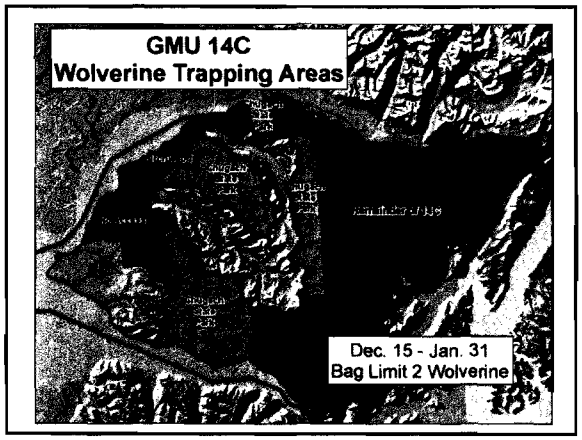
Rationale:
- Few, if any, coyotes trapped in CSP each year
- Only about 1% of Southcentral trappers report using Conibear traps for coyotes
- Unlikely that this regulation would reduce trapping effort for coyotes in the park

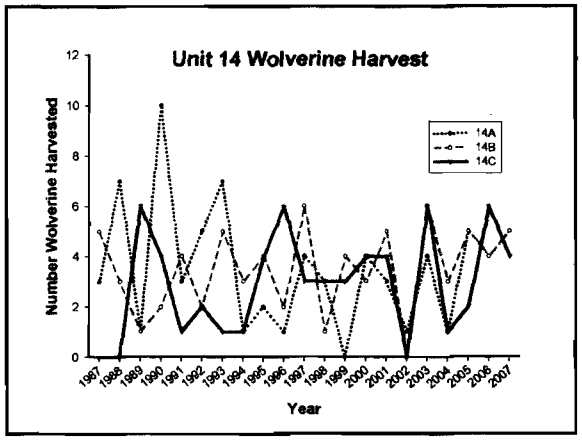
Proposal 27

Effect of Proposal: Close wolverine trapping in Chugach State Park Management Area, in Unit 14C.

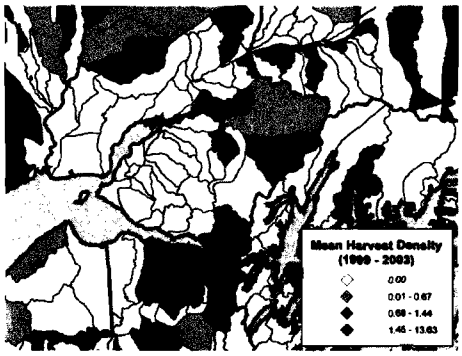
Department Recommendation: Adopt

Rationale: Joint ADF&G/DNR proposal



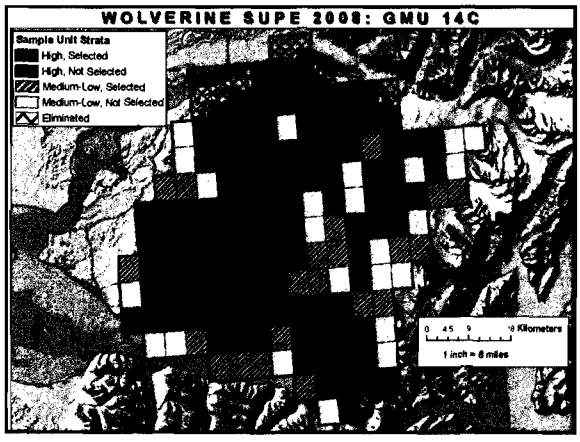


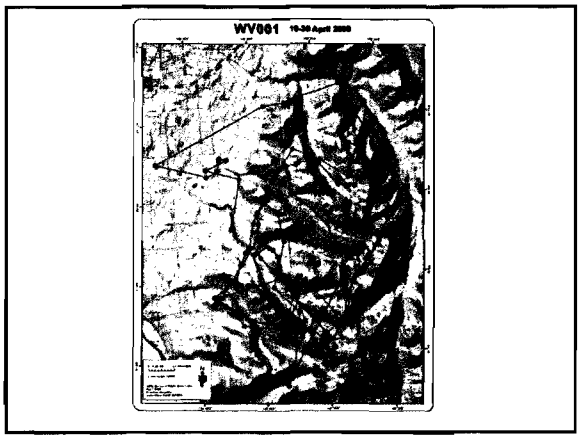
Average annual wolverine harvest/1000 km^2: 1999-2003

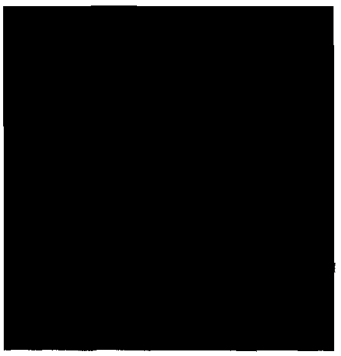


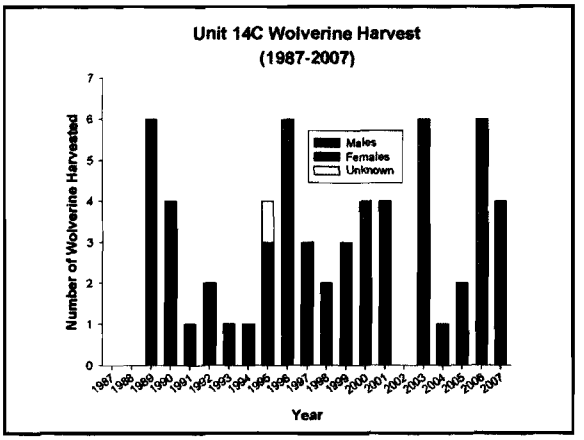
Population estimates

- 2 aerial surveys (1995, 2008) conducted in Unit 14C
- The 2008 survey was precise and included all high quality and most marginal wolverine habitat in Unit 14C.
- Both Unit 14C surveys found late winter/spring densities of wolverines about same as portions of Unit 7 and 13.
- The estimated post-trapping season densities in Unit 14C were 4:8 and 4.9 wolverines/1000 km^2. Adding the reported harvest, the estimated fall population was 18 wolverines in 1994 and 22 wolverines in 2007 (the falls preceding the aerial surveys).









Harvest levels vs. sustainable harvests

- Harvests in Unit 14C have increased from 2.7 (1988-2002) to 3.8 (2003-2007).
- Potential rate of increase for untrapped populations of wolverines about 6.4% across North America.
- Rate of increase for trapped populations is negative—i.e., experts believe wolverine harvests are maintained by immigration from nearby refugia.
- The estimated average annual harvest in Unit 14C (1988-2002) was 12.7% (2.7 of ~22 wolverines/yr). This would have exceeded a sustainable level, except for immigration, primarily from Unit 6D and Chugach State Park.
- Recent harvests (2006, 2007) of 22.7% (5 of ~22 wolverines/yr) are probably not sustainable even with immigration.
- In 2006-07 and 2007-08, 8 of 10 wolverines trapped were females (statewide harvest was 29.9% females same period).

Returning to a sustainable harvest

- We did not raise concern of overharvest after 1995 population estimate.
- However, we did recommend not opening wolverine trapping in Chugach State Park in 2007 because it was a refugium which maintained high harvests in adjacent portions of Unit 14C.
- Main reason for allowing wolverine trapping in Chugach State Park was to reduce by-catch by lynx trappers; however, no wolverine was ever reported trapped by a lynx trapper in park.
- Federal subsistence season: 16 weeks (Nov. 10 to Feb. 28) – adopted state trapping season from Unit 6D.
- We will ask federal subsistence board to reduce trapping season to match state season.

Returning to a sustainable harvest (cont.)

- Why not maintain existing trapping opportunity and conduct another survey in a few years? The 2008 survey cost $13,000 – not likely to do it again for a decade or more.

- Maintain trapping season of Dec. 15 – Jan. 31 because most females trapped in Nov.-Dec. and trappers will exceed harvestable surplus with longer season

Sex Ratio in Unit 14C Wolverine Harvest

Regulatory year		Nov	Dec	Jan	Total
2002/03 to 2006/07	Male		4	2	6
	Female	2	4	1	7
1993/94 to 2001/02	Male		4	12	16
	Female		6	4	10
1993/94 to 2006/07	Male		8	14	22
	Female	2	10	5	17

Trapping season: Nov. 10 – Jan. 31

Proposal 24

Effect of Proposal: Close wolverine trapping in Chugach State Park Management Area, in Unit 14C

Department Recommendation: Take No Action

Rationale:
- Same as joint ADF&G/DNR proposal

Proposal 26

Effect of Proposal: Close wolverine trapping in Chugach State Park Management Area, in Unit 14C.

Department Recommendation: Take no action

Rationale:
- Same as joint ADF&G/DNR proposal

Proposal 28

Effect of Proposal: Close wolverine trapping in Chugach State Park Management Area, in Unit 14C.

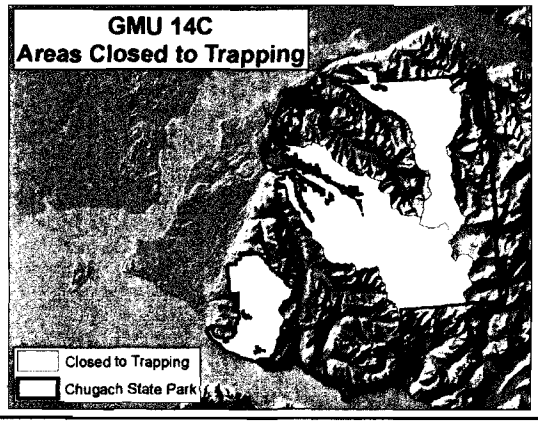
Department Recommendation: Take no action

Rationale:
- Same as joint ADF&G/DNR proposal

Proposal 22

Effect of Proposal: Close lynx trapping in the Chugach State Park Management Area, in Unit 14C.

Department Recommendation: Do not adopt



Proposal 22

Effect of Proposal: Close lynx trapping in the Chugach State Park Management Area, in Unit 14C.

Department Recommendation: Do not adopt

Rationale:
- Trapping is prohibited in those portions of Chugach State Park in the Eagle River, Eklutna, and Anchorage management areas.
- Since 1977, 27 lynx reported harvested in Unit 14C (<1 lynx/yr).
- In past 31 years, only about 2-11 lynx harvested in CSP.

RC 94

St Louis, Rita G (DFG)

From: Denver Urlaub [denver_urlaub@yahoo.com]
Sent: Monday, March 02, 2009 10:29 PM
To: St Louis, Rita G (DFG)
Cc: Stacey Urlaub
Subject: Bear trapping

Rita,

I am amazed that this issue is being discussed so quietly.

Black bear are one of Alaska's under estimated resources.

I am an avid hunter. I hunt black bear. In the the four years my wife and I have lived here we have taken 3. Stacey 1, and I two.

I do not think trapping is an issue that should be discussed in Anchorage.
The city has no perspective of the real Alaska.

I do think our limits of three person per year are very liberal.
It would be better to offer a fall baiting season than just trapping black bear.

Also, I think wolves are much big predators of Moose than Black bear.

Brown bear maybe more of a Moose predator than Black bear as well.

I do not know who should really get these comments.
I appreciate your keeping me posted on 20A moose info, but why did we not discuss this at the local advisory committee instead of in Anchorage?

Trapping should not be allowed for black bear.
I do support trapping for wolves and other smaller animals, but just the other day I came across a trap near my house that could have easily been harmful to my son or myself because of its placement.

I think more restrictions and education should be required on trappers just as you do for black bear baiting and bow hunters.

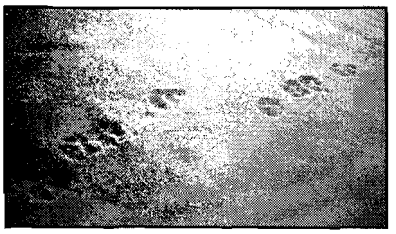
Please forward my comment to the appropriate person for this current discussion,
and cc me,
Thank you,
Denver Urlaub

Denver Urlaub

Earl Becker
3-3-09
Anchorage Research

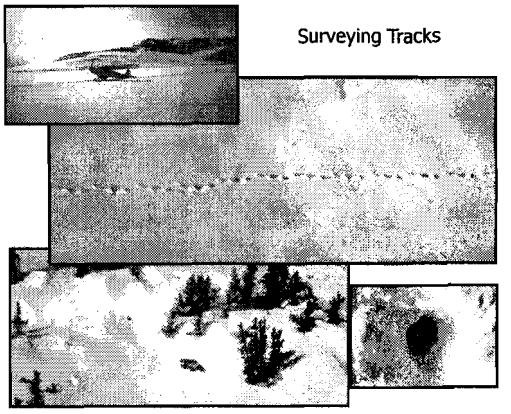
le 95

Estimating Wolverine Population Size
In GMU 14C using Tracks in the Snow.



Earl F. Becker -- Alaska Department of Fish and Game , Anchorage, Alaska
Howard N. Golden -- Alaska Department of Fish & Game, Anchorage, Alaska
Rick Sinnott -- Alaska Department of Fish & Game, Anchorage, Alaska
Jessy Coltrane -- Alaska Department of Fish & Game, Anchorage, Alaska

Surveying Tracks



Technique Overview

- Estimating low density species very hard
- Probability track sampling – worked w/ Ted Spraker to resolve Kenai lynx problem (different design than one used for wolverines)
- SUPE (Sample Unit Probability Estimator) idea fly sample units looking for fresh tracks.
- Once tracks are found follow forward and backward
  - Now know which sample units contain the track
  - Use above info. to get Prob(find Track)
  - If have Prob(find track) → Population Estimate

8-11 April 2008

Wolverine Track Survey obtains population estimate

Use a SUPE design (probability sampling)

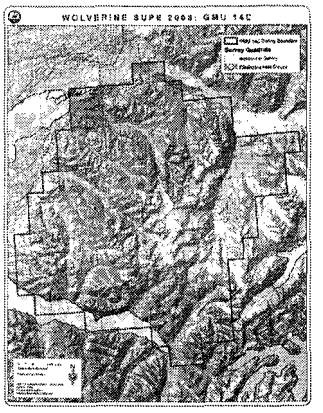
25 km² Sample Units (SU)

Use prior knowledge

Surveyed after snowstorm (3" to 23")

Thin snow cover eliminated 9 SUs in Eklutna and Knik River

Find and follow wolverine tracks



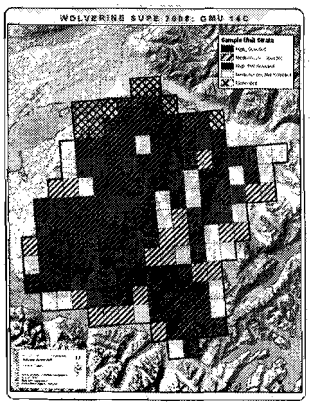
Stratify - likelihood of encountering fresh wolverine tracks

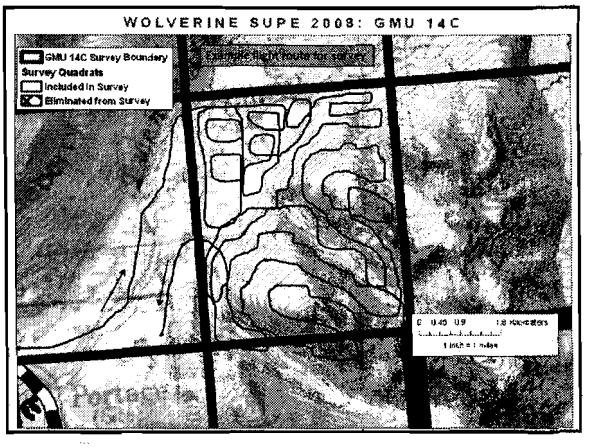
2 Strata (on tracks):
106 Highs, 45 Lows

Sample Fraction:
70.8% Highs & 51.1% Lows

Overall 98 of 151 SUs flown (64.9%)

Survey took 3 days of flying over a 4 day period. Length of time wolverine had to move was variable. Some additional snowfall in the Portage Valley area.





SUPE Surveys

Sample Unit Probability Estimator

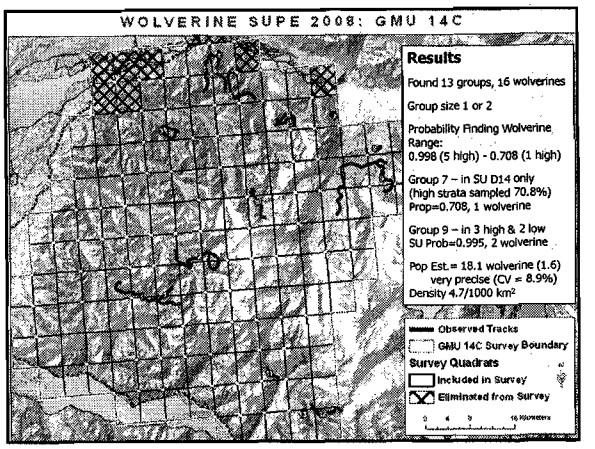
Stratified network sampling design

Basic Assumptions:

- All animals of interest move during study
- Tracks are readily recognizable from air
- Tracks are continuous
- Movements are independent of sampling process
- Pre- and post-snowstorm tracks can be distinguished
- Tracks in the searched sample units are not missed
- Tracks can be followed to determine all SUs containing tracks
- Group size is correctly enumerated

Additional assumptions for > 1 survey day:

- No animals move from unsampled to sampled areas under conditions resulting in no fresh tracks in unsampled areas
- No animals are double counted by moving from sampled to unsampled areas



Population Estimate

$$\hat{T}_y = \sum_{u=1}^{r} \frac{y_u}{p_u}$$

Examples

Group 7: P_7=0.708, y_7=1
1/0.708 =1.41 wolverine

Group 9: P_9=0.995, y_9=2
2/0.995 =2.01 wolverine

Table1. Wolverine density and precision estimates.

Survey Area	Date	Density	90% C.I.2	CV (%)	Type
Chugach Mts. (GMU 14C)	Feb. 1995	4.8	2.7 – 5.95	20.1	SUPE
Chugach Mts. (GMU 14C)	April 2008	4.9	4.1 – 5.76	8.9†	SUPE

† most precise wolverine estimate in Alaska
Density is reported as (number of wolverines/1000 km²).

SUPEPOP at ftp://ftpr3.adfg.state.ak.us/MISC/PROGRAMS/SUPEPOP/

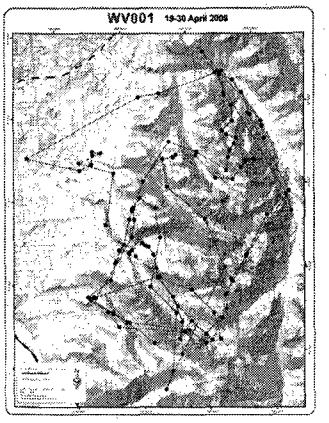
Key Assumption Test on Males

KEY ASSUMPTION: ALL WOLVERINE MOVE

GPS-collared male in Anchorage area (n=1)

Movement location every 30 minutes (some missing data)

Analysis of movement data - Key Assumption was reasonable for this male.



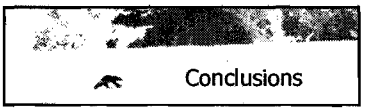
Key Assumption Test on Females

KEY ASSUMPTION: ALL WOLVERINE MOVE

GPS-collared female on Kenai Peninsula (n=1)

Movement location every 30 minutes (some missing data)

Analysis of movement data - Key Assumption was reasonable for this female.



Conclusions

- This survey excluded parts of Fort Richardson and the 9 northern sample units.
- SUPE is an efficient technique to obtain precise population estimate "snapshots" of wolverine
- 1995 and 2008 GMU 14C wolverine estimates were similar: 4.8 vs 4.9 wolverines/1000km²
- Chugach State Park is important wolverine habitat
- Refugia habitat is very important for wolverine
  - Chugach State Park has historically served as refugia within GMU 14C
  - GMU 13D and GMU 6 may be an important source of immigrating wolverine into GMU 14C
- Trapping wolverine in Chugach State Park opened in 2007

Acknowledgements

Pilots:
D. Filkill, J. DeCreft, M. Litzen, and M. Meekins

Observers:
E. Becker, H. Golden, R. Sinnott, J. Coltrane, T. Rinaldi, M. Snively, and M. Harrington

Assistance:
E. Solomon (ADF&G) for assistance in preparing the figures and survey maps

REFERENCES

BECKER, E. F. 1991. A terrestrial furbearer estimator based on probability sampling. Journal of Wildlife Management 55:730-737.

BECKER E. F., H. N. GOLDEN AND G. L. GARDNER. 2004. Using probability sampling of animal tracks in snow to estimate population size. Pages 248-270 (Chapter 13) *in W. L. Thompson (ed.) Sampling rare or elusive species: concepts and techniques for estimating population parameters. Island Press. Washington D. C., USA.*

BECKER, E. F., M. A. SPINDLER, AND T. O. OSBORNE. 1998. A population estimator based on network sampling of tracks in the snow. Journal of Wildlife Management 62(3):968-977.

GOLDEN, H. N., J. DAVID HENRY, E. F. BECKER, M. I. GOLDSTEIN, J. M. MORTON, D. FROST, Sr., and A. J. POE. 2007. Estimating wolverine population size using quadrat sampling of tracks in snow. Wildlife Biology 13(Suppl 2):52-61.

HORVITZ, D. G., AND D. J. THOMPSON. 1952. A generalization of sampling without replacement from a finite universe. Journal of the American Statistical Association 47:663-685.

THOMPSON, S. K. 1992. Sampling. John Wiley and Sons, New York, New York, USA.

Proposal 163A **RC 96**

5 AAC 85.040. Hunting seasons and bag limits for goat. (a) ...

Units and Bag Limits	**Resident Open Season (Subsistence and General Hunts)**	**Nonresident Open Season**
(4)		
Unit 8, that portion of Kodiak Island south and west of a line extending along the Spiridon River, following the North Fork of the Spiridon to its headwaters then going southwest following the spine of the island over Koniag peak to the headwaters of the South Fork of Midway Creek, then downstream on Midway Creek to Midway Bay		
1 goat by registration permit only; the taking of nannies with kids is prohibited	**Aug. 20 - Dec. 15 (General hunt only)**	**Aug. 20 - Dec. 15**
Remainder of Unit 8		
1 goat by drawing permit only; up to 500 permits may be issued; the taking of nannies with kids is prohibited	Aug. 20 - Oct. 25 (General hunt only)	Aug. 20 - Oct. 25
1 goat by registration permit only; the taking of nannies with kids is prohibited	Nov. 1 - Dec. 15 (General hunt only)	No open season.

RC 97

Anchorage Hillside Moose Hunt

The anchorage AC voted 13-1 upon reconsideration to support Proposal 5 (submitted by the Anchorage AC) to expand the moose hunt in the Anchorage Management area. The member in opposition made a motion to reconsider Proposal 8. The motion to reconsider Proposal 8 failed to get a second.

The Anchorage AC does not wish to eliminate the opportunity to hunt moose in the Anchorage Management Area but to expand the hunt.

The Anchorage AC is frustrated that the area biologist and Region II managers have failed to make any meaningful effort to expand moose hunting, or any other option, in Anchorage to address the overpopulation of moose. Anchorage residents "harvest" over 150 moose per year with vehicles resulting in multiple deaths, dozens of injuries, and over $2.5 million dollars in vehicle damage. Hunters should have the opportunity to hunt more moose in Anchorage and managers should manage moose under sustained yield principles.

The Anchorage AC feels the hillside hunt has been administered only to appease Anchorage hunters and not as a meaningful management tool. A harvest of 5 moose in a population of about 1000 is insignificant and staff should work with private landowners and the Municipality to expand the harvest.

Submitted by Anchorage AC

Aaron Bloomquist

5/4/2009

RC 98

To the Board of Game:

To whom it may concern.

Statistics Per V.A. Alaska
over 74,000 disabled vets in Alc
10% are 50% disabled or
above (About 7,400 Alaskans)
There are at most 200 military
rehabilitation Soldiers in Alaska.

Proposal 242 + 243 -

There are quite a few disabled Veterans here in our great State. Many are unable to hunt, like they would like due to their disabilities. Due to many being over 50% disabled, per V.A. and not per Military review, it is understandable to open certain areas for disabled Vets only.

As many Soldiers are also coming back with wounds, and other problems. Those Soldiers are not usually rehabilitated here in Alaska - but at larger Military installations.

Many other States do hunting areas like this for their disabled Veterans, one example is Texas. So it is not fair to open all permits for Alaskans Disabled and unknown Military Active Disabled at the same time.

Please let the Alaskan Disabled Resident Veterans be able to have first pick - then let the Military Active Disabled have what is left of any permits left.

Thank you.

Christine Mahnken +
Ron Shartzer - DAV.
Disabled American Vets

Proposal 4A **RC**

5 AAC 85.040. Hunting seasons and bag limits for goat. (a) ...

Units and Bag Limits	**Resident Open Season (Subsistence and General Hunts)**	**Nonresident Open Season**
(7)		
...		
Unit 14(C), [1 GOAT BY DRAWING PERMIT ONLY; UP TO 150 PERMITS MAY BE ISSUED; THE TAKING OF NANNIES WITH KIDS IS PROHIBITED]	[SEPT. 1 - OCT. 15] [(GENERAL HUNT ONLY)]	[SEPT. 1 - OCT. 15]
RESIDENTS HUNTERS: 1 goat by registration permit only; however, goats may be taken from Aug. 16 through Aug. 31 by bow and arrow only; the taking of nannies with kids is prohibited	Aug. 16 – Nov. 30 (General hunt only)	
NONRESIDENT HUNTERS:		
1 goat by registration permit only; by bow and arrow only; the taking of nannies with kids is prohibited, or		**Aug. 16 – Aug. 31**
1 goat by drawing permit only; up to 150 permits may be issued; the taking of nannies with kids is prohibited		**Sept. 1 – Oct. 15**

PROPOSAL 243A **RC**

5 AAC 92.530. Management areas. The following management areas are subject to special restrictions:

- Unit 14C Fort Richardson (DM422/423/424/425/427; currently muzzleloader or archery hunts with a total of 125 permits available)

(1) the Fort Richardson Management Area:

(A) the area consists of the Fort Richardson Military Reservation;

(B) the area is open to the taking of big game by permit only, and small game, and fur animals; the department will set conditions under 5 AAC 92.050 ;

(C) XX permits will be issued to applicants that qualify as disabled veterans.

- Unit 20B Fairbanks Management Area (DM788; currently an archery hunt with 75 permits available)

(10) the Fairbanks Management Area:

(A) this area consists of that portion of Unit 20(B) bounded by a line from the confluence of Rosie Creek and the Tanana River, northerly along Rosie Creek to the middle fork of Rosie Creek through Section 26 to the Parks Highway, then east along the Parks Highway to Alder Creek, then upstream along Alder Creek to its confluence with Emma Creek, then upstream along Emma Creek to its headwaters, then northerly along the hydrographic divide between Goldstream Creek drainages and Cripple Creek drainages to the summit of Ester Dome, then down Sheep Creek to its confluence with Goldstream Creek, then easterly along Goldstream Creek to Sheep Creek Road, then north on Sheep Creek Road to Murphy Dome Road, then west on Murphy Dome Road to Old Murphy Dome Road, then east on Old Murphy Dome Road to the Elliot Highway, then south on the Elliot Highway to Davidson Ditch, then southeasterly along the Davidson Ditch to its confluence with the tributary to Goldstream Creek in Section 29, then downstream along the tributary to its confluence with Goldstream Creek, then in a straight line to First Chance Creek, then up First Chance Creek to the summit of Tungsten Hill, then southerly along Steele Creek to its intersection with the Trans - Alaska Pipeline right - of - way, then southeasterly along the easterly edge of the Trans - Alaska Pipeline right - of - way to the Chena River, then along the north bank of the Chena River to the Moose Creek dike, then southerly along the Moose Creek dike to its intersection with the Tanana River, and then westerly along the north bank of the Tanana River to the point of beginning;

(B) the area is open to moose hunting by bow and arrow only;

(C) XX permits will be issued to applicants that qualify as disabled veterans.

- Unit 20D, Delta Junction Management Area (DM790, bull with spike-fork or 50-inch with 4 or more brow tines on at least one side; currently 10 permits available)

(19) the Delta Junction Management Area:

(A) the area consists of that portion of Unit 20(D) bounded by a line beginning at the confluence of Donnelly Creek and the Delta River, then up Donnelly Creek to the Richardson Highway (Mile 238), then north along the east side of the highway to the "12 Mile Crossing Trail" (Mile 252.4), then east along the south side of the "12 Mile Crossing Trail" and across Jarvis Creek to the 33 - Mile Loop Road, then northeast along the 33 - Mile Loop Road to the intersection with the Alaska Highway (Mile 1414), then southeast along the north side of the Alaska Highway to the bridge at Sawmill Creek (Mile 1403.9), then down the west bank of Sawmill Creek to its confluence with Clearwater Creek and down the south bank of Clearwater Creek to its confluence with the Tanana River, then down the Tanana River to its confluence with the Delta River, and upstream along the east bank of the Delta River to the point of beginning at Donnelly Creek;

(B) the area is open to moose hunting by permit only;

(C) XX permits will be issued to applicants that qualify as disabled veterans.

"Disabled veteran" means a person who is certified by the United States Department of Veterans Affairs as having incurred a 50 percent or greater disability during military service or who incurred a 50 percent or greater disability while serving in the Alaska Territorial Guard.

Rc 101

Euthanasia and Humane Killing of Free-Ranging Wolves

Kimberlee Beckmen, M.S., D.V.M., Ph.D.

Wildlife Veterinarian
Division of Wildlife Conservation

Euthanasia

- Definition: The act of inducting humane death in an animal
- Criteria: "Rapid loss of consciousness followed by cardiac or respiratory arrest and the ultimate loss of brain function."
- "The technique should minimize distress and anxiety experience by the animal prior to loss of consciousness."

American Veterinary Medical Association Guidelines

DWC Animal Welfare Policy:

- Research utilizes humane care and treatment, in ways which minimize pain and distress;
- Follow published guidelines on approved methods of capture, care, treatment, and euthanasia of wildlife;
- Requires review by the Division's Animal Care and Use Committee in accordance with the Animal Welfare Act for invasive procedures or high probability of causing harm

Euthanasia

- "..recognized that the absence of pain and distress cannot always be achieved."
- "The guidelines attempt to balance the ideal of minimal pain and distress with the reality of the many environments in which euthanasia is performed."

American Veterinary Medical Association Guidelines

Euthanasia Guidelines

- AVMA Guidelines on Euthanasia 2007
  - American Veterinary Medical Association
- Guidelines for Euthanasia of Nondomestic Animals 2006
  - American Association of Zoo Veterinarians
- Guidelines for the Capture Handling, and Care of Mammals
  - American Society of Mammalogists IACUC

Free-Ranging Wildlife Issues

- "...lack of control or confinement over free-ranging wildlife under field conditions"
- "Under such conditions, firearms may be the most appropriate means of quickly and efficiently killing large free-ranging mammals..."

AAZV Guidelines for Nondomestic Animals

Free-Ranging Wildlife Issues

"Although the appropriate use of firearms and other methods may be the most humane method of terminating life, such methods may not always meet the definition of euthanasia. Therefore, ***humane killing of wildlife species*** may be a more accurate term than euthanasia under some circumstances."

AAZV Guidelines for Nondomestic Animals

Evaluation Criteria

10. Compatibility with species, age, and health status
11. Ability to maintain equipment in proper working order
12. Safety for predators/scavengers should the carcass be consumed

American Veterinary Medical Association Guidelines

Evaluation Criteria

1. Ability to induce loss of consciousness and death without causing pain, distress, anxiety, or apprehension
2. Time required to induce loss of consciousness
3. Reliability
4. Safety of personnel
5. Irreversibility
6. Compatibility with requirement and purpose

American Veterinary Medical Association Guidelines

Modes of Action

1. Hypoxia
2. Direct depression of neurons necessary for life function
3. Physical disruption of brain activity

American Veterinary Medical Association Guidelines

Evaluation Criteria

7. Emotional effect on observers or operators
8. Compatibility with subsequent evaluation, examination, or use of tissue
9. Drug availability and human abuse potential

American Veterinary Medical Association Guidelines

Responsibility for Dependent Offspring

- ASM IACUC Guidelines state: "When orphaned young are found, the researcher should assume responsibility for such young, most commonly killing them quickly and humanely."
- Thus, leaving orphaned pups in the den to die of starvation is not acting responsibly.

Carbon Monoxide (CO)

- Colorless, odorless gas, non-flammable/non-explosive @<10%
- Combines with hemoglobin, blocks uptake of O2 by red blood cells leading to fatal hypoxemia
- Dogs exposed to 6% CO in air lost consciousness in 20 to 25 seconds

American Veterinary Medical Association Guidelines

Carbon Monoxide (CO)

- Recommendations by the AVMA Panel
  - CO used for individual animal or mass euthanasia is acceptable for dogs, cats, and other small mammals.

American Veterinary Medical Association Guidelines

Carbon Monoxide (CO)

- Advantages
  - Induces loss of consciousness without pain and with minimal discernible discomfort
  - Hypoxemia induced by CO is insidious so the animal appears unaware
  - Death occurs rapidly if concentrations of 4-6% are used.

American Veterinary Medical Association Guidelines

Carbon Monoxide (CO)

- Approved and used in dens by the USDA APHIS primarily for rabies control
- "For control of coyotes, red foxes, and striped skunks in dens only"
- Large Gas Cartridge contains 53% Sodium nitrate, 28% charcoal, 19% inert ingredients
- Canister is punctured, fuse lit, placed in den entrance, plugged off.

Carbon Monoxide (CO)

- Disadvantages
  - Safeguards must be taken to prevent exposure of personnel
  - Any electrical equipment exposed to CO must be explosion proof

American Veterinary Medical Association Guidelines

Methods for pups inside of dens

- CO is the preferred method, widely acceptable as humane euthanasia, and least distressful method to quickly killed pups in dens
- No alternatives for acceptable euthanasia methods exist when pups are unreachable within the confines of the den

Methods for pups inside of dens

- Gunshot to the head is an acceptable means of euthanasia, gunshot to the thorax is a conditionally acceptable means of humane kill, within the den if pups can be individually targeted
- High risk of injury to personnel and only employed when no safer alternative exists

AVMA and AAZV Guidelines

Conclusion

- CO administration into dens is the best method, logistically and for humane *euthanasia of wolf pups*
- Other acceptable methods were listed but safety and logistic constraints will limit the circumstances when they can be utilized.

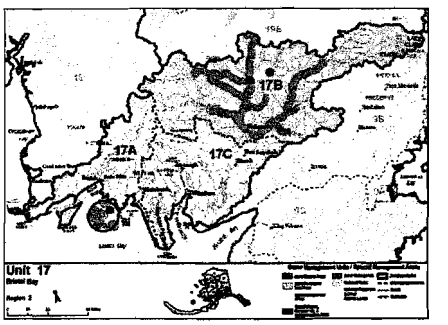
Recommendation DWC
Veterinarian and approved DWC
IACUC

RC.....102.....

James D. Woolington ADF&G/DWC, Dillingham Area Office Feb. 28 – Mar. 9, 2009

Game Management Unit 17

- Location: northern Bristol Bay
- Size: 18,800 sq. mi.
- Office: Dillingham
- Staff: Area Biologist - Jim Woolington
  Program Technician - Eunice Dyasuk



GMU 17: MOOSE

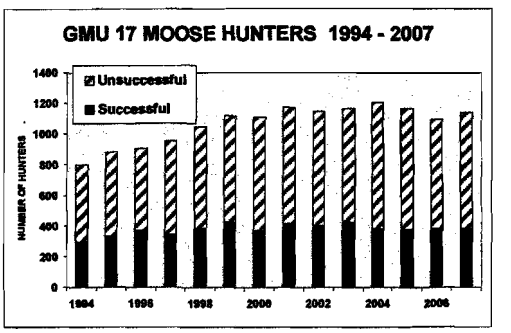
STATUS:
17A – Increasing (~1,100 Mar. 2008)
17B - Stable to decreasing (2,800-3,500 Mar. 2006)
17C - Stable to increasing (2,900-3,600 Mar. 2008)

INTENSIVE MANAGEMENT OBJECTIVES:
17A – Not applicable
17B – Popl. 4,900 - 6,000 Harvest: 200-400
17C – Popl. 2,800 - 3,500 Harvest: 165 – 350

HARVEST: ~1,200 hunters take ~400 moose

ISSUES: Perceived conflicts between local and nonlocal hunters
Predation and low calf numbers in 17B
Poor weather for surveys

PROPOSALS: 60, 61, 62, 63



GMU 17: CARIBOU

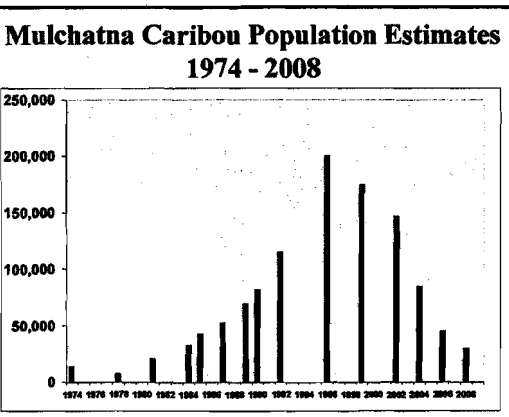
STATUS:
Mulchatna – herd size stabilizing ?? (30,000-40,000)
Nushagak Peninsula – herd size stable (500-600)

INTENSIVE MANAGEMENT OBJECTIVES:
MCH- Popl. 100,000-150,000 Harvest: 6,000-15,000
Nushagak Peninsula- Not applicable

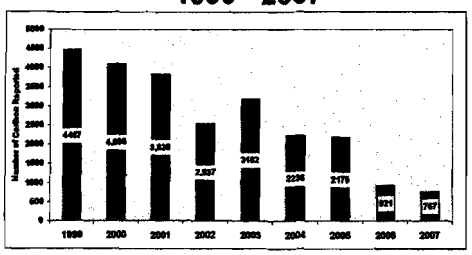
HARVEST:
MCH – 1,000-1,300 hunters report 700-900 caribou/year
Nushagak Peninsula – no reported legal harvest past 2 yrs

ISSUES: Bull:cow ratio below objective
Reduced herd size
Unreported harvests
Low productivity from young age classes

Proposals: 55, 56, 57



Mulchatna Caribou Reported Harvest 1999 - 2007



Harvest for entire herd, not just GMU 17. Hunter numbers have also declined.

GMU 17: Bears

STATUS: - Brown Bears – probably stable to increasing
- Black Bears – probably stable

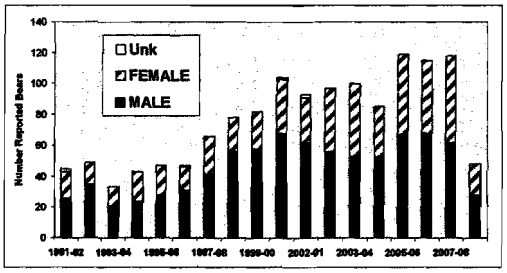
POPULATION OBJECTIVE:
-Brown Bears – sustain harvest of 50, w/ at least 50% males
-Black Bears – sustain harvest w/ at least 60% males

HARVEST: - Brown Bears – 80 – 120/yr. since 2000
- Black Bears – ave. 12/yr since 2000

ISSUES: Predation on moose and caribou
Conflicts between bears and people in camps and communities

PROPOSALS: 49, 50, 51, 52

GMU 17 Brown Bear Harvest 1991 – 2008



GMU 17: Wolves

STATUS: Probably increasing

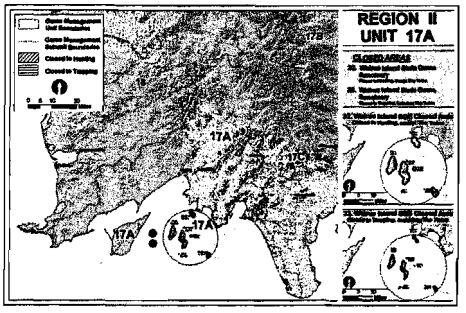
MANAGEMENT OBJECTIVE:
Maintain population that will sustain harvest of at least 25/yr

HARVEST: Variable, 30 – 140/yr since 1993

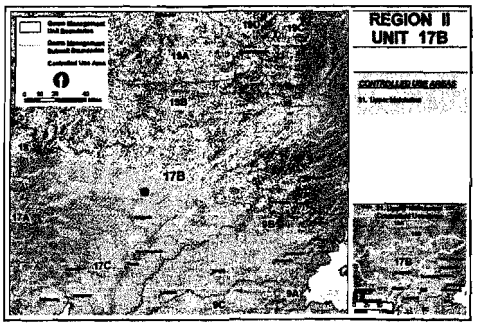
ISSUES: - Predation on moose and caribou
- No population estimation surveys

PROPOSALS: 67, 68, 69

Walrus Islands State Game Sanctuary



Upper Mulchatna Controlled Use Area

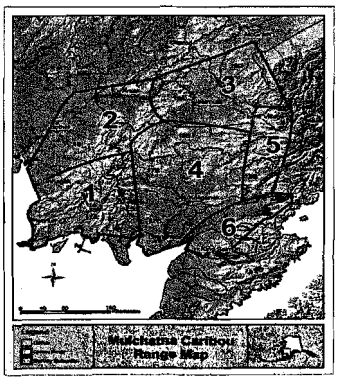


RC...103.....

James D. Woolington ADF&G/DWC, Dillingham Area Office Feb. 28 – Mar. 9, 2009

Mulchatna Caribou Herd

in southwestern Alaska

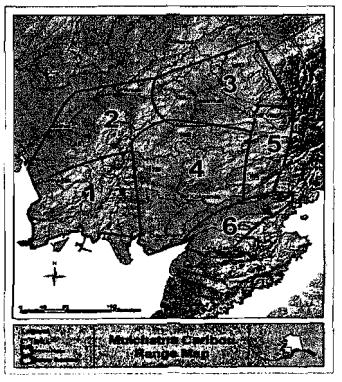


Management and Research

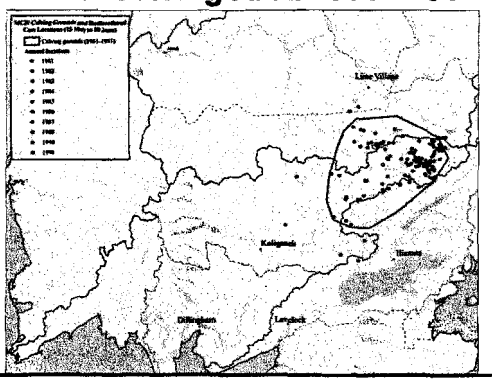
- Radio collaring
- Calving survey
- Photo census
- Fall Composition survey
- Harvest Reporting
- Health Assessment
- Bull Distribution & Mortality

Cooperating Agencies

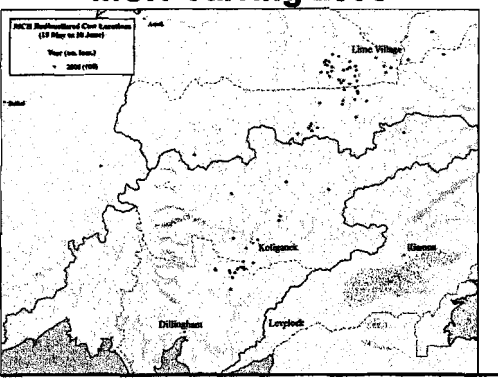
- Alaska Dept Fish & Game
- US Fish & Wildlife Service
- National Park Service
- Bureau of Land Management



MCH Calving Area 1981-1991

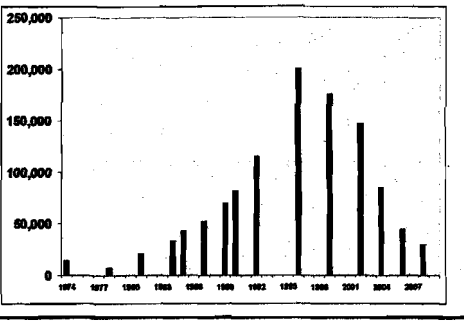


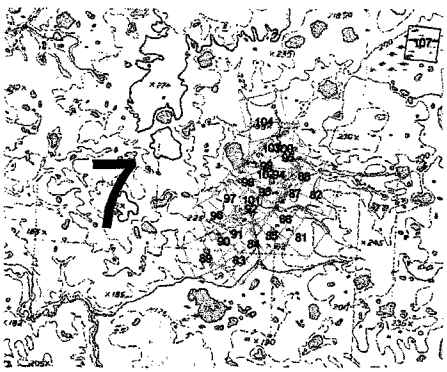
MCH Calving 2008

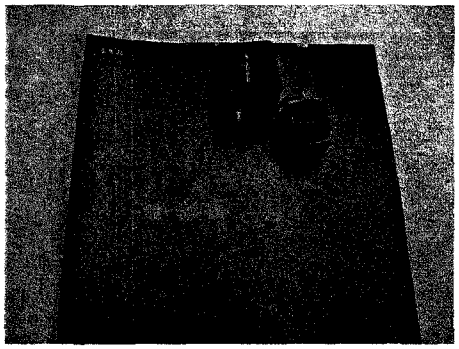


- In the Mulchatna herd, few cows producing calves until 4 years old
- In the nearby Nushagak Peninsula herd, some 2-year old, and most 3-year old cows have calves

Mulchatna Caribou Population Estimates 1974 - 2008



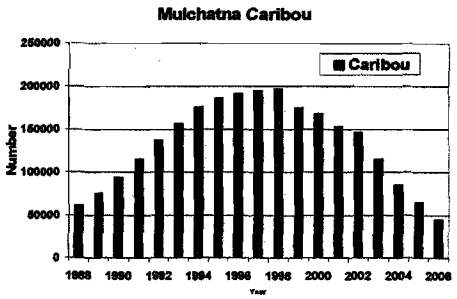


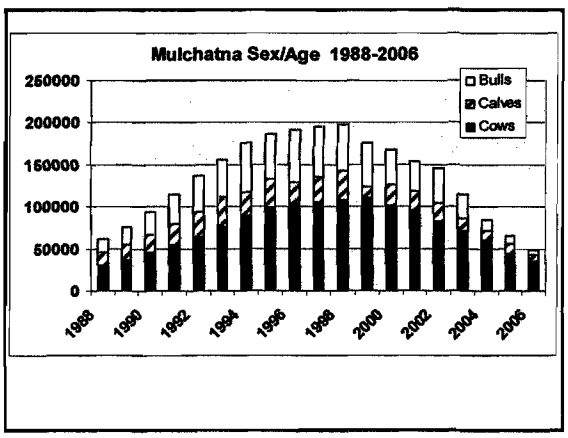


- 1970s < 25,000
- 1980s 25,000 ➡ 90,000
- 1990s ~ 90,000
- ⬇
- 1996 200,000
- ⬇
- 2006 45,000
- 2008 est. 30,000-40,000

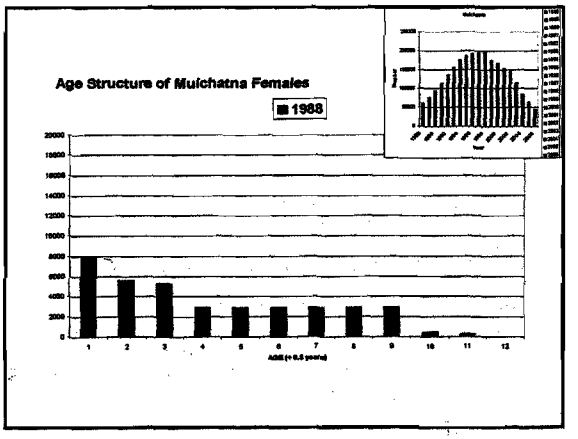
Changes in Population ??

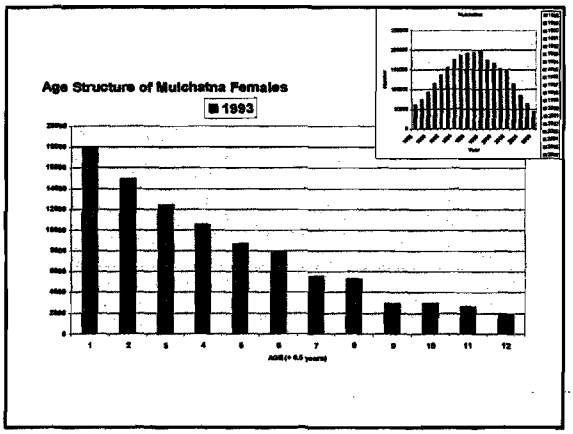
- Disease (foot rot, pneumonia, parasites)
- Predation
- Density dependent food limitation
- Age structure effects
- Harvest
- Climate
- All of the above,...plus ??

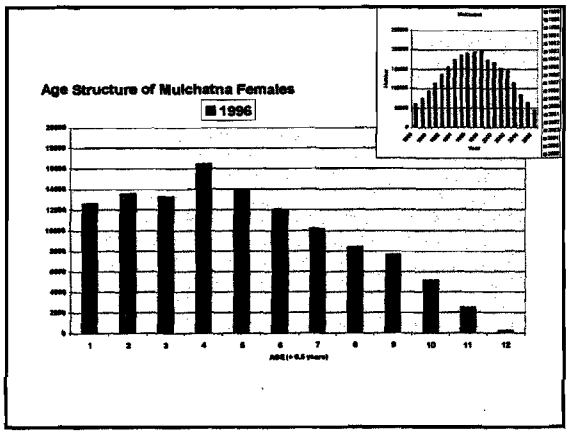


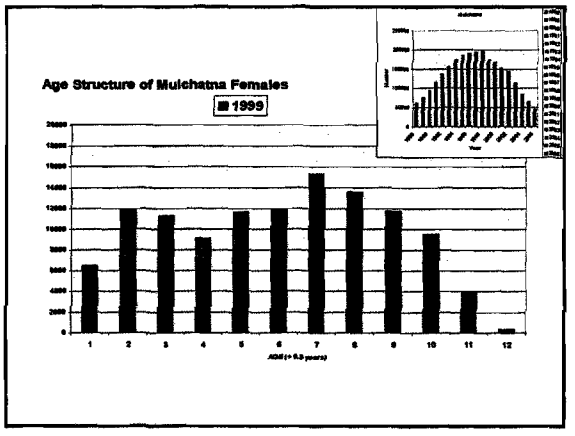


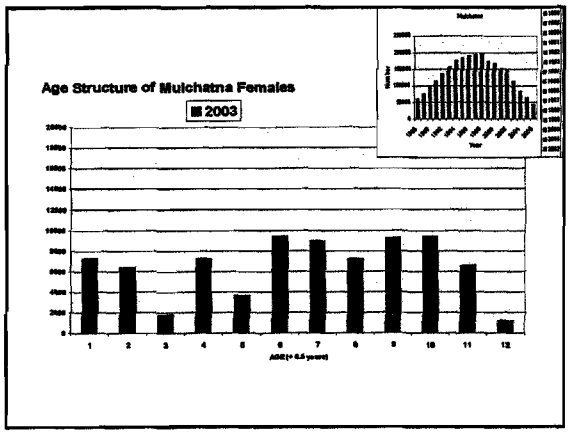
Year	cows	calves	bulls
1986	20772	7686	10353
1987	23500	14100	10931
1988	29504	15932	14048
1989	35986	19793	17770
1990	44247	24336	22793
1991	53159	29237	28465
1992	64066	35237	32621
1993	78234	34423	38703
1994	89582	35833	39528
1995	98479	34468	42350
1996	103010	35023	42885
1997	105081	35728	43583
1998	107860	34522	43001
1999	109878	33185	40209
2000	100988	22217	31782
2001	94767	17058	28457

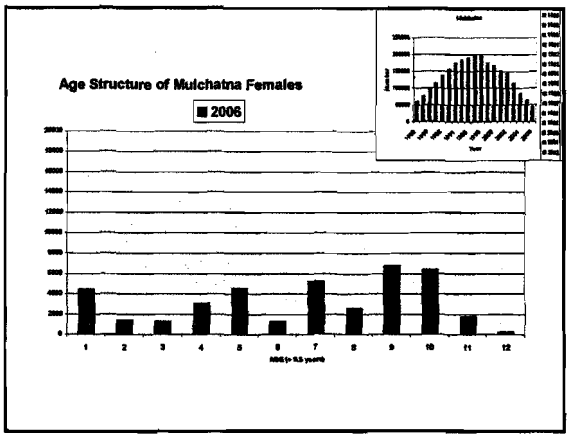


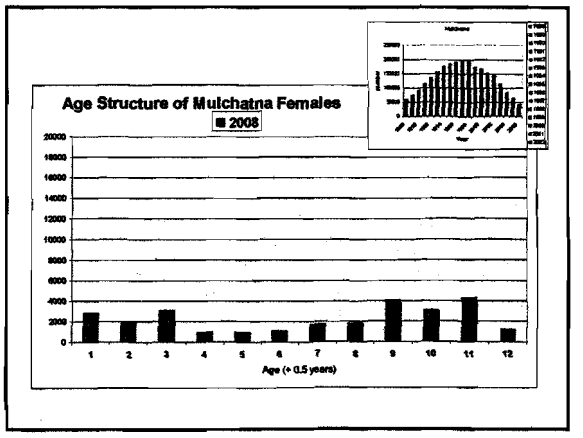






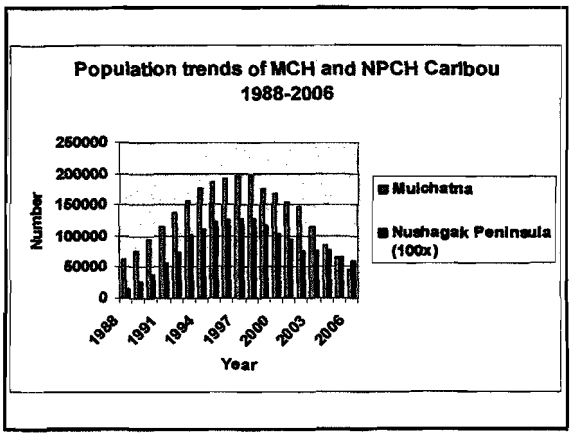






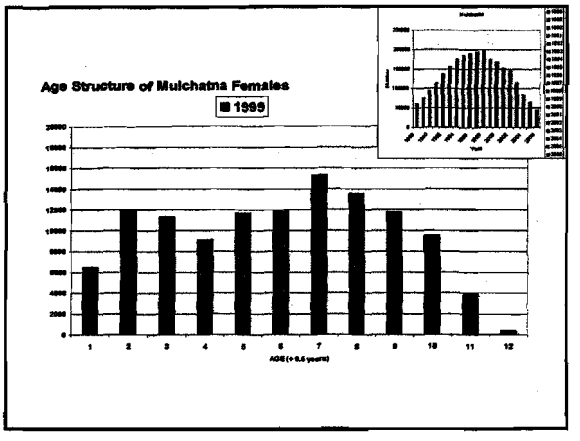
Summary

- **Complex regional cause of decline**
- Age structure exacerbates decline
- Bull cow ratio low but may quickly improve



Summary

- Complex regional cause of decline
- **Age structure exacerbates decline**
- Bull cow ratio low but may quickly improve

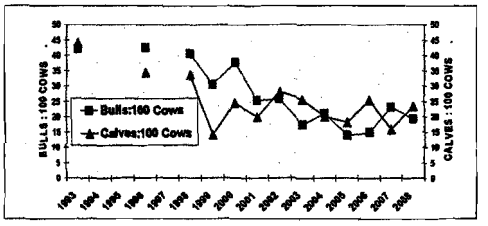


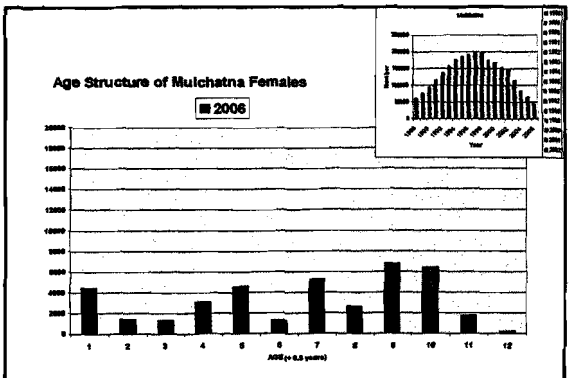
Summary

- Complex regional cause of decline
- Age structure exacerbates decline
- **Bull cow ratio low but may quickly improve**

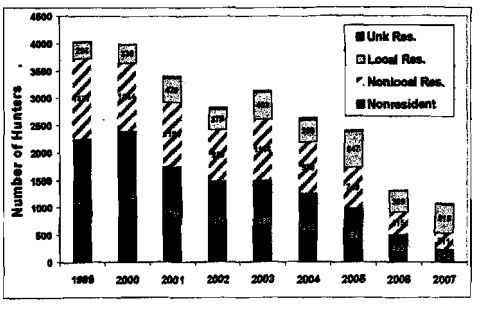
Mulchatna Caribou Fall Composition Surveys

Mulchatna Caribou Fall Composition Surveys

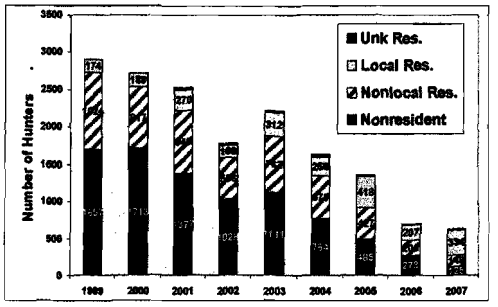




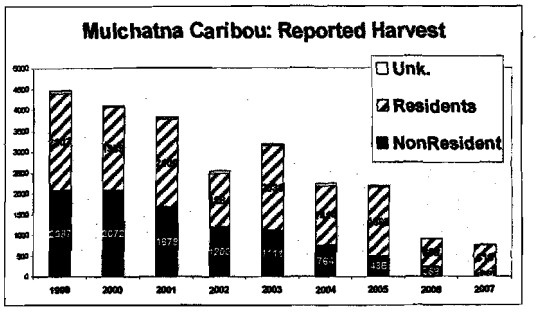
Mulchatna Caribou Hunters: 1999 - 2007



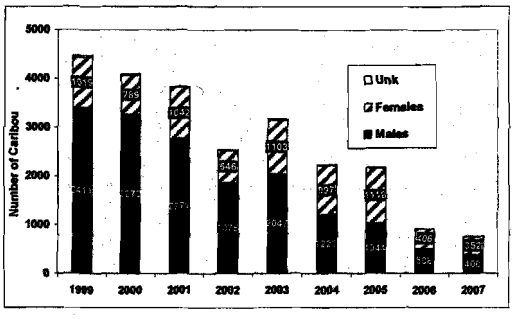
Successful Caribou Hunters 1999-2007



Reported Harvest 1999-2007



Reported Harvest 1999-2007



State Board of Game March, 2007

- Changed resident bag limit from 3 to 2 (of which only 1 bull) for Mulchatna Caribou Herd, and only one caribou prior to Jan 31
- Changed hunting season dates for nonresidents: September 1 – 15
- Closed Same-Day-Airborne hunting in GMUs 9-B and 17-B&C

Closing:

- MCH- initially a very small herd, with limited distribution and utilization
- Rapidly grew to large herd, with great increase in distribution and use
- Large herd for relatively short time
- Rapid decrease in herd size,...but still widespread distribution and use

RC 104

James D. Woolington ADF&G/DWC, Dillingham Area Office Feb. 27 – Mar. 9, 2009

Proposal 49

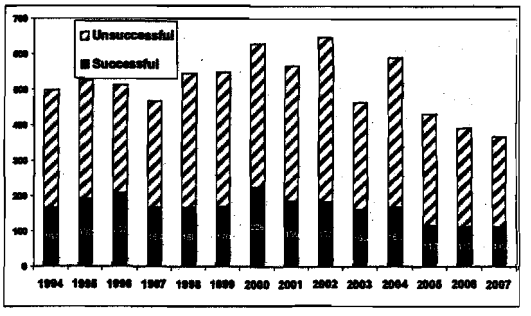
- Effect: Implement brown bear control permit program in GMU 17B
- Issue: Growing bear population and predation on moose
- Department position: Do Not Adopt

GMU 17B Moose Population

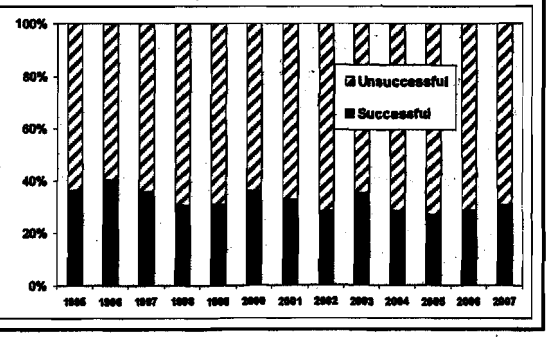
	Yr.	Est.	Min % Calves
17B (w)	2001	1,060-1,340	5%
	2006	1,090-1,330	12.5%
17B (e)	2002	1,700-2,200	4%

late winter (March) surveys

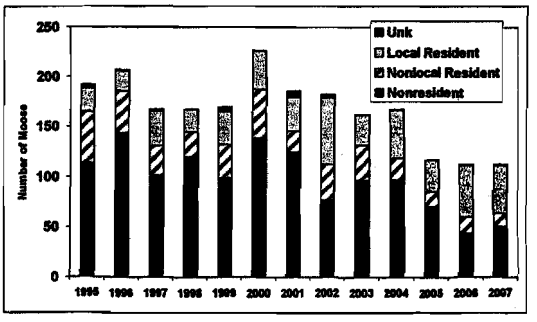
GMU 17B Moose Hunters 1994-2007



GMU 17B Moose Hunters 1995-2007



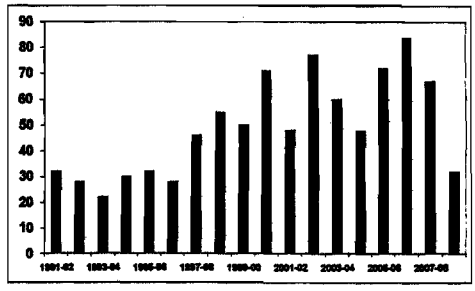
GMU 17B Successful Moose Hunters



GMU 17B Brown Bear

- No survey or population estimates
- Local residents report increasing numbers
- Harvest statistics from sport harvest

GMU 17B Reported Brown Bear Kill



Intensive Management Steps

- ***Statutory Considerations***
- **Has the big game populations been identified as important for high levels of human consumptive use (i.e. intensive management)?**
- **Has the board established population and harvest objectives?**
- **Have the population and harvest objectives been achieved?**
- **Has there been a significant reduction in take?**
- **Is predation an important cause of the failure to achieve population or harvest objectives?**
- **Can a reduction in predation reasonably be expected to aid the reaching of the objectives?**
- ***Other Considerations***
- **Reduced seasons, reduced bag limits, elimination of non-resident hunting, etc.**
- **Feasibility and cost effectiveness (i.e., what are the effects of weather, terrain, land ownership).**

Intensive Management Steps

Statutory Considerations: Has the big game population been identified as important for high levels of human consumptive use (i.e. intensive management)?

Moose: GMU 17B – Yes

Intensive Management Steps

Statutory Considerations: Has the Board established population and harvest objectives?

Moose:	Population	Harvest
GMU 17B	4,900 – 6,000	200 – 600

Intensive Management Steps

Statutory Considerations: Have the population objectives been met? No

Moose:	Popl. Obj.	Status
GMU 17B	4,900-6000	~ 2,800 - 3,500 (2006)

Intensive Management Steps

Statutory Considerations: Have the harvest objectives been met? No

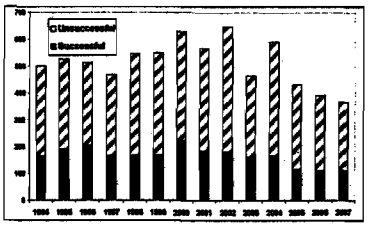
Moose:	Harvest Obj	2003–2007 ave*
GMU 17B	200 – 400	135

***Note: Reported Harvests. GMU 17B hunter numbers ranged from 367 to 591during this period. Ave success rate = 30%**

Intensive Management Steps

Statutory Considerations: Has there been a significant reduction in take ?

GMU 17B Moose Hunters 1994 – 2007



No recent regulatory changes to reduce take

Intensive Management Steps

Statutory Considerations: Is predation an important cause of the failure to achieve population or harvest objectives ?

GMU 17B Moose:

Popl. Obj. ? - Unknown, however surveys indicate low calf numbers in late winter. Local village reports increase in bears in area. Wolves and bears abundant throughout GMU 17B

Harvest Obj. ? – Probably not. Hunter success rate still 25% - 35%.

Intensive Management Steps

Statutory Considerations: Can a reduction in predation reasonably be expected to aid in reaching the objectives?

GMU 17B Moose:

Popl. Obj. ? - Reduced bear predation would likely increase survival of calves.

Harvest Obj. ? – Eventually, however present hunter success rate of 25% - 35% is likely about as high as can expect for remote area such as GMU 17B.

Proposal 49

- Effect: Implement brown bear control permit program in GMU 17B
- Issue: Growing bear population and predation on moose
- Department position: Do Not Adopt

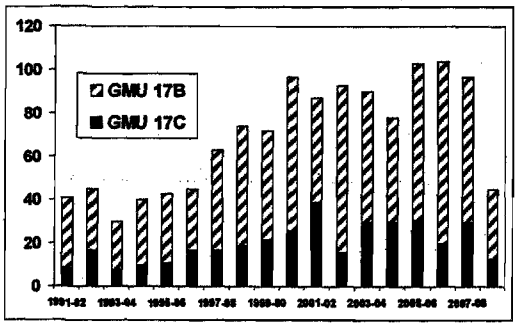
Proposal 50

- Effect: Implement predator management in GMUs 17B & C to reduce brown bear population
- Issue: Growing bear population and predation on moose
- Department position: Do Not Adopt

GMUs 17B & C Brown Bear

- No survey or population estimates
- Local residents report increasing numbers
- Harvest statistics from sport harvest

GMUs 17B&C Brown Bear Kill

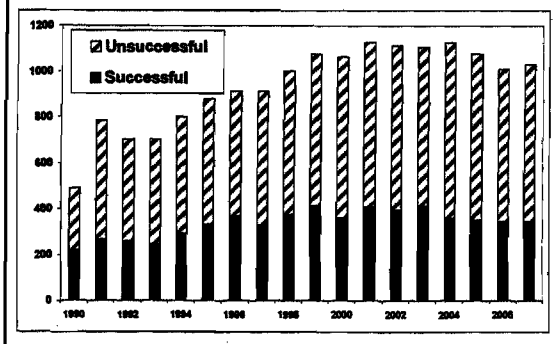


GMU 17B&C Moose Population

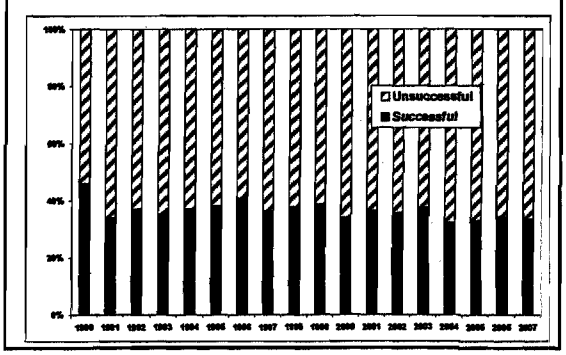
	Yr.	Est.	Min % Calves
17B (w)	2001	1,060-1,340	5%
	2006	1,090-1,330	12.5%
17B (e)	2002	1,700-2,200	4%
17C	1999	2,470-3,440	15%
	2004	3,130-4,200	11%
	2008	2,880-3,600	12%

late winter (March) surveys

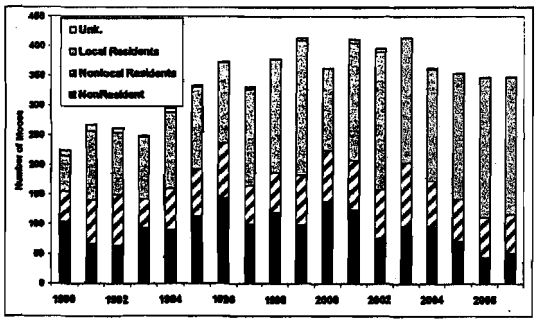
GMU 17B&C Moose Hunters1990-2007



GMU 17B&C Moose Hunters 1990-2007



GMU 17B&C Successful Moose Hunters



Intensive Management Steps

- ***Statutory Considerations***
- **Has the big game populations been identified as important for high levels of human consumptive use (i.e. intensive management)?**
- **Has the board established population and harvest objectives?**
- **Have the population and harvest objectives been achieved?**
- **Has there been a significant reduction in take?**
- **Is predation an important cause of the failure to achieve population or harvest objectives?**
- **Can a reduction in predation reasonably be expected to aid the reaching of the objectives?**
- ***Other Considerations***
- **Reduced seasons, reduced bag limits, elimination of non-resident hunting, etc.**
- **Feasibility and cost effectiveness (i.e., what are the effects of weather, terrain, land ownership).**

Intensive Management Steps

Statutory Considerations: Has the big game population been identified as important for high levels of human consumptive use (i.e. intensive management)?

Moose:

GMU 17B – Yes

GMU 17C – Yes

Intensive Management Steps

Statutory Considerations: Has the Board established population and harvest objectives?

Moose:	Population	Harvest
GMU 17B	4,900 – 6,000	200 – 400
GMU 17C	2,800 – 3,500	165 – 350

Intensive Management Steps

Statutory Considerations: Have the population objectives been met?

Moose:	Popl Obj	Status	
GMU 17B	4,900-6000	~2,800 – 3,500 (2006)	
			No
GMU 17C	2,800-3,500	~ 2,900 – 3,600 (2008)	
			Yes

Intensive Management Steps

Statutory Considerations: Have the harvest objectives been met?

Moose:	Harvest Obj	2003–2007 ave*	
GMU 17B	200 - 400	135	No
GMU 17C	165 – 350	224	Yes

*Note: Reported Harvests.

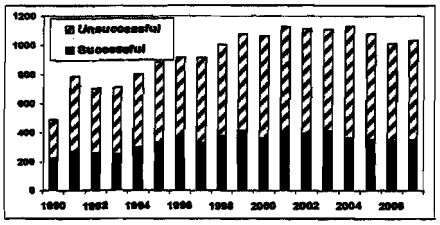
GMU 17B hunter numbers ranged from 367 to 591 during this period. Ave. success rate = 30%

GMU 17C hunter numbers ranged from 526 to 641 during this period. Ave. success rate = 38%

Intensive Management Steps

Statutory Considerations: Has there been a significant reduction in take ?

GMU 17B&C Moose Hunters 1990 – 2007



No recent regulatory changes to reduce take

Intensive Management Steps

Statutory Considerations: Is predation an important cause of the failure to achieve population or harvest objectives ?

GMU 17B Moose:

Popl. Obj. ? - Unknown, however surveys indicate low calf numbers in late winter. Local villages report increase in predation by wolves this winter. Wolves and bears abundant throughout GMU 17B

Harvest Obj. ? – Probably not. Hunter success rate still 25% - 35%.

Intensive Management Steps

Statutory Considerations: Is predation an important cause of the failure to achieve population or harvest objectives ?

GMU 17C Moose:

Population and Harvest Objective Achieved

Intensive Management Steps

Statutory Considerations: Can a reduction in predation reasonably be expected to aid in reaching the objectives?

GMU 17B Moose:

Popl. Obj. ? - Reduced bear predation would likely increase survival of calves.

Harvest Obj. ? – Eventually, however present hunter success rate of 25% - 35% is likely about as high as can expect for remote area such as GMU 17B.

Intensive Management Steps

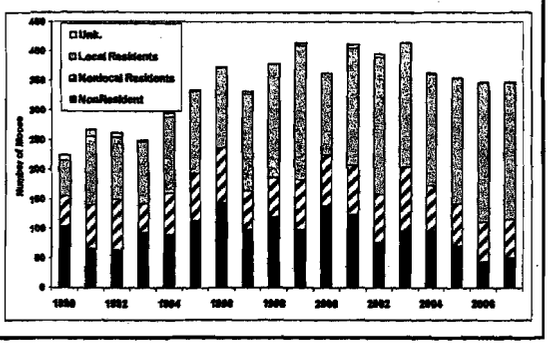
Other considerations:

- Reduced resident and nonresident hunting seasons, reduced bag limits, .
- Feasibility and cost effectiveness (ie., what are the effects of weather, terrain, land ownership ?)
- Recent liberalization of bear hunting season and bag limit

Proposal 50

- Effect: Implement predator management in GMUs 17B & C to reduce brown bear population
- Issue: Growing bear population and predation on moose
- Department position: Do Not Adopt

GMU 17B&C Successful Moose Hunters



Intensive Management Steps

- ***Statutory Considerations***
- Has the big game populations been identified as important for high levels of human consumptive use (i.e. intensive management)?
- Has the board established population and harvest objectives?
- Have the population and harvest objectives been achieved?
- Has there been a significant reduction in take?
- Is predation an important cause of the failure to achieve population or harvest objectives?
- Can a reduction in predation reasonably be expected to aid the reaching of the objectives?
- ***Other Considerations***
- Reduced seasons, reduced bag limits, elimination of non-resident hunting, etc.
- Feasibility and cost effectiveness (i.e., what are the effects of weather, terrain, land ownership).

Intensive Management Steps

Statutory Considerations: Has the big game population been identified as important for high levels of human consumptive use (i.e. intensive management)?

Moose:

GMU 17B – Yes

GMU 17C – Yes

Intensive Management Steps

Statutory Considerations: Has the Board established population and harvest objectives?

Moose:	Population	Harvest
GMU 17B	4,900 – 6,000	200 – 400
GMU 17C	2,800 – 3,500	165 – 350

Intensive Management Steps

Statutory Considerations: Have the population objectives been met?

Moose:	Popl Obj	Status
GMU 17B	4,900-6000	~2,800 – 3,500 (2006)
No		
GMU 17C	2,800-3,500	~ 2,900 – 3,600 (2008)
Yes		

Intensive Management Steps

Statutory Considerations: Have the harvest objectives been met?

Moose:	Harvest Obj	2003–2007 ave*	
GMU 17B	200 - 400	135	No
GMU 17C	165 – 350	224	Yes

*Note: Reported Harvests.

GMU 17B hunter numbers ranged from 367 to 591 during this period. Ave. success rate = 30%

GMU 17C hunter numbers ranged from 526 to 641 during this period. Ave. success rate = 38%

Proposal 68

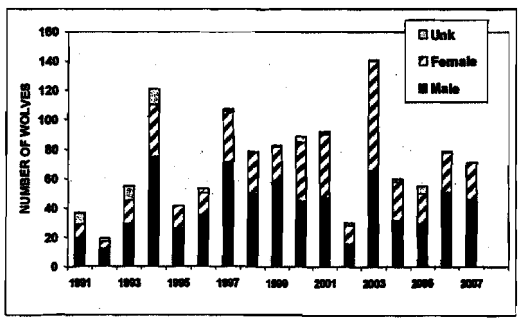
- **Effect: Create a predator management plan in GMUs 17B&C to reduce the wolf population**
- **Issue: Excessive numbers of wolves in GMUs 17B&C and predation on moose**

Department position: Do Not Adopt

GMU 17 Wolf

- **No survey or population estimates**
- **Local residents report increasing numbers**
- **Harvest statistics from sealing records**

GMU 17 Wolf Kill

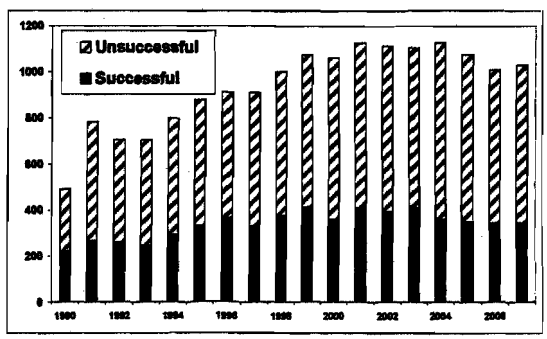


GMU 17B&C Moose Population

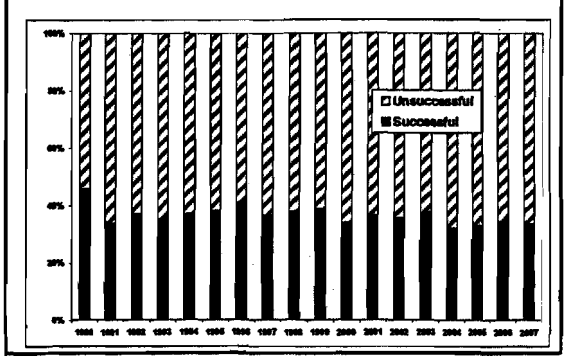
	Yr.	Est.	Min % Calves
17B (w)	2001	1,060-1,340	5%
	2006	1,090-1,330	12.5%
17B (e)	2002	1,700-2,200	4%
17C	1999	2,470-3,440	15%
	2004	3,130-4,200	11%
	2008	2,880-3,600	12%

late winter (March) surveys

GMU 17B&C Moose Hunters1990-2007

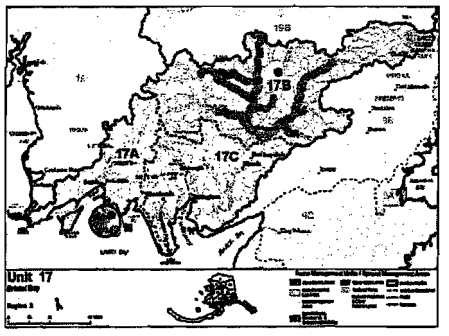


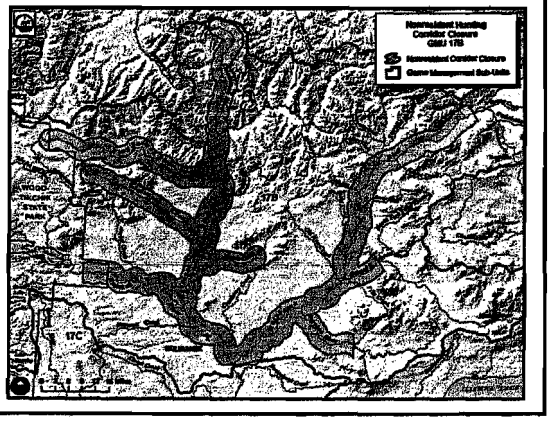
GMU 17B&C Moose Hunters 1990-2007



Proposal 61

- **Effect: Change RM587, the nonresident registration moose hunt in GMU 17B**
- **Issue: Nonresident moose hunters required to obtain registration permit to hunt moose in GMU 17B Nonresident Corridor**
- **Department position: No Recommendation**





RM 587 Moose Hunt

Permit Hunt Requirements:

- Pick up permit in person, in Dillingham

- Stop issuing permits 5 days before hunt

- Maximum of 75 permits

RM 587 Moose Hunt

Year	Permits	Hunted	Moose Killed
2005	21	20	10
2006	48	42	6
2007	30	26	11
2008	24	15	7

Proposal 61

- **Effect: Change RM587, the nonresident registration moose hunt in GMU 17B**
- **Issue: Nonresident moose hunters required to obtain registration permit to hunt moose in GMU 17B Nonresident Corridor**
- **Department position: No Recommendation**

Proposal 60

- Effect: Expand area open for moose hunting during December registration hunt in GMU 17C.
- Issue: Moose numbers in western GMU 17C sufficient to be included in 17B&C winter hunt
- Department position: Take No Action

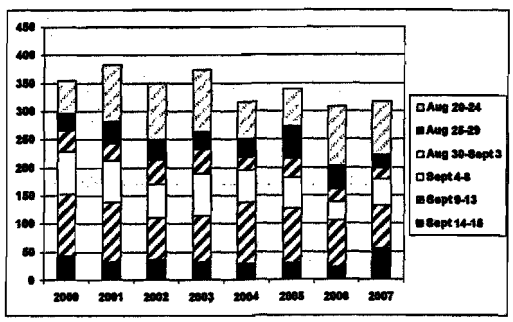
Proposal 63

- Effect: Extend fall moose hunt in GMU 17B&C by 2 days
- Issue: Perception that moose are rutting later because of global warming
- Department position: Do Not Adopt

GMU 17B&C Fall Moose Hunt

- RM 583 – Resident, Aug 20-Sept 15: Any bull
- General – Resident, Sept. 1-15: Sp/Fk/50"/3BT
  - Nonresident, Sept 5-15, 50"/4BT

17B&C-Reported Kill Dates for Moose



- Previous reports to BOG indicate no change in breeding due to warmer falls
- RM587 – Nonresident, Sept 5-15, 50"/4BT

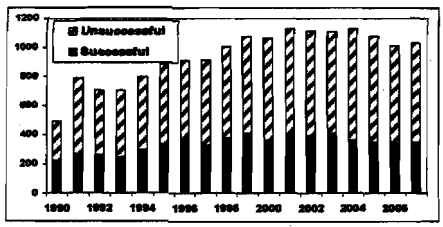
Proposal 63

- Effect: Extend fall moose hunt in GMU 17B&C by 2 days
- Issue: Perception that moose are rutting later because of global warming
- Department position: Do Not Adopt

Intensive Management Steps

Statutory Considerations: Has there been a significant reduction in take ?

GMU 17B&C Moose Hunters 1990 – 2007



No recent regulatory changes to reduce take

Intensive Management Steps

Statutory Considerations: Is predation an important cause of the failure to achieve population or harvest objectives ?

GMU 17B Moose:

Popl. Obj. ? - Unknown, however surveys indicate low calf numbers in late winter. Local villages report increase in predation by wolves this winter. Wolves and bears abundant throughout GMU 17B

Harvest Obj. ? – Probably not. Hunter success rate still 25% - 35%.

Intensive Management Steps

Statutory Considerations: Is predation an important cause of the failure to achieve *population or harvest objectives* ?

GMU 17C Moose:

Population and Harvest Objective Achieved

Intensive Management Steps

Statutory Considerations: Can a reduction in predation reasonably be expected to aid in reaching the objectives?

GMU 17B Moose:

Popl. Obj. ? - Reduced wolf predation would likely increase survival of calves.

Harvest Obj. ? – Eventually, however present hunter success rate of 25% - 35% is likely about as high as can expect for remote area such as GMU 17B.

Intensive Management Steps

Other considerations:

- Reduced resident and nonresident hunting seasons, reduced bag limits, .
- Feasibility and cost effectiveness (ie., what are the effects of weather, terrain, land ownership ?)
- Recent liberalization of wolf bag limit

Proposal 68

- Effect: Create a predator management plan in GMUs 17B&C to reduce the wolf population
- Issue: Excessive numbers of wolves in GMUs 17B&C and predation on moose

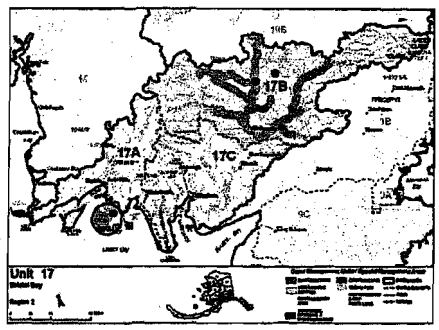
Department position: Do Not Adopt

Proposal 62

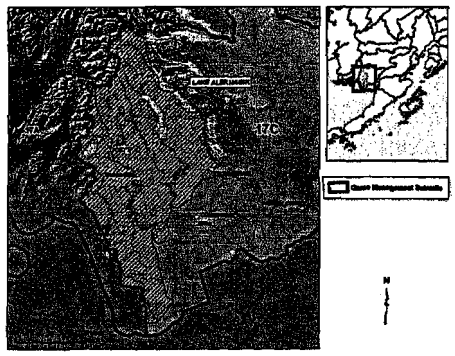
- Effect: Expand area open for moose hunting during December registration hunt in GMU 17C and change bag limit to antlered bulls only
- Issue: Moose numbers in western GMU 17C are now sufficient to include that area in GMU 17B&C winter hunt
- Department position: Adopt

RM 585 Moose Hunt

- Dec 1 – 31
- Any Bull
- Closed areas –
  - 17B above Chilchitna R.
  - Iowithla R. Drainage in 17C
  - 17C west of Wood R. and Sunshine Valley



Proposal 62



Proposal 62

- Expands RM 585 in to western 17C
- Changes bag limit to 1 antlered bull
- Eliminates western 17C from RM 575
  (2 week winter EO hunt)
- Greatly simplifies GMU 17 moose regs

Proposal 62

- Effect: Expand area open for moose hunting during December registration hunt in GMU 17C and change bag limit to antlered bulls only
- Issue: Moose numbers in western GMU 17C are now sufficient to include that area in GMU 17B&C winter hunt
- Department position: Adopt

Proposal 55

- **Effect: Change the Intensive Management population and harvest objective for the Mulchatna Caribou Herd**
- **Issue: IM objectives established in 2001 were too high**
- **Department position: Adopt**

Mulchatna Caribou Herd Intensive Management Objectives

Population Objective:

Present: 100,000 – 150,000 caribou

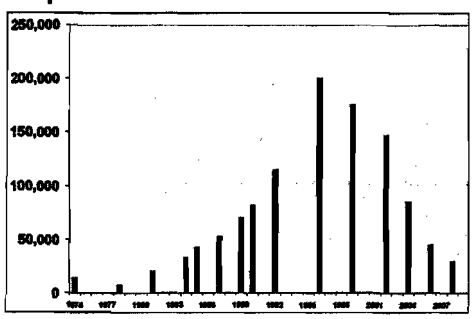
Proposed: 30,000 – 80,000 caribou

Harvest Objective:

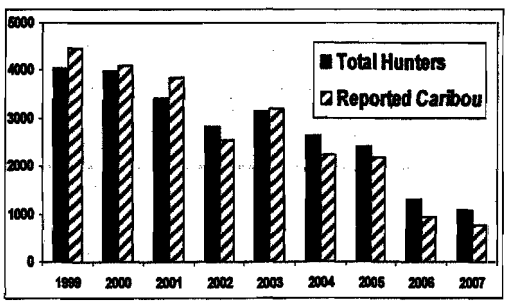
Present: 6,000 – 15,000 caribou

Proposed: 2,400 - 8,000 caribou

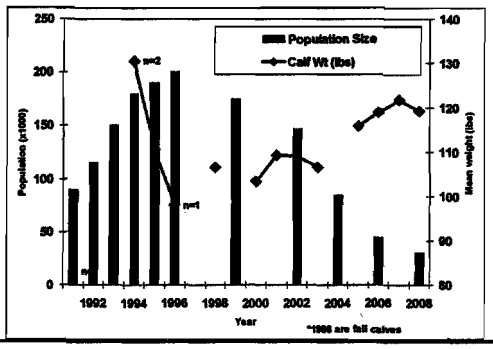
Mulchatna Caribou Population Estimates 1974 - 2008



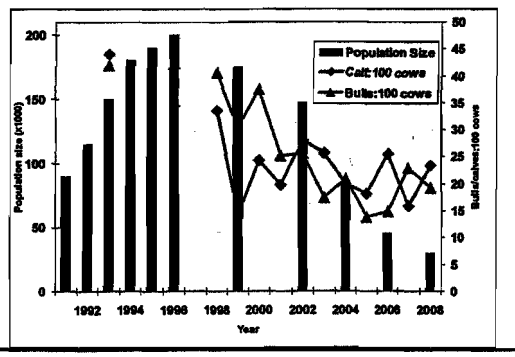
Hunter Numbers and Reported Harvest



MCH Summer Population and Spring Calf Weights*



MCH – Summer Popl. Est. Fall bull:cow & calf:cow ratios



Proposal 56

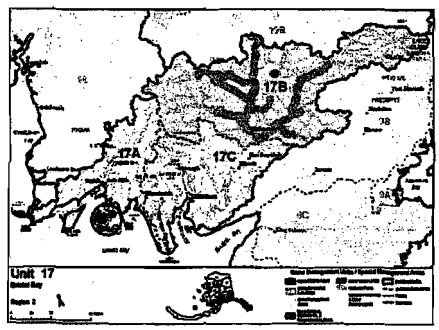
- Effect: Change caribou bag limit in portions of GMU 17A&C
- Issue: Expectation that bag limit in a portion of GMU 17A&C will be 5 caribou
- Department position: Adopt

Area affected by Proposal 56

GMU 17A –
all drainages east of Right Hand Point

GMU 17C –
west of Wood River and Wood River Lakes

Present season/bag limit -
up to 5 caribou, opened by EO



Area closed for protection of nearby introduced Nushagak Peninsula Caribou Herd

&

Prior to range expansion of MCH

Present regulation –
"5 caribou, season to be announced; however, the commissioner may close and immediately reopen, by emergency order, a season during which the bag limit is less than 5 caribou"

BOG's direction was that area could be opened when large numbers of Mulchatna caribou moved through area

Caribou Present in Area ??

December 1996 –
emergency regulation opening (prior to EO authority)

May 2001

However,

Regulation shows bag limit of 5,

and there is expectation by hunters that there is an area w/in range of MCH where they can kill 5 caribou

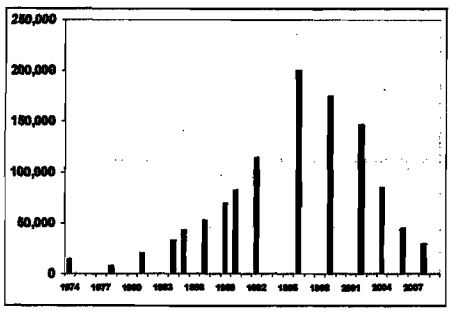
Proposal 56

- Effect: Change caribou bag limit in portions of GMU 17A&C
- Issue: Expectation that bag limit in a portion of GMU 17A&C will be 5 caribou
- Department position: Adopt

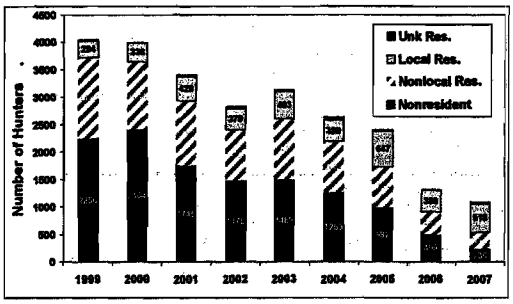
Proposal 57

- Effect: Close nonresident hunting for Mulchatna caribou
- Issue: Decline in Mulchatna Caribou Herd
- Department position: No Recommendation

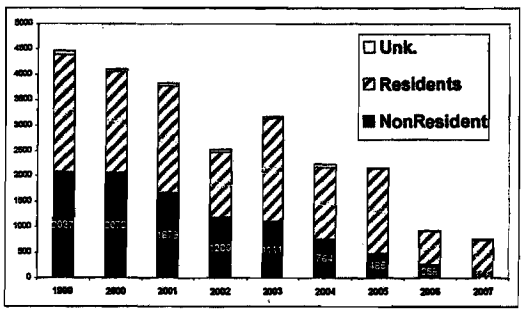
Mulchatna Caribou Population Estimates 1974 - 2008



Mulchatna Caribou Hunters: 1999 - 2007



Reported Harvest 1999-2007



Proposal 57

- Effect: Close nonresident hunting for Mulchatna caribou
- Issue: Decline in Mulchatna Caribou Herd
- Department position: No Recommendation

Proposal 52

- Effect: Change the brown bear hunting season dates in GMU 17
- Issue: Change opening to Sept. 1st
- Department position: Adopt

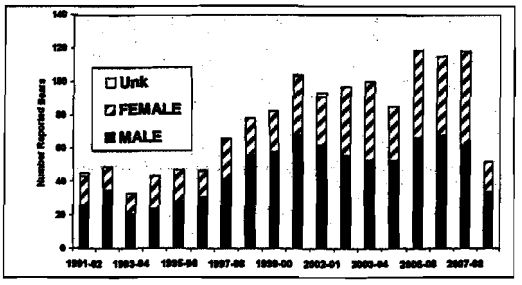
GMU 17 Brown Bear

Season Dates:

Sept 10 – May 25

No unit-wide population est.

GMU 17 Brown Bear 1991-2008

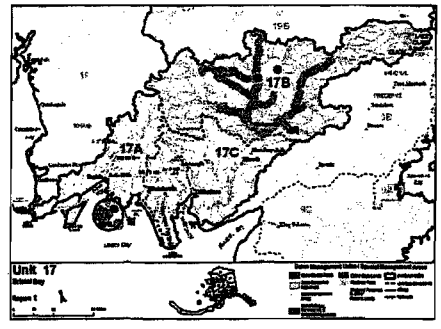


Proposal 52

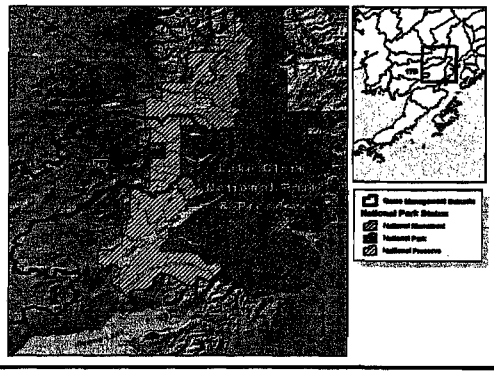
- Effect: Change the brown bear hunting season dates in GMU 17
- Issue: Change opening to Sept. 1st
- Department position: Adopt

Proposal 51

- Effect: Change season and bag limit for brown bears in national preserve portion of GMU 17B
- Issue: Objection to including preserve lands with season/bag limit in remainder of GMU 17B
- Department position: Do Not Adopt



Proposal 51



1997 – season changed to: Sept 20 - Oct 10
April 15 - May 25

2001 – season changed to: Sept 20 – May 25

2003 – bag limit changed to: 1 bear/year

– season changed to: Sept 10 – May 25
(note: remainder of 17B still Sept 20)

Effect of regulation changes?

1997-2008 – 10 bears reported taken in area

Since 2003 – 6 bears taken Sept 10-19

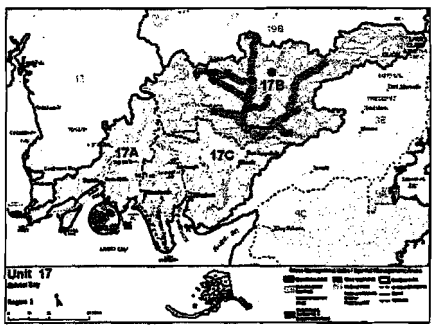
No hunter has taken more than 1 bear

Proposal 51

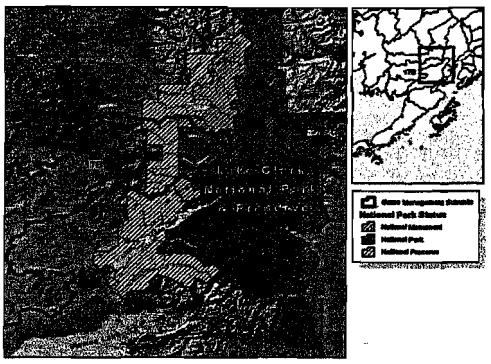
- Effect: Change season and bag limit for brown bears in national preserve portion of GMU 17B
- Issue: Objection to including preserve lands with season/bag limit in remainder of GMU 17B
- Department position: Do Not Adopt

Proposal 67

- **Effect: Change bag limit for wolves in national preserve portion of GMU 17B**
- **Issue: Objection to including preserve lands with bag limit in remainder of GMU 17B**
- **Department position: Do Not Adopt**



Proposal 67



Proposal 67

- **Effect: Change bag limit for wolves in national preserve portion of GMU 17B**
- **Issue: Objection to including preserve lands with bag limit in remainder of GMU 17B**
- **Department position: Do Not Adopt**

RC 105

Table 1. Nelchina Caribou: Number of Permit Applicants, Permits Awarded, Hunters, and Harvests, 1946 - 2008

Year	Permit Applicants for Drawing or Tier II	Drawing or Tier II Permits Awarded	Total Permits, All Hunts**	Total Hunters, All Hunts	Harvest, All State Hunts	Harvest, All Federal Hunts*	Total Harvests, All Hunts
1946							200
1947							200
1948							300
1949							350
1950							500
1951							525
1952							450
1953							700
1954							2,000
1955							4,000
1956							3,500
1957							2,500
1958							3,500
1959				1,118			4,000
1960				5,209			5,500
1961				3,694			8,000
1962				5,702			3,500
1963				6,699			6,300
1964				5,052			8,000
1965				3,088			7,100
1966				2,799			5,500
1967				2,977			4,000
1968				2,065			6,000
1969				6,487			7,800
1970				3,167			7,247
1971				6,967			10,131
1972				1,586			555
1973				1,982			810
1974				2,550			1,193
1975				1,991			806
1976				1,807			822
1977	1,383	750	750	580			360
1978	2,775	1,000	1,000	747			539
1979	5,600	1,300	1,300	972			630
1980	6,841	1,300	1,300	982			621
1981	6,819	1,601	1,601	1,285			901
1982	9,110	1,533	1,533	1,334			861
1983	9,720	1,800	1,800	1,424			969
1984	12,516	1,900	1,900	1,504			1,063
1985	2,813	1,800	1,800	1,501			989
1986	11,061	1,300	2,432	1,678			958
1987	11,601	1,700	2,883	2,262			1,747

[continued]

Table 1. [continued]

Year	Permit Applicants for Drawing or Tier II	Drawing or Tier II Permits Awarded	Total Permits, All Hunts**	Total Hunters, All Hunts	Harvest, All State Hunts	Harvest, All Federal Hunts*	Total Harvest, All Hunts
1988	14,447	1,775	2,935	2,299			1,656
1989	16,242	2,230	3,674	2,847			1,986
1990		6,825	7,789	5,859	2,823	197	3,020
1991	6,840	2,802	5,943	4,569	2,273	647	2,920
1992	13,391	6,502	8,516	6,426	3,449	488	3,937
1993	15,504	9,003	11,358	8,465	4,945	342	5,287
1994	16,563	7,472	10,187	6,321	3,360	219	3,579
1995	17,553	12,001	14,845	11,510	4,726	227	4,953
1996	18,469 ***	9,980 ***	50,361	19,397	5,351	277	5,628
1997	16,049 ***	10,000 ***	37,726	13,612	3,863	164	4,027
1998	16,989	10,000	13,500	6,637	2,890	429	3,319
1999	17,079	8,000	10,954	6,777	2,029	427	2,456
2000	11,182	2,000	4,665	3,130	774	316	1,090
2001	8,720	1,996	4,703	3,142	999	501	1,500
2002	7,734	2,000	4,726	3,177	974	370	1,344
2003	7,825	2,005	4,663	2,732	756	331	1,085
2004	6,709	2,001	4,606	2,848	905	356	1,261
2005	6,245	4,001	6,571	4,914	2,184	627	2,811
2006	7,935	5,496					
2007	6,956	3,000					
2008	7,394	2,500					
Average, 1959 2008	10,325	3,987	7,794	4,125			3,165
Average, 1981 2008	11,239	4,401	8,867	5,026			2,374
Average, 1990 2008	11,619	5,662	12,570	6,845	2,644	370	3,014

Note: blank cells mean data unavailable or not applicable for drawing hunt column prior to 1977 and federal hunt column prior to 1990.

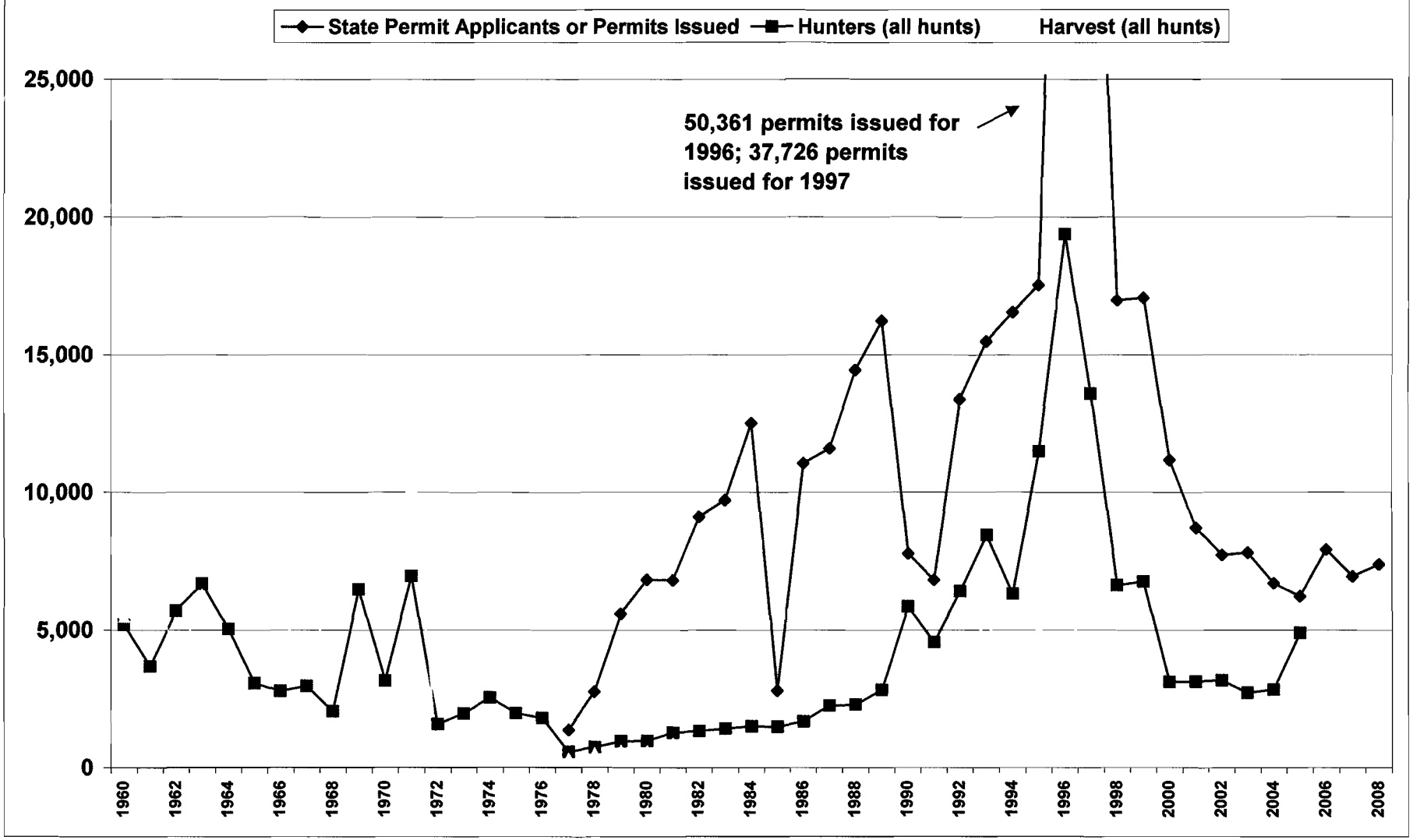
* Federal registration hunt in GMU 13 established in 1990

** 1981 to 1984 there was a general drawing and a subsistence drawing hunt. 1986 to 1989 there was a general drawing hunt and a subsistence registration hunt.

***Tier II hunt only. Unlimited Tier I permits available through registration; 36,601 Tier I permits issued 1996 and 25,376 in 1997.

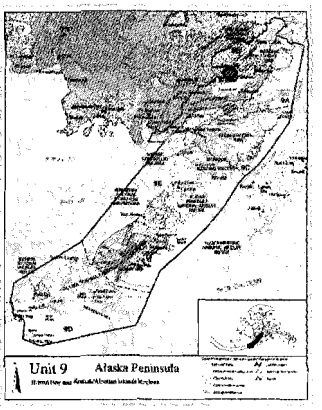
Source: Alaska Department of Fish and Game, Division of Wildlife Conservation

Figure 1. Nelchina Caribou: Harvests, Number of Hunters, and Number of Permit Applicants or Permits Issued, 1960 - 2008



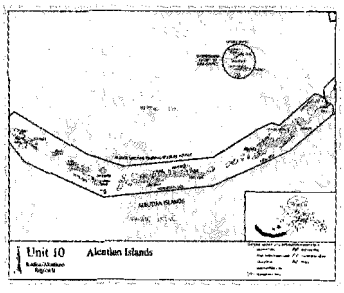
RC # 106

Game Management Units 9 & 10
The Alaska Peninsula and Aleutian Islands



GMU 9

- Area: 34,000 mi²
- Length: 600 miles
- Population: 4,000
- Villages: 24
- GMU Issues:
  - Pebble Mine
  - Oil Development



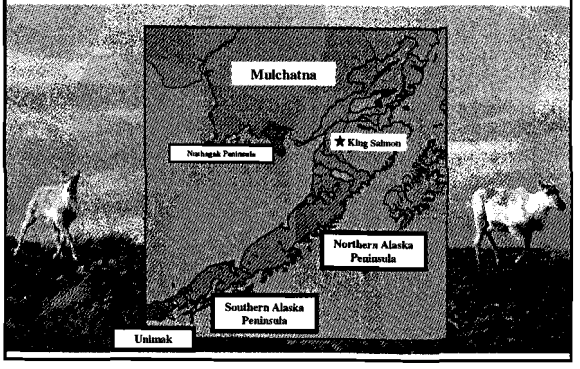
GMU 10

- Area: 1,600 mi²
- Length: 970 miles
- Sparsely Populated
- GMU Issues:
  - Rats
  - Fox
  - etc

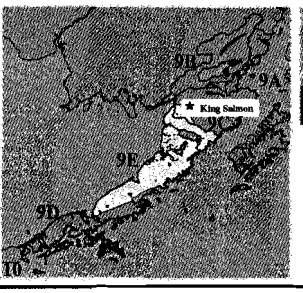
Brown Bears

Population Size: ~ 8,000
Status: Stable?
Harvest: ~320 per season

Caribou



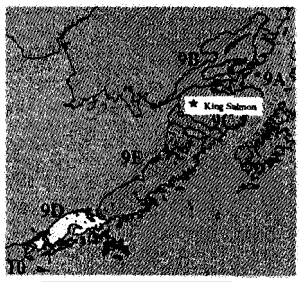
Northern Alaska Peninsula Caribou Herd (NAPCH)

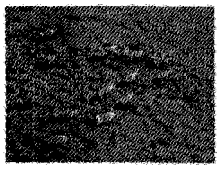


Population Size: 2,000+
Status: Declining
Closed to Hunting

RC # _____

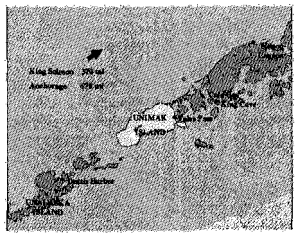
Southern Alaska Peninsula Caribou Herd (SAPCH)





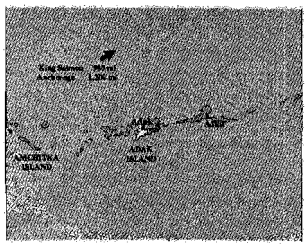
Population Size: 700
Status: Stable
No Hunting Permits Issued

Unimak Caribou Herd (UCH)



Population Size: 300+
Status: Declining
Harvest: 11 caribou

Adak Caribou Herd

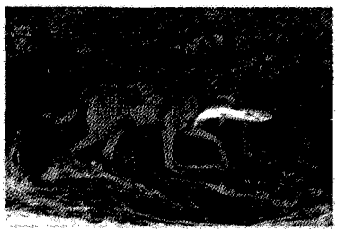


Population Size: 3000+
Status: Increasing?
Harvest: 200 – 300

Moose

Population Size: 8,000
Status: Stable
Harvest: 158 bulls

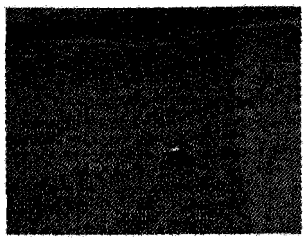
Wolf



Density 5-10 / 1000 km²
Status: Unknown
Harvest: ~80 wolves

Furbearers

Average Harvest (6 year average)
- 105 Beaver
- 31 Lynx
- 102 Otter
- 30 Wolverine



RC # _____

Game Management Units 9 & 10
The Alaska Peninsula and
Aleutian Islands

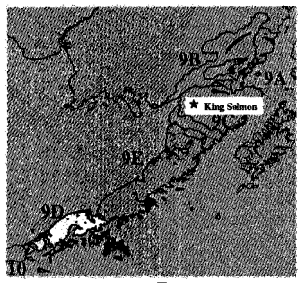
RC # 107

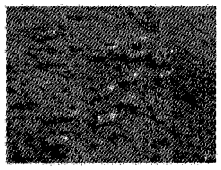
Special Board Report

Unit 9 Predator Control Area

Reduce wolf predation of caribou calves in the Southern Alaska Peninsula Caribou Herd (Subunit 9D)

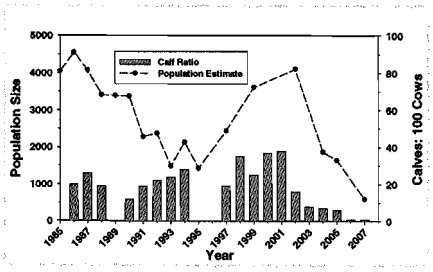
Southern Alaska Peninsula Caribou Herd (SAPCH)



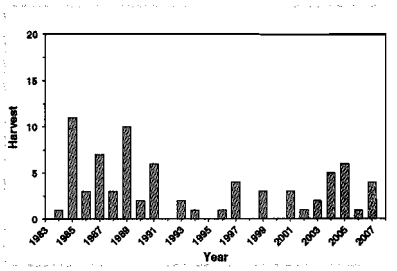


Population Size: 700
Status: Stable

SAPCH – Subunit 9D
2007 Population Status



Wolf – GMU 9D
Hunting and Trapping Harvest



SAPCH – GMU 9D
Program Implementation

- Department staff removed 28 wolves from the caribou calving grounds
  - 14 adults were members of 2 wolf packs
  - 14 pups located in 2 dens, belonging to 1 pack
  - In keeping with Board directive and existing division orphan animal protocols the pups were euthanized
- Monitored the survival of 65 caribou calves and investigated causes of calf mortality

SAPCH – GMU 9D
Caribou Calving

- Calving occurred on traditional calving areas for the SAPCH
- Adult female pregnancy rate was good
  - (86% of cows 2+ years of age were pregnant)
- Calves were born in good health
  - No still births detected
  - Good birth weights and mobility

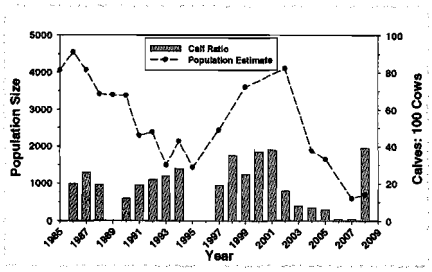
SAPCH – GMU 9D
Caribou Calf Survival

- Early-calf survival was excellent (69%)
- Late-calf survival was good (62%)
- Predation was the primary cause of death

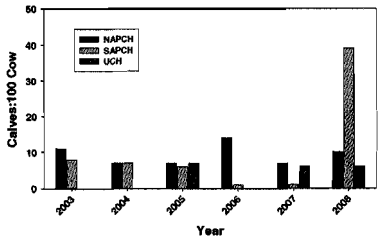
SAPCH – GMU 9D
Results

	2007 Pre-Control	2008 Post-control
Calf Survival to 1 month	< 1%	57%
Fall Calf Ratio (calves:100 cows)	< 1	39
Population Size	600	700

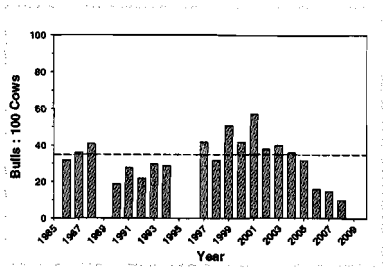
SAPCH – Subunit 9D
Population Status



SAPCH – Subunit 9D
Calf Ratio Comparison



SAPCH – Subunit 9D
Population Status



SAPCH – Subunit 9D
Expectations for 2009

- Fewer adult wolves in control area prior to 2009 removal
- Reduced probability of encountering wolf pups in control area
- Continued improvements in calf survival
- Increased bull ratio if program continues to be successful
- Decrease in fall calf ratio if same success in reducing predation is realized due to new cohorts of juvenile cows in composition surveys

RC # 108

Game Management Units 9 & 10 Proposals

Species	# of Proposals
Moose	2
Caribou	2
Bear	6
Wolf	2
Predator Control	1

Moose Proposals

Proposal 58
Moose – Unit 9

Modify bag limit for winter hunts

***Current Bag Limit*: 1 Bull**
***Proposed Bag Limit*: 1 Antlered Bull**

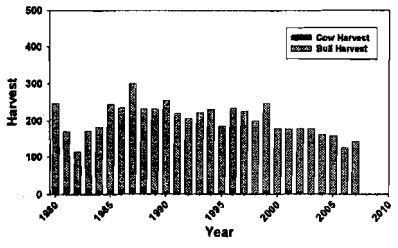
Adopt
Department Proposal

Advisory Committees		
Iliamna	Supported	5-0
Lower Bristol Bay	Supported	7-0
Naknek/Kvichak	Opposed	0-7

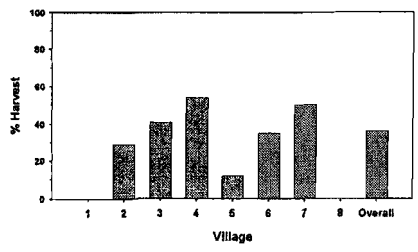
Proposal 58
Moose – Unit 9
Affected Hunts

Subunit	*Season*	*Current Bag limit*
9B	Dec 15 – Jan 15	Any Bull
9C Naknek	Dec 1 – Dec 31	Any Bull
9C Remainder	Dec 15 – Jan 15	Any Bull
9D	Dec 15 – Jan 20	Any Bull
9E	Dec 1 – Jan 20	Any Bull

Proposal 58
Moose – Unit 9
Annual Harvest



Proposal 58
Moose – Unit 9
Cow Harvest?



Proposal 58
Moose – Unit 9

Modify bag limit for winter hunts

***Current Bag Limit*: 1 Bull**
***Proposed Bag Limit*: 1 Antlered Bull**

Adopt
Department Proposal

Advisory Committees
Iliamna Supported 5-0
Lower Bristol Bay Supported 7-0
Naknek/Kvichak Opposed 0-7

Proposal 59
Moose – Unit 9B

Extend the Resident Moose Season in GMU 9B
Add 12 Days to the Fall Hunt

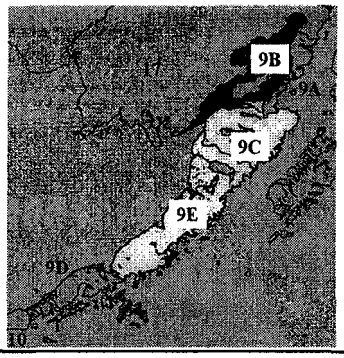
Do Not Adopt

Advisory Committees
Iliamna Opposed 1-4

Proposal 59
Moose – Unit 9B

Season	*Bag limit*	*Season Length*
STATE		
Sept 1 – Sept 15	Any Bull	15 Days
Dec 15 – Jan 15	Any Bull	32 Days (47 Days Total)
FEDERAL		
Aug 20 – Sept 15	Any Bull	27 Days
Dec 1 – Jan 15	Any Bull	46 Days (73 Days Total)

Proposal 59
Moose Conflict Areas



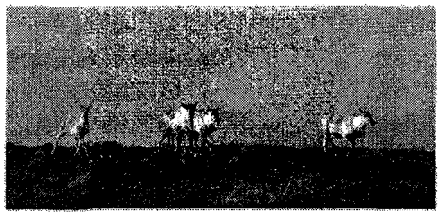
Proposal 59
Moose – Unit 9B

Extend the Resident Moose Season in GMU 9B
Add 12 Days to the Fall Hunt

Do Not Adopt

Advisory Committees
Iliamna Opposed 1-4

Caribou Proposals



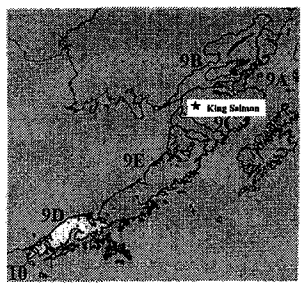
Proposal 53
Caribou – Subunit 9D

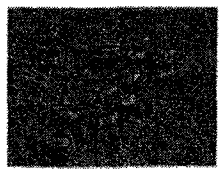
Hunting Closure for the Southern Alaska Peninsula Caribou Herd (SAPCH) in GMU 9D

Adopt
Department Proposal

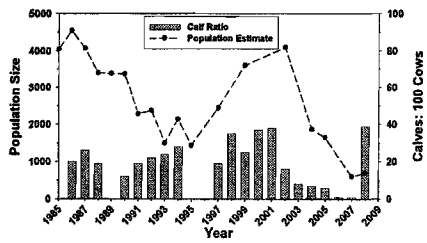
Advisory Committees
No Votes

Southern Alaska Peninsula Caribou Herd (SAPCH)

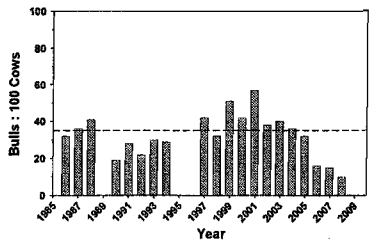




Proposal 53
SAPCH – Subunit 9D
Population History



Proposal 53
SAPCH – Subunit 9D
Bull Ratio



SAPCH – GMU 9D
IM Objectives

	Current	Recommended
Population Size	4,000 – 5,000 With Unimak	1,500 - 4,000
Harvest Objective	200 – 500 With Unimak	150 – 400

Proposal 53
Caribou – Subunit 9D

Hunting Closure for the Southern Alaska Peninsula Caribou Herd (SAPCH) in GMU 9D

Adopt
Department Proposal

Advisory Committees
No Votes

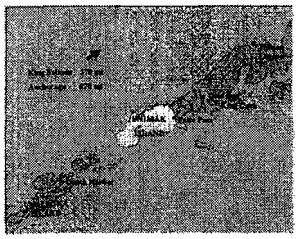
Proposal 54
Caribou – Unimak Island GMU 10

Hunting Closure for the Unimak Caribou Herd (UCH)

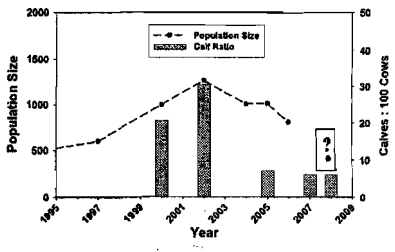
Adopt Department Proposal

Advisory Committees
No Votes

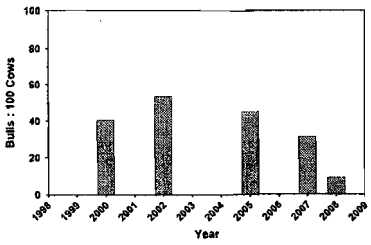
Unimak Caribou Herd (UCH)



Proposal 54
UCH – Subunit 10
Unimak Caribou Herd



Proposal 54
UCH – Subunit 10
Bull Ratio



Proposal 54
Caribou – Unimak Island GMU 10

Hunting Closure for the Unimak Caribou Herd (UCH)

Adopt Department Proposal

Advisory Committees
No Votes

Brown Bears

Proposal 45
Brown Bear – Subunit 9C

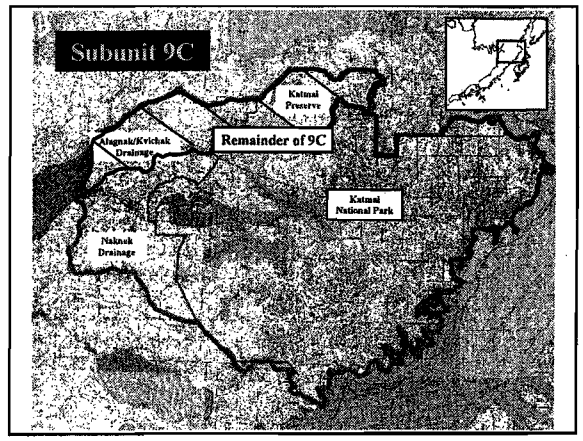
Closes the fall brown bear hunting season in the "Remainder of Subunit 9C" Alagnak River & Katmai Preserve

Do Not Adopt

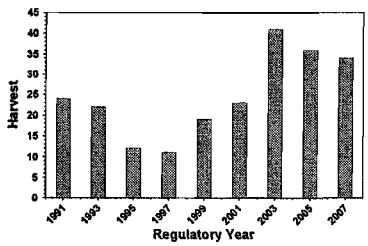
Advisory Committees

Iliamna Opposed 0-5

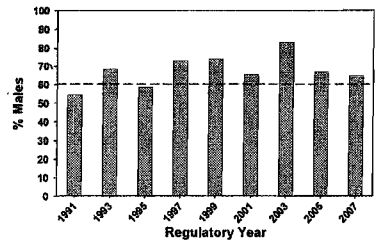
Naknek/Kvichak Opposed 0-7



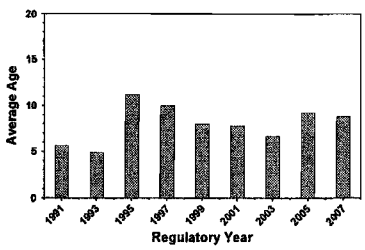
Proposal 45
Remainder – Subunit 9C
Harvests



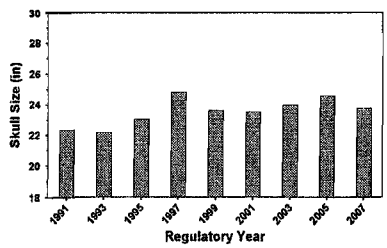
Proposal 45
Remainder - Subunit 9C
% Males in Harvest



Proposal 45
Remainder – Subunit 9C
Average Age of Males



Proposal 45
Remainder – Subunit 9C
Average Male Skull Size



Proposal 45
Brown Bear – Subunit 9C

Closes the fall brown bear hunting season in the "Remainder of Subunit 9C" Alagnak River & Katmai Preserve

Do Not Adopt

Advisory Committees

Iliamna Opposed 0-5

Naknek/Kvichak Opposed 0-7

Proposal 44
Brown Bear – Subunit 9C

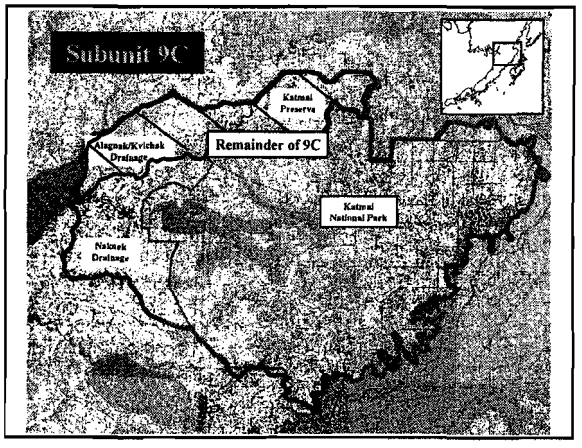
Establish a drawing hunt for brown bear in the "Remainder of GMU 9C" Alagnak River & Katmai Preserve

Take No Action

Advisory Committees

Iliamna Opposed 0-5

Naknek/Kvichak Opposed 0-7



Proposal 44
Brown Bear – Subunit 9C

Establish a drawing hunt for brown bear in the "Remainder of GMU 9C" Alagnak River & Katmai Preserve

Take No Action

Advisory Committees

Iliamna Opposed 0-5

Naknek/Kvichak Opposed 0-7

Proposal 43
Brown Bear – Subunit 9C

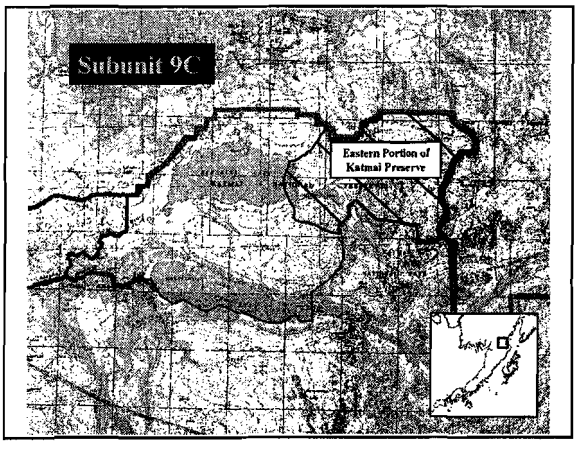
Closes brown bear hunting in the eastern portion of Katmai National Preserve

No Recommendation

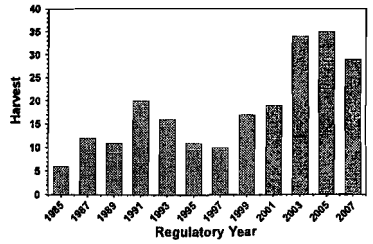
Advisory Committees

Iliamna Opposed 0-5

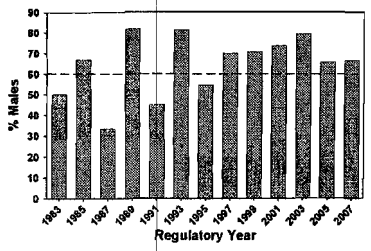
Naknek/Kvichak Opposed 0-7



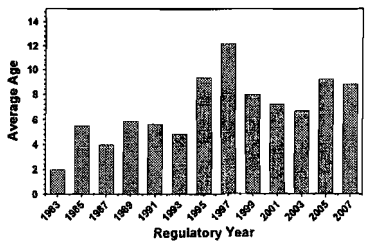
Proposal 43
Katmai Preserve – Subunit 9C
Brown Bear Harvests



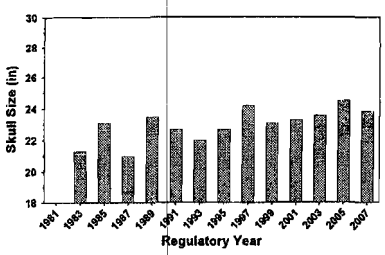
Proposal 43
Katmai Preserve - Subunit 9C
% Males in Harvest



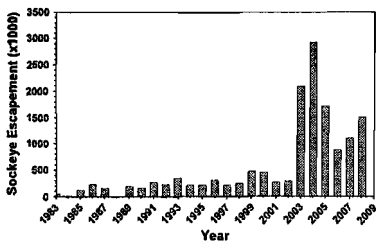
Proposal 43
Katmai Preserve – Subunit 9C
Average Age of Males



Proposal 43
Katmai Preserve – Subunit 9C
Average Male Skull Size



Proposal 43
Katmai Preserve – Subunit 9C
Alagnak River Salmon Escapement



Proposal 43
Brown Bear – Subunit 9C

Closes brown bear hunting in the eastern portion of Katmai National Preserve

No Recommendation

Advisory Committees

Iliamna	Opposed	0-5
Naknek/Kvichak	Opposed	0-7

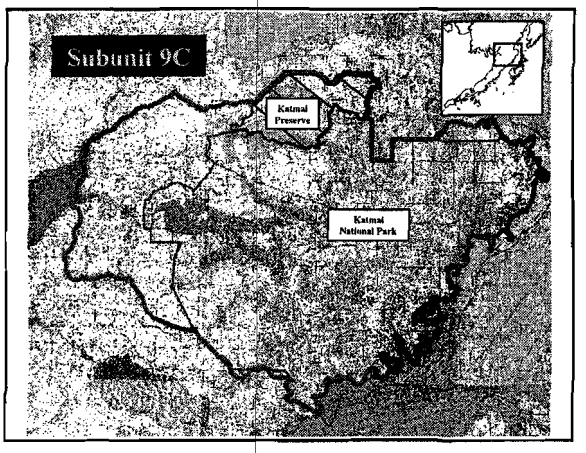
Proposal 42
Brown Bear – Subunit 9C

Shortens the brown bear hunting season in Katmai National Preserve

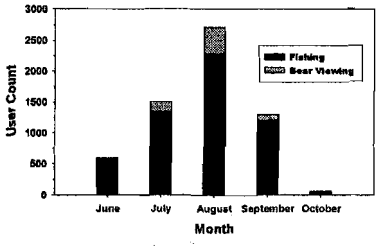
***Current Season*: October 1 to October 21**
***Proposed Season*: October 15 to October 21**

No Recommendation

Advisory Committees
Iliamna Opposed 0-5
Naknek/Kvichak Opposed 0-7



Proposal 42
Katmai Preserve – Subunit 9C
2007 Commercial User Activity



NPS Data

Proposal 42
Brown Bear – Subunit 9C

Shortens the brown bear hunting season in Katmai National Preserve

***Current Season*: October 1 to October 21**
***Proposed Season*: October 15 to October 21**

No Recommendation

Advisory Committees
Iliamna Opposed 0-5
Naknek/Kvichak Opposed 0-7

Proposal 46
Brown Bear – Subunit 9D

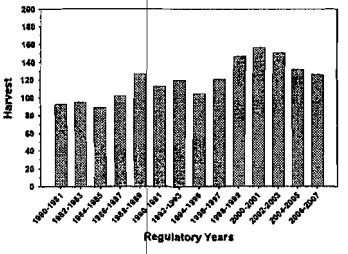
Change Brown Bear Hunting Season Dates in Subunit 9D

***Current Season*: October 1 to October 21**
***Proposed Season*: September 20 to October 15**

Do Not Adopt

Advisory Committees
No Votes

Proposal 46
Brown Bear – Subunit 9D
Harvests



5% Harvest Rate

Proposal 46
Brown Bear – Subunit 9D
Issues Stated

- **Bear predation**
  - **Caribou – bears are not a significant predator of calves**
  - **Moose – not an Intensive Management species in GMU 9D**
  - **Proposed changes will not improve calf survival**
- **Human Safety**
  - **Increased harvest will not improve bear/human interactions**
  - **Best addressed though changes in human behavior in problem areas**

Proposal 46
Brown Bear – Subunit 9D

Change Brown Bear Hunting Season Dates in Subunit 9D

***Current Season*: October 1 to October 21**
***Proposed Season*: September 20 to October 15**

Do Not Adopt

Advisory Committees
No Votes

Proposal 47
Brown Bear – Subunit 9E

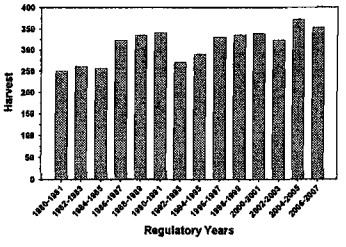
Liberalize Seasons and Bag Limit for Residents

***Current*: "every other year" 1 bear every 4 years**
***Proposed*: "every year" 1 bear every year**

Do Not Adopt

Advisory Committees
Lower Bristol Bay Supported 7-0
Naknek/Kvichak Supported 7-0

Proposal 47
Brown Bear – Subunit 9E
Harvests



6% Harvest Rate

Proposal 47
Brown Bear – Subunit 9E
Issues Stated

- **Bear predation**
  - **Caribou Calves - Bears killed 20% of neonate calves in 2005-2007**
  - **Moose Calves – Bear predation unknown**
  - **Increased harvest is not expected to improve calf survival**
- **Human Safety**
  - **Increased harvest will not improve bear/human interactions**
  - **Best addressed though changes in human behavior in problem areas**

Proposal 47
Brown Bear – Subunit 9E

Liberalize Seasons and Bag Limit for Residents

***Current*: "every other year" 1 bear every 4 years**
***Proposed*: "every year" 1 bear every year**

Do Not Adopt

Advisory Committees
Lower Bristol Bay Supported 7-0
Naknek/Kvichak Supported 7-0

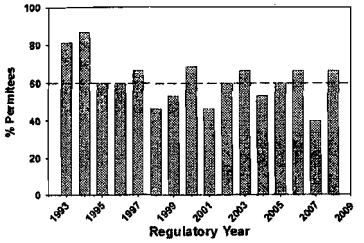
Proposal 48
Brown Bear – Unit 10

- Establishes an allocation for brown bear drawing permits for Unimak Island (40% nonresidents) and
- Limit the number of nonresidents that can apply by administering the drawing similar to Kodiak brown bear permit system.

Do Not Adopt

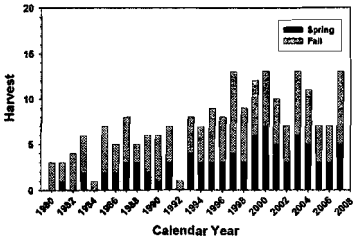
Advisory Committees
No Votes

Proposal 48
Brown Bear - Unit 10
Alaskan Resident Permit Holders

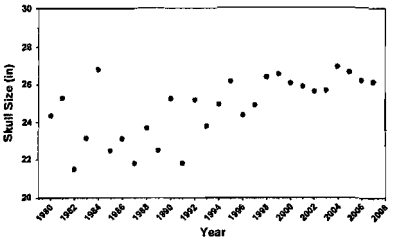


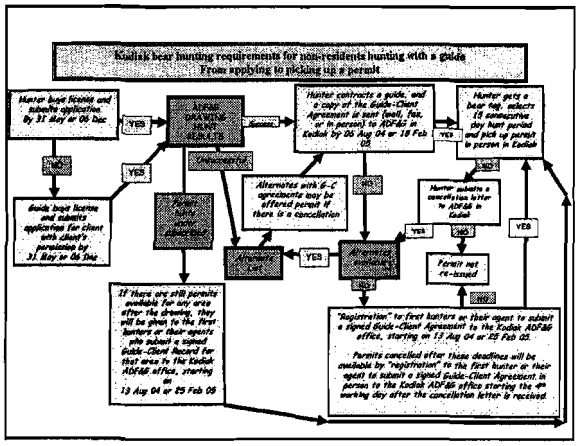
Average of 59% Residents Since 2000

Proposal 48
Brown Bear - Unit 10
Annual Harvest



Proposal 48
Brown Bear - Unit 10
Harvest Characteristics





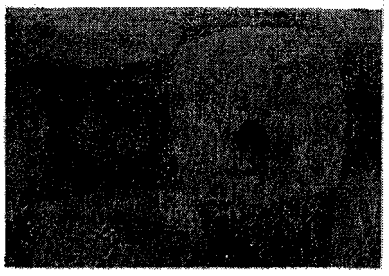
Proposal 48
Brown Bear – Unit 10

- Establishes an allocation for brown bear drawing permits for Unimak Island (40% nonresidents) and
- Limit the number of nonresidents that can apply by administering the drawing similar to Kodiak brown bear permit system.

Do Not Adopt

Advisory Committees
No Votes

Wolf Proposals



Proposal 66
Wolf – Unimak GMU 10

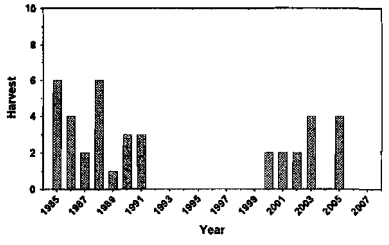
Extend wolf hunting season in Unit 10

Current: **Aug 10 – Apr 30**
Proposed: **Aug 10 – May 25**

Do Not Adopt

Advisory Committees
No Votes

Proposal 66
Wolf – GMU 10
Annual Harvest



Proposal 66
Wolf – Unimak GMU 10

Extend wolf hunting season in Unit 10

Current: **Aug 10 – Apr 30**
Proposed: **Aug 10 – May 25**

Do Not Adopt

Advisory Committees
No Votes

Proposal 64
Wolf – GMU 9

Reduce wolf hunting season and bag limit in National Preserves in GMU 9

Current: **Aug 10 – May 25** **10 wolves**
Proposed: **Aug 10 – April 30** **5 wolves**

Do Not Adopt

Advisory Committees

Iliamna	Opposed	0-5
Lower Bristol Bay	Opposed	0-7
Naknek/Kvichak	Opposed	0-7

Proposal 65
Wolf – Subunits 9C & 9E

Amended by Proponent

Requests a predator control implementation plan be developed for Subunits 9C and 9E

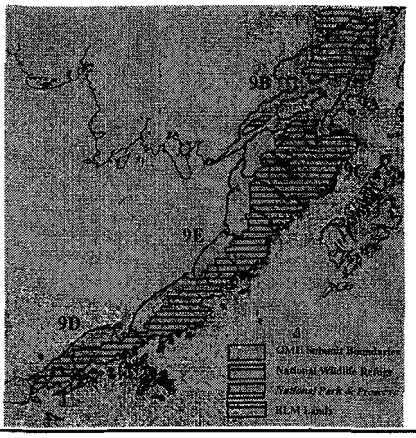
Do Not Adopt

Advisory Committees

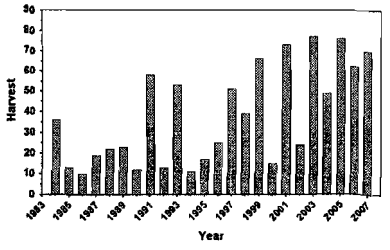
Iliamna	Supported	5-0
Lower Bristol Bay	Supported	7-0
Naknek/Kvichak	Supported	7-0

Proposal 65
Intensive Management
NAPCH and Moose – Subunits 9C & 9E

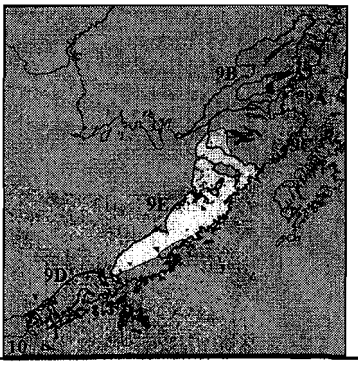
- Intensive Management Options Evaluated
  - March 2005
  - March 2007
  - March 2008
- Board of Game Decision
  - Predator Control was not feasible
    - Extent of Federal lands
    - Caribou - Nutrition is a key factor in the population decline
    - Moose - meet Intensive Management Objectives



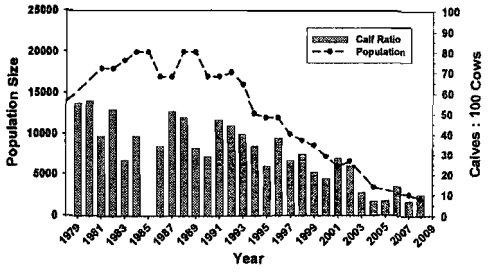
Proposal 65
Wolf – GMU 9
Annual Harvest



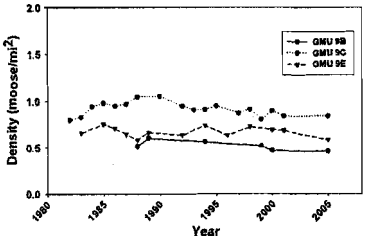
Northern Alaska Peninsula Caribou Herd
NAPCH Range



NAPCH– Subunits 9C & 9E
Population Status



Moose – Unit 9
Density Trends



Proposal 65
Wolf – Subunits 9C & 9E

Amended by Proponent

Requests a predator control implementation plan be developed for Subunits 9C and 9E

Do Not Adopt

Advisory Committees

Iliamna	Supported 5-0
Lower Bristol Bay	Supported 7-0
Naknek/Kvichak	Supported 7-0

Proposal 65
Intensive Management Steps - Moose

Statutory Considerations

- Has the big game populations been identified as important for high levels of human consumptive use (i.e. intensive management)?
  - **Yes**
- Has the board established population and harvest objectives?
  - **Yes**
- Have the population and harvest objectives been achieved?
  - **Yes**
- Has there been a significant reduction in take?
  - **No**

Proposal 65
Intensive Management Steps - Moose

Other Considerations

- Reduced seasons, reduced bag limits, elimination of non-resident hunting, etc.
  - **No**
- Feasibility and cost effectiveness (i.e., what are the effects of weather, terrain, land ownership).
  - **Variable Moose Habitat Quality**
  - **70% Federal Lands**
  - **Weather Conditions**
    - **Poor Snow Cover**
    - **High Winds**
  - **Fuel Costs**

Proposal 65
Wolf – Subunits 9C & 9E

Amended by Proponent

Requests a predator control implementation plan be developed for Subunits 9C and 9E

Do Not Adopt

Advisory Committees

Iliamna	Supported 5-0
Lower Bristol Bay	Supported 7-0
Naknek/Kvichak	Supported 7-0

Proposal 65
Intensive Management Steps - NAPCH

Statutory Considerations

- Has the big game populations been identified as important for high levels of human consumptive use (i.e. intensive management)?
  - **Yes**
- Has the board established population and harvest objectives?
  - **Yes**
- Have the population and harvest objectives been achieved?
  - **No**
- Has there been a significant reduction in take?
  - **Yes**
- Is predation an important cause of the failure to achieve population or harvest objectives?
  - **Predation is a Factor**
- Can a reduction in predation reasonably be expected to aid the reaching of the objectives?
  - No

Proposal 65
Intensive Management Steps - NAPCH

Other Considerations

- Reduced seasons, reduced bag limits, elimination of non-resident hunting, etc.
  - **Yes – No Hunting Season**
- Feasibility and cost effectiveness (i.e., what are the effects of weather, terrain, land ownership).
  - **70% Federal Lands**
  - **Weather Conditions**
    - **Poor Snow Cover**
    - **High Winds**
  - **Fuel Costs**

Proposal 65
Wolf – Subunits 9C & 9E

Amended by Proponent

Requests a predator control implementation plan be developed for Subunits 9C and 9E

Do Not Adopt

Advisory Committees

Iliamna	Supported	5-0
Lower Bristol Bay	Supported	7-0
Naknek/Kvichak	Supported	7-0

Proposal 69
Wolf – GMUs 9 & 17

Requests a predator control implementation plan be developed for GMUs 9 & 17

Do Not Adopt

END

RC 109

5 AAC 85.025. Hunting seasons and bag limits for caribou. (a) ...

Units and Bag Limits	Resident Open Season (Subsistence and General Hunts)	Nonresident Open Season
(8)		
Unit 13 1 caribou per regulatory year by **community harvest permit** [TIER II PERMIT ONLY; UP TO 10,000 PERMITS MAY BE ISSUED; THE COMMISSIONER SHALL CLOSE THE SEASON BY EMERGENCY ORDER WHEN UP TO 5,000 CARIBOU HAVE BEEN TAKEN BY TIER II HUNTERS]**; or**	Aug. 10 - Sept. 20 (Subsistence hunt only) Oct. 21 - Mar. 31 (Subsistence hunt only)	No open season.
1 bull by Tier I Subsistence permit only	**Aug. 10 - Sept. 20 (Subsistence hunt only)**	**No open season.**

5 AAC 85.045. Hunting seasons and bag limits for moose. (a) ...

Units and Bag Limits	**Resident Open Season (Subsistence and General Hunts)**	**Nonresident Open Season**
(11)		
(9)		
Unit 11		
1 bull by community harvest permit only; up to xx bulls may be taken or	**Aug. 10 - Sept. 20 (Subsistence hunt only)**	**No open season.**
1 bull with spike-fork	**Aug. 10 - Sept. 20**	**No open season.**

antlers or 50-inch antlers or antlers with 3 or more brow tines on one side; by community harvest permit only; or	**(Subsistence hunt only)**	
1 bull with spike-fork antlers or 50-inch antlers or antlers with 3 or more brow tines on one side	Aug. 20 - Sept. 20	Aug. 20 - Sept. 20
Unit 12, that portion south and west of the Little Tok River		
1 bull by community harvest permit only; up to xx bulls may be taken or	**Aug. 10 - Sept. 20 (Subsistence hunt only)**	**No open season.**
1 bull with spike-fork antlers or 50-inch antlers or antlers with 4 or more brow tines on one side; by community harvest permit only	**Aug. 10 - Sept. 20 (Subsistence hunt only)**	**No open season.**
...		
Unit 13		
RESIDENT HUNTERS: 1 bull by **community harvest permit only; up to xx bulls may be taken** [TIER II SUBSISTENCE HUNTING PERMIT; UP TO 150 PERMITS BE ISSUED; MAY BE ISSUED;] or	**Aug. 10 - Sept. 20** [AUG. 15 - AUG. 31] (Subsistence hunt only)	
1 bull with spike-fork antlers or 50-inch antlers or antlers with 4 or more brow tines on one side; by community harvest permit only; or	**Aug. 10 - Sept. 20 (Subsistence hunt only)**	

1 bull with spike-fork antlers or 50-inch antlers or antlers with 4 or more brow tines on one side; or	Sept. 1 - Sept. 20 (Subsistence hunt only)	
1 bull, by drawing permit only, up to 200 permits may be issued	**Sept 1 – Sept 20 (General hunt only)**	
NONRESIDENT HUNTERS:		
1 bull with50-inch antlers or antlers with 4 or more brow tines on one side by drawing permit only; up to 150 permits may be issued		**Sept 1 – Sept 20**
Unit 20(A), the drainages on the south side of Yanert Fork and glacier		
RESIDENT HUNTERS:		
1 bull by community harvest permit only; up to xx bulls may be taken or	**Aug. 10 - Sept. 20 (Subsistence hunt only)**	
1 bull with spike-fork antlers or 50-inch antlers or antlers with 4 or more brow tines on one side; or by community harvest permit only; or	**Aug. 10 - Sept. 20 (Subsistence hunt only)**	
1 bull with spike-fork antlers or 50-inch antlers or antlers with 4 or more brow tines on one side; or	Sept. 1 - Sept. 25 (General hunt only)	

...

5 AAC 92.072. COMMUNITY SUBSISTENCE HARVEST HUNT AREA AND PERMIT CONDITIONS. (a) The commissioner or the commissioner's designee may, under this section and 5 AAC 92.052, issue community - based subsistence harvest permit and harvest reports for big game species where the board has established a community harvest hunt area under (b) of this section and 5 AAC 92.074.

(b) The board will consider proposals to establish community harvest hunt areas during regularly scheduled meetings to consider seasons and bag limits for affected species in a hunt area. Information considered by the board in evaluating the proposed action will include:

(1) a geographic description of the hunt area;

(2) the sustainable harvest and current subsistence regulations and findings for the big game population to be harvested;

(3) a custom of community - based harvest and sharing of the wildlife resources harvested in the hunt area; and

(4) other characteristics of harvest practices in the hunt area, including characteristics of the customary and traditional pattern of use found under 5 AAC 99.010(b).

(c) Where the board has established a community harvest hunt area for a big game population, residents may elect to participate in a community harvest permit hunt in accordance with the following conditions:

(1) a hunt administrator representing a group of residents may apply to the department for a community harvest permit by identifying the community harvest hunt area and the species to be hunted, and by requesting community harvest reports sufficient to supply the estimated number of individuals who will subscribe to the community harvest permit; the hunt administrator:

(A) must record and maintain a record of the names of residents subscribing to the community harvest permit and the residents hunting license number, permanent hunting identification card number, or birth date for residents under the age of 16;

(B) must issue harvest reports to hunters who have subscribed to the community harvest permit, but may not issue more individual harvest reports than the sum of the individual bag limits of the number of the residents who have subscribed to the permit;

(C) must request additional harvest reports for a community harvest permit from the department during a hunting season if the number of people subscribing to the hunt exceeds the original estimate.

(D) must collect validated harvest reports from hunters following the take of individual game animals, record harvest information for individual animals taken, and collect biological samples or other information as required by the department for management;

(E) must provide the department with harvest information within a specified period of time when requested, and a final report of all game taken under the community harvest permit within 15 days of the close of the hunting season **or as directed in the permit**; and

(F) must, if the community harvest hunt area is under a Tier II permit requirement for the species to be hunted, have received a Tier II permit for that area, species, and regulatory year;

(G) must make efforts to ensure that the applicable customary and traditional use pattern described by the Board of Game, if any, is observed by subscribers including, but not limited to, meat sharing. The applicable Board of Game finding will be identified on the permit.

(2) a resident who elects to subscribe to a community harvest permit:

(A) may not hold a harvest ticket or other state hunt permit for the same species where the bag limit is the same or for fewer animals during the same regulatory year, however a person may hold harvest tickets or permits for same - species hunts in areas with a larger bag limit following the close of the season for the community harvest permit;

(B) may not subscribe to more than one community harvest permit for a species during a regulatory year;

(C) must have in possession when hunting and taking game a community harvest report issued by the hunt administrator for each animal taken;

(D) must validate a community harvest report immediately upon taking an animal; and

(E) must report harvest and surrender validated harvest reports to the hunt administrator within 5 days, or sooner if required by the department, of taking an animal and transporting it to the place of final processing for preparation for human use and provide the hunt administrator with information and biological samples required under terms of the permit.

(d) Seasons for community harvest permits will be the same as those established for other subsistence harvests for that species in the geographic area included in a community harvest hunt area, **unless separate community harvest hunt seasons are established.** The total bag limit for a community harvest permit will be equal to the sum of the individual bag limits established for other subsistence harvests for that species in the hunt area. Seasons and bag limits may vary within a hunt area according to established subsistence regulations for different game management units or other geographic delineations in a hunt area.

(e) Establishment of a community harvest hunt area will not constrain nonsubscribing residents from participating in subsistence harvest activities for a species in that hunt area using individual harvest tickets or other state permits authorized by regulation, nor will it require any resident eligible to hunt under existing subsistence regulations to subscribe to a community harvest permit.

(f) The department may disapprove an application for a community subsistence harvest permit from a hunt administrator who has previously failed to comply with requirements in (c)(1) of this subsection.

(g) a person may not give or receive a fee for the taking of game or receipt of meat pursuant to a community subsistence harvest permit.

5 AAC 92.074. COMMUNITY HARVEST HUNT AREAS. (a) The commissioner may issue community subsistence harvest permits for designated big game species in the area specified in this section:

(d) Gulkana, Cantwell, Chistochina, Gakona, Mentasta, Tazlina, Chitina, and Kluti Kaah Community Harvest Area for moose and caribou: Includes all of **Units 11 and 13, that portion of Unit 20A within the southern Yanert River drainage, and that portion of Unit 12 south and west of the Little Tok River** [UNIT 13].

5 AAC 99.025. Customary and traditional uses of game populations.

The Board of Game has examined whether the game populations in the units set out in the following table, excluding those units or portions of those units within nonsubsistence areas

established by the Joint Board of Fisheries and Game (5 AAC 99.015), are customarily and traditionally taken or used for subsistence and make the following findings:

SPECIES & UNIT	FINDING	AMOUNT REASONABLY NECESSARY FOR SUBSISTENCE USES
(4) Caribou		
Unit 11 (Mentasta herd)	positive	
Units 12 and 13 (Nelchina herd)	positive [	**600-1000** 100% ALLOWABLE HARVEST]
(8) Moose		
Unit 13	positive	600

(b)(1) "amount reasonably necessary for subsistence uses" includes the total amount of animals from a population that must be available for subsistence hunting in order to provide a reasonable opportunity for subsistence uses, under state and federal subsistence hunting regulations, where both exist.

(2) "reasonable opportunity" is defined in AS 16.05.258(f) and, in assessing whether a reasonable opportunity for subsistence uses exists the Board of Game will, as it deems appropriate, attempt to integrate opportunities offered under state and federal regulations, where both exists.

Additional Information Supporting Proposal #70:
GMU 13B Ptarmigan Season Reduction

William Taylor

Background

Ptarmigan populations cycle in an approximate 9 to 10-year 'natural' cycle with a ≥ 5 fold increase from low to peak densities. Historical data indicate that peaks occurred in 1962, 1968-69, 1977-79, 1988-89 and 1999-00. Lows in the cycle were observed in 1965, 1974-76, 1983-86, 1993-96 and 2002-03.

Willow Ptarmigan – Central Alaska Range

In 2004 willow ptarmigan numbers began to gradually increase after bottoming out in 2003. Based on historical data numbers were expected to increase annually with another peak coming this year or next. However, in 2006 severe weather in June resulted in extremely poor brood survival. The harvest data from that fall/winter yielded only 25% juveniles (n = 107), the lowest recorded in 15 years of data collection. This resulted in a reversal of the increasing population trend. Reproduction and/or chick survival in 2007 and 2008 were also mediocre to poor with the percent juveniles at 44 and 41, respectively. In a good year the fall/winter population will contain $\geq$ 60% juveniles. Therefore, instead of approaching a 5 fold increase in density this spring, count data only showed about a 2 fold increase over the 2003 low.

As a comparison, counts were also conducted in the spring of 2008 in 2 areas in Chugach State Park (Unit 14C), which did not experience the severe weather and is closed to ptarmigan hunting. Converting the count data to density estimates, the territorial male willow ptarmigan densities observed in Units 13B & E ranged from approximately 1.5 to 5.5/mi^2. The equivalent density of willow ptarmigan at both sites in Unit 14C was 12.5/mi^2. From 1957 through 1964 – a period of very high ptarmigan numbers – Weeden reported densities of male willow ptarmigan ranging from 50 to 200/mi^2 in Chilkat Pass.

Other researchers tracking willow ptarmigan cycles have reported similar findings. C. McIntyre's population index on non-hunted willow ptarmigan in Denali National Park closely parallels the territorial male count data on willow ptarmigan from the heavily hunted populations in Units 13B & E from 1997 to the present. D. Mossop, Yukon College Northern Research Institute, recently summarized his findings. From 1950 to the present annual territorial willow ptarmigan counts have been conducted at 2 to 7 study plots across the Yukon. These count data indicate a broad 10-year synchrony from 1950 through 2000. Since then regular cycling of abundance has been disrupted and populations appear to be declining. Mossop speculates climate change disruption to weather patterns may be responsible.

Nick Steen, retired ADF&G biologist, and Don Horrell, Cooper Basin F&G Adv Com, have long term experience with hunting and observing ptarmigan in remote, lightly hunted portions of Unit 13. Steen's experience is in the northwestern portion of Unit 13A (Tsisi, Kosina and Gilbert Creeks and Clarence Lake area) and Horrell's is in southcentral Unit 13C (Ahtell, Indian and Granite Creek drainages). Both of them indicate an overall gradual decline in ptarmigan populations over the last 25 to 30 years.

Bob Tobey and I believe there has been a steady decline in ptarmigan numbers in portions of Unit 13 since the early 1980's, with the most dramatic declines through Isabel Pass in Unit 13B. Several other individuals with long term ptarmigan hunting experience in Unit 13B and a portion of 20D agree with this assessment.

Rock Ptarmigan – Central Alaska Range

Rock ptarmigan densities in Unit 13B were quite low in the mid-1990's and only increased slightly to a very low peak in 1999, then quickly declined to extremely low densities since then. Territorial male counts using a 'becking' call tape at 4 sites in Unit 13B in 2007 yielded only 2 males – compared to 24 in 1999 – and none were found in 2008 with more extensive surveys. On Donnelly Dome in Unit 20D one male was observed during a limited search in 2007. In 2008 no rock ptarmigan were found with a more extensive search effort. In addition, ptarmigan hunters interviewed this past winter, which hunted in northern Unit 13 or 20D, did not report killing or observing any rock ptarmigan, and none of the carcasses examined from these areas were rock ptarmigan. C. McIntyre has no quantitative data on rock ptarmigan in Denali, however, excluding the effects of the natural cycle, has not observed any trend in the population over the last 20 years.

Conclusions and Recommendations

Excluding the effects of the natural cycle, it is obvious that rock ptarmigan have significantly declined in Unit 13B and willow ptarmigan appear to be declining in northern Unit 13 also. So what is causing these declines at a time when the populations should be increasing or at a peak? Extreme weather obviously contributed to a decline in 2006. Predation levels may be another major factor. Snowshoe hare densities in most of the southern Interior have been quite high since 2006, which in turn has supported higher levels of predators: including goshawks, great horned owls, gyrfalcons, golden eagles, coyotes and lynx. Gyrfalcons and golden eagles (seasonally) are the primary predators on ptarmigan.

We know ptarmigan numbers have dramatically declined in Hatcher Pass (Unit 14A) and on Caribou Hills (Unit 15C) following exponentially increasing winter recreational use of these areas, especially snowmobile users. A similar change in winter recreational use is happening in Units 13A, B and E and portions of 20D.

Winter ptarmigan hunting mortality was not a problem in the 1960's when the number of hunters was low, the access to most of the wintering habitats was very limited,

snowmobile use was limited by poor range and reliability, and urban hunters had numerous opportunities for hunting big game within the road system. All of these factors have changed dramatically, especially the improved technology and extensive use of snowmobiles, which has opened the access to almost all the ptarmigan winter habitat in the central Alaska Range.

The apparent long-term declining trends in lightly hunted areas as well as the more heavily hunted zones in Unit 13 indicate hunting may not be the most important factor in the decline. However, numerous references from peer-reviewed publications on upland birds (including grouse and ptarmigan) conclude that winter hunting mortality is additive. Therefore, regardless of the cause(s) of the decline, it would be negligent not to address the winter season. Proposal #70 would reduce the season in Unit 13B where the most significant decline in rock ptarmigan has occurred. This change would also provide ADF&G biologists with the opportunity to compare spring willow ptarmigan counts in Unit 13B with those done in Unit 13E, where winter hunting will continue.