

RC 3



**Board of Game
Statewide Meeting
Anchorage, AK**

January 13-18, 2012
master copy

A	ORAL REPORTS
B	FALCONRY, OTHER PERMITS
C	SALE OF BIG GAME, BIG GAME TROPHIES
D	INTENSIVE MANAGEMENT
E	DISCRETIONARY PERMIT AUTHORITY
F	ARCHERY, CROSSBOW REGULATIONS
G	PERMITS, PERMIT ALLOCATIONS
H	STATEWIDE BIG GAME SEASONS
I	STATEWIDE SHEEP SEASONS AND PERMIT ALLOCATIONS
J	STATEWIDE OTHER GAME SEASONS
K	METHODS AND MEANS
L	SEALING AND BAG LIMITS
M	EVIDENCE OF SEX, TRANSFER & POSSESSION
N	BLACK BEAR BAITING
O	TRAPPING
P	MISCELLANEOUS
Q	
R	
S	
T	
U	
V	
W	
X	
Y	
Z	



PRELIMINARY RECOMMENDATIONS

BOARD OF GAME PROPOSALS

January 2012-Statewide

Alaska Department of Fish & Game

Division of Wildlife Conservation and Division of Subsistence

The Department's recommendations are based on analysis of the proposals with available information. These recommendations may change after further analysis based on public comment or additional information.

DRAFT FALCONRY ANALYSIS AND RECOMMENDATIONS

Readers of the three falconry proposals are reminded that most of the details are contained in the Alaska Falconry Manual. The manual is currently adopted into regulation by reference.

PROPOSAL 38

EFFECT OF THE PROPOSAL: Modify falconry regulations to comply with the US Fish and Wildlife Service's federal framework leading to federal certification by 1 January 2014. Eliminate joint state-federal permit for a state only permit. Eliminate the capture permit system for taking peregrine falcons in some locations. Require a valid, current Alaska hunting license to obtain a falconry permit.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: Based on the actions taken on Proposal 39. The only differences are 1) the species list that would be allowed for falconry, and 2) certain import and export requirements. The list of species allowed for falconry in this proposal is largely that list allowed for under the federal framework. As such, the list includes a number of species that are 1) not found in Alaska (e.g., alpomado falcon), 2) species that are virtually never used by falconers to pursue small game quarry (e.g., northern pygmy owl, osprey, turkey vulture), 3) are only accidental to Alaska, typically in the Aleutians (e.g., sea eagles, Eurasian kestrel), or 4) have other legal constraints on their acquisition (bald eagle).

PROPOSAL 39

EFFECT OF THE PROPOSAL: Modify falconry regulations to comply with the US Fish and Wildlife Service's federal framework leading to federal certification by 1 January 2014. Eliminate joint state-federal permit for a state only permit. Eliminate the capture permit system for taking peregrine falcons in some locations. Require a valid, current Alaska hunting license to obtain a falconry permit.

DEPARTMENT RECOMMENDATION: **Adopt**

RATIONALE: Department proposal, see proposal book.

PROPOSAL 40

EFFECT OF THE PROPOSAL: This proposal would allow a nonresident harvest of birds used from falconry from Alaska.

DEPARTMENT RECOMMENDATION: **No Recommendation**

RATIONALE: This is an allocation issue among resident and nonresident falconers. Currently, take of falconry birds by nonresidents is not permitted under Alaska Falconry regulations.

Alaska currently has about 45 licensed falconers and about 25 are currently active and have birds that they possess and fly in pursuit of quarry. Annually 20 or fewer birds are taken from the wild by Alaska falconers. Gyrfalcons, peregrine falcons and northern goshawks are the most commonly taken birds.

The proposal requests that 3 gyrfalcons, 3 Peale's peregrines, 2 *anatum* peregrines, 2 tundra peregrines, 3 merlins, 3 goshawks, 3 red-tailed hawks, and 3 three sharp-shinned hawks be allowed for capture by nonresident falconers. The proponents request some additional requirements, including having some areas closed to nonresident take.

The department concurs with the proponents that this harvest level would not jeopardize the sustained yield of these raptor species in Alaska. For example, the department estimates that there are 400 – 700 pairs of gyrfalcons occupying territories in Alaska. Nestling harvest by nonresidents in addition to resident harvest does not have a measureable impact on the population. Similarly, Alaska has well over 1,000 pairs of nesting peregrine falcons and a small harvest of nestlings would not be measureable at the population level. In fact, Alaska-born peregrine falcons can be harvested under other state programs as they migrate during the fall to Central and South America.

Gyrfalcons would likely be the raptor species under the highest demand for falconry take. As the largest falcon in the world, they are highly sought for falconry and captive breeding. Falconers and especially raptor breeders in the United States, Europe and some Middle Eastern countries may find the ability to take wild gyrfalcons highly desirable. In fact, recently a gyrfalcon banded on the Yukon Kuskokwim Delta was trapped in the Russian Federation and trafficked across Asia to the United Arab Emirates.

The Department could design a nonresident falconry take and we would use the big game drawing hunt system to manage the activity based on quotas set by the Board. If implemented, the Board may wish to establish areas closed to nonresident take. The State of Alaska has no fee system in place for nonresident falconry tags to offset the cost of managing the harvest program.

PROPOSAL 41

EFFECT OF THE PROPOSAL: Review the intended scope of this permit and amend as needed.

DEPARTMENT RECOMMENDATION: **No Recommendation**

RATIONALE: Department proposal; see issue statement.

PROPOSAL 42

EFFECT OF THE PROPOSAL: Modify the current department authority for issuing public safety permits.

DEPARTMENT RECOMMENDATION: **Amend and Adopt**

RATIONALE: Department proposal; see issue statement. The proposal will need to be amended to include a list of problem areas where these permits will be issued.

PROPOSAL 43

EFFECT OF THE PROPOSAL: Review and modify nuisance beaver permits to allow beaver flow devices.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: The department agrees that beaver flow devices can be effective in addressing problems with beavers flooding property, however, the recommended use of these devices is already taking place under the present regulation. Department biologists routinely work with the Department of Transportation, the US Forest Service, other agencies , and private individuals toward addressing beaver flooding problems by looking into all options of alleviating the concern, including the use of beaver flow devices. This is especially true in those situations where culverts are plugged continuously and removal of beavers has not proven to be a successful solution. In some of these cases department staff have recommended these devices as a long term solution, and in some cases they have proven successful. However, in many cases, the quick removal of a few beavers through trapping takes care of the concern. In these cases the cost and effort of installing a flow device is far beyond the scope of the problem.

In the website referenced in the proposal, the monetary cost of programs needed to trap problem beavers is discussed in detail and is shown to be quite substantial. In Alaska however, this program has little cost associated with it. Trappers are generally excited to have an opportunity to trap beavers through this program, which they do at no charge to the department. The end result is that a few trappers gain trapping opportunity and the problem is alleviated in a quick and efficient manner.

PROPOSAL 44

EFFECT OF THE PROPOSAL: Add a new discretionary authority that would allow the department to define specific seasons and methods and means of hunting for recipients of Governor's tags.

DEPARTMENT RECOMMENDATION: **Adopt**

RATIONALE: Department proposal; see issue statement.

PROPOSAL 45

EFFECT OF THE PROPOSAL: Align state regulations on subsistence bartering with statutory authority.

DEPARTMENT RECOMMENDATION: Adopt

RATIONALE: Department proposal; see issue statement.

PROPOSAL 46

EFFECT OF THE PROPOSAL: Allow the sale of big game trophies.

DEPARTMENT RECOMMENDATION: No Recommendation

RATIONALE: In regulation, a "trophy" means a mount of a big game animal, including the skin of the head (cape) or the entire skin, in a lifelike representation of the animal, including a lifelike representation made from any part of a big game animal; "trophy" also includes a "European mount" in which the horns or antlers and the skull or a portion of the skull are mounted for display.

Sale of big game trophies, as currently defined, and with subsistence trophy nullification authority remaining with the department, would not create a conservation concern through the harvest of specific animals. The Board may wish to consider restricting sales to prevent large-scale commercialization or negatively affecting reasonable opportunity if trophy nullification in subsistence hunts is not delegated to the department. This might include allowing a one-time sale by the original hunter. Alaska contains more species of trophy big game and a greater opportunity to harvest large animals than all other states in the USA. A qualitative survey of selected Western states' fish and game agencies suggest that most states allow the sale of trophies harvested under non-subsistence regulations. Yet, Alaska is in a different 'league' than -many of these states with regard to trophy-sized native big game and the protection of subsistence hunting under Alaska state law. The Board should consider attendant effects of allowing the sale of trophies, including continuing to provide for reasonable opportunity for subsistence and the possibility for invoking the federal commerce clause, since discriminating between residents and nonresidents might restrict access to a potential source of income.

PROPOSAL 47

EFFECT OF THE PROPOSAL: Allow the sale of trophies acquired through legal action such as divorces.

DEPARTMENT RECOMMENDATION: Take No Action

RATIONALE: See rationale for Proposal 46.

PROPOSAL 48

EFFECT OF THE PROPOSAL: Prohibit the sale of bear parts harvested on National Park Service lands.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: The proposal specifically asks for a the prohibition on the sale of black bear meat, if the black bear was harvested on National Park Service managed lands.

During the Board of Game meeting in January 2010, the Board adopted a dual classification for black bears. They are now classified as big game, subject to taking with a hunting license, and a furbearer, subject to taking under a trapping license. Different regulations apply to each classification, including different seasons and bag limits.

At this time, the Board has not adopted any black bear trapping regulations, so no black bear trapping is currently allowed in the state. The use of snares is allowed under specific control permits, but that is not general trapping.

The sale of big game meat is currently prohibited, so the sale of the meat of a black bear taken under hunting regulations with a hunting license is not allowed.

The sale of furbearer meat is not prohibited, so the meat of a black bear taken under trapping regulations with a trapping license would be allowed. Because there are no seasons at this time, no black bears can be taken under trapping and no black bear meat is allowed to be sold.

PROPOSAL 49

EFFECT OF THE PROPOSAL: Provide authority to the Alaska Wildlife Troopers (AWT) to inspect taxidermy businesses.

DEPARTMENT RECOMMENDATION: **Adopt**

RATIONALE: Illegal harvest and transport of game poses conservation concerns, inside and outside of Alaska. An additional tool allowing AWT to inspect taxidermists would help prevent such violations.

PROPOSAL 50

EFFECT OF THE PROPOSAL: Review and potentially repeal discretionary hunt conditions and procedures applied to permit hunts across the state.

DEPARTMENT RECOMMENDATION: **Amend and Adopt**

RATIONALE: The board has requested a review of the discretionary authorities the department can apply to permit hunts. These discretionary authorities have developed over many years, and

in some cases, the board has adopted regulations to require the same things on a statewide basis, such as a minimum age. The Board should consider amending and adopting to repeal the redundant regulations.

PROPOSAL 51

EFFECT OF THE PROPOSAL: Allow the Department of Fish and Game to require the latitude and longitude of kill locations on a harvest report for drawing and registration hunts.

DEPARTMENT RECOMMENDATION: Adopt

RATIONALE: Department proposal; see issue statement.

PROPOSAL 52

EFFECT OF THE PROPOSAL: Clarifies department discretionary authority to require antler locking tags for certain permit hunts.

DEPARTMENT RECOMMENDATION: Amend and Adopt

RATIONALE: Department proposal; see issue statement. In addition to the original proposal which added discretionary authority for requiring permittees to attach a locking tag to an antler at the kill site, the department recommends amending this proposal to add discretionary authority in permit hunts to require that antlers remain visible during transport from the field, thereby incorporating intent of proposal 209, as follows:

92.052. Discretionary permit hunt conditions and procedures.

...

(25) a permittee shall attach a locking tag to an antler at the kill site;

(26) antlers must remain visible during transport from the field;

...

The recommendation to amend proposal 52 is in response to proposal 209 submitted for Unit 20A by the Middle Nenana River Advisory Committee for consideration during the spring 2012 Board meeting. If passed, this proposal would not only add discretionary authority in permit hunts to require attaching an antler locking tag at the kill site, but it would also require keeping the antlers visible during transport from the field. The department supports proposal 209 and recommends the provision for antlers remaining visible be considered in deliberation of proposal 52. Resident antler tags would assist in the enforcement of the current management strategy in Unit 20A. Antler tags would be issued to resident hunters that are awarded "any bull" drawing permits in this unit. They would be required to attach the tags to their antlers, which differentiate those antlers from the antlers of moose harvested under a general harvest ticket (i.e., spike-

fork/50-inch restriction). This regulation should reduce the illegal take of sublegal bulls during the concurrent general season SF/50 hunt by making it easier for other hunters to identify and report illegally taken bulls. This regulation also may increase support for the current management strategy in Unit 20A that includes a combination of antler restricted, drawing and registration hunts.

PROPOSAL 53

EFFECT OF THE PROPOSAL: Establish statewide standards for crossbow equipment used to take big game.

DEPARTMENT RECOMMENDATION: Amend and Adopt

RATIONALE: Department proposal; see issue statement.

The department recommends an amendment to the proposal to clarify a legal scope and other devices that may be attached to the crossbow.

(E) Scopes on a crossbow shall not provide any magnification or project light.

(i) No electronic devices may be attached to the crossbow, except a lighted reticule scope or a non illuminated camera.

Most modern crossbows are now sold with attached hunting sights. Crossbows are still considered a short range method of take, similar to archery, and crossbow users should not attempt long shots with magnified scopes.

We are basing this recommendation on the premise that crossbows will not be considered archery equipment or allowed in archery only hunts.

PROPOSAL 54

EFFECT OF THE PROPOSAL: Expand the definition of bow to include crossbows.

DEPARTMENT RECOMMENDATION: Do not Adopt

RATIONALE: The majority of the concerns raised by this proposal attempt to address the needs of handicapped individuals, Wounded Warriors, and elderly hunters. However, to reclassify crossbows as archery equipment is too controversial and is not needed to address that issue. The "Methods and Means Exemption" form currently available through the Department and allowed under

5 AAC 92.104, provides crossbow opportunities for any individual that meets one of the qualifying disabilities listed. One of the most common exemptions listed on the form is "to use a crossbow or draw-lock in an archery-only hunt."

PROPOSAL 55

EFFECT OF THE PROPOSAL: Develop a specific definition of what constitutes a crossbow and the minimum equipment requirements for crossbows used to hunt big game.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See proposal 53.

PROPOSAL 56

EFFECT OF THE PROPOSAL: Adopt crossbow standards and allow disabled hunters to use crossbows in archery hunts

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See proposal 53 for crossbow standards. In addition, the department currently issues methods and means exemption permits to disabled hunters under 5 AAC 92.104. These permits allow the use of crossbows in areas restricted to archery hunting. Hunters who receive this exemption must still complete the State's IBEP course, using the "Today's Crossbow Hunter" manual published by the National Bowhunters Education Foundation, (NBEF). The required shooting proficiency is shot with the hunter's crossbow.

PROPOSAL 57

EFFECT OF THE PROPOSAL: Allow archers to use mechanical/retractable broadheads for all big game.

DEPARTMENT RECOMMENDATION: **No Recommendation**

RATIONALE: The current regulation permits use of arrows with mechanical, expanding broadheads for deer, caribou, black bear, wolf, wolverine, and Dall sheep. Rigid, fixed broadheads are required on all other big game animals. Arrows must be 20 inches in length to prohibit the use of short "bolts," which may not have sufficient penetration on big game, and which extends the range of bows. Broadhead and arrow combined must weigh 300 grains. Lighter weight arrows and broadheads increase bow range and provide less penetration on large game. The heavier weight of pull bows for larger species of big game to helps insure adequate penetration of arrows into and through the vital organs.

Modern technology has provided today's bowhunter with many choices. A number of Lower 48 states allow mechanical, expanding broadheads for big game comparable to ours, e.g., elk and bison. If the Board chooses to amend the existing regulation to allow the use of mechanical expanding broadheads for all big game, they might want to consider establishing minimum standards to prevent the use of inferior products.

PROPOSAL 58

EFFECT OF THE PROPOSAL: Allow archers to use mechanical/retractable broadheads for all big game.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See proposal 57.

PROPOSAL 59

EFFECT OF THE PROPOSAL: Require the use of a lighted nock on the arrow for moose and bear hunting.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: The lighted nock is currently a legal piece of equipment for bowhunters and does provide the shooter a good visual on shot placement, especially during low light conditions. But to require it for all bowhunters under all conditions is not reasonable and would be expensive. Each nock can cost \$20, and if required, would force the bowhunter to have every arrow in his possession fitted with a lighted nock. That could be an additional \$100 for every archer. The current regulation allows each bowhunter to choose and not be burdened with another costly regulation.

PROPOSAL 60

EFFECT OF THE PROPOSAL: Clarify legal type of compound bow.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: The current definition of a bow in regulation does apply to the latest and most advanced bows on the market. The bows on the market today do have more angle and preload built into the limbs respective to bows from the past, and the angle and preload does reduce the amount of bend, but all bows use limbs to store energy. The wheels and cams compound the energy that is stored by the bow' limbs.

PROPOSAL 61

EFFECT OF THE PROPOSAL: Revert to past definition of legal compound bow. Bow must shoot 1oz arrows with a distance of 175 yards.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 60.

PROPOSAL 62

EFFECT OF THE PROPOSAL: Increase the number of moose drawing permits a resident may apply for.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 63.

PROPOSAL 63

EFFECT OF THE PROPOSAL: Increase the number of drawing permits for each species that a person may apply for.

DEPARTMENT RECOMMENDATION: **Adopt**

RATIONALE: Department proposal; see issue statement.

PROPOSAL 64

EFFECT OF THE PROPOSAL: Limit drawing permit winners to only two permits per year.

DEPARTMENT RECOMMENDATION: **No Recommendation**

RATIONALE: This is an allocation issue. The department sets the number of permits available based on available harvest. The use of a random drawing process for each hunt allows some hunters to win multiple permits. The proposal suggests that hunters that win multiple permits may not be able to utilize all of them, due to time or economic constraints. Establishing a limit on the number of permits each individual is awarded could potentially allow additional hunters to win a permit.

If this system is adopted, the drawing application will require hunters to prioritize their requested permit hunts.

PROPOSAL 65

EFFECT OF THE PROPOSAL: Limit drawing permit winners to only two permits per year.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See proposal 64.

PROPOSAL 66

EFFECT OF THE PROPOSAL: Allow a maximum of 10 percent for the Alaska drawing permits to be awarded to nonresident hunters.

DEPARTMENT RECOMMENDATION: **No Recommendation**

RATIONALE: This is an allocation issue. This proposal that would significantly change nonresident big game hunting opportunities in Alaska and would have serious implications for the big game guiding industry. This would require the Department to establish nonresident harvest allocations with the Board. In addition, AS 16.05.255(d) states that only moose, deer, elk and caribou are species for which the Board is required to provide a preference for residents over nonresidents, so that residents can harvest these species for personal or family consumption.

PROPOSAL 67

EFFECT OF THE PROPOSAL: Limit drawing permits to 10 percent for nonresidents, no nonresident permits if fewer than 10 permits available.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See proposal 66.

PROPOSAL 68

EFFECT OF THE PROPOSAL: Allow a maximum of 10 percent of Alaska drawing permits to be awarded to nonresident hunters

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 66.

PROPOSAL 69

EFFECT OF THE PROPOSAL: Establish a bonus/preference point system for drawing hunts.

DEPARTMENT RECOMMENDATION: **No Recommendation**

RATIONALE: This is an allocation issue, although the administrative cost to the department to develop and maintain a bonus/preference system would be significant. The Board has considered proposals for various systems since 2006. In March 2011 the Board voted not to issue drawing permits using bonus/preference systems. The general tradeoff in implementing these types of systems is that they provide some level of advantage for those that are persistent in applying for permits, but serve as a disincentive for youth and new hunters.

PROPOSAL 70

EFFECT OF THE PROPOSAL: Allow nonresident deployed military personnel to defer drawing permits.

DEPARTMENT RECOMMENDATION: **No Recommendation**

RATIONALE: The current regulation allows resident military personnel that are prevented from using a drawing permit to be issued a “transferred” permit the following year. The regulation was adopted at the November 2006 Board meeting. The board considered including nonresident military personnel and chose to restrict the regulation to resident military personnel.

Note: Proposals 71 – 76 request changes to 5 AAC Chapter 85, Seasons and bag limits. Considerations of seasons and bag limits are the primary focus of regional Board of Game meetings and not a statewide regulations meeting. In order to evaluate the merits of these proposals on specific hunts, the Department recommends the Board **Take No Action** on these proposals and refer them to appropriate regional meetings. Similar or duplicate proposals are also included in the Region III agenda. The Department has provided some general evaluation of these proposals in the event the Board chooses to consider the proposals at this meeting.

PROPOSAL 71

EFFECT OF THE PROPOSAL: Open resident big game seasons one week before nonresident seasons in all intensive management areas.

DEPARTMENT RECOMMENDATION: **No Recommendation**

RATIONALE: This is an allocation issue between residents and nonresidents. Intensive management areas have been adopted for caribou, deer and moose across most of the state, as listed in 5 AAC 92.108.

AS16.05.255(d) states that “regulations adopted.... must provide that, consistent with the provisions of AS 16.05.258, the taking of moose, deer, elk, and caribou by residents for personal or family consumption has preference over taking by nonresidents.”

The proposal asks that all big game seasons start one week earlier for residents in all the areas currently listed with positive intensive management findings for moose, deer or caribou. All big game species would include black and brown bear, bison, elk, mountain goat, muskox, sheep, wolf and wolverine, not just the current species included under intensive management findings.

PROPOSAL 72

EFFECT OF THE PROPOSAL: Open big game general seasons seven days earlier for residents, five days earlier in drawing hunts.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 71.

PROPOSAL 73

EFFECT OF THE PROPOSAL: Open all big game seasons one week earlier for residents than nonresidents.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 71.

PROPOSAL 74

EFFECT OF THE PROPOSAL: Open all big game seasons one week earlier for residents than nonresidents.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 71.

PROPOSAL 75

EFFECT OF THE PROPOSAL: Open early youth hunt for all big game, ten days before other seasons; require hunter education.

DEPARTMENT RECOMMENDATION: **No Recommendation**

RATIONALE: This proposal asks that youth hunters with hunter education be allowed to hunt big game statewide 10 days before other hunters, followed by an opening for all Alaska residents 10 days earlier than the nonresident season. In addition, the proposal asks for a preference point system for Alaska residents in permit hunts.

Early seasons for youth hunters and Alaska residents is an allocation issue, so the department has no recommendation. This is a broad proposal affecting all big game seasons statewide, and would expand the hunter education requirement to all Units, not just the current Units 7, 13, 14, 15, and 20, for all youth that wished to participate in the early season. Unless the department were able to significantly expand hunter education programs, youth living in communities off the road system would be precluded from participating in these early hunts, which would also take place prior to seasons established to provide for customary and traditional subsistence uses.

Allowing youth hunts to take place in addition to and in advance of hunting of populations with Tier II hunts would likely be in violation of AS 16.05.258(b) (the state subsistence statute).

See proposal 71 for comments on an early season for Alaska residents, and proposal 69 for comments on preference points.

PROPOSAL 76

EFFECT OF THE PROPOSAL: Open early youth hunt (10-17 years) for all big game statewide and require accompanying adult to forfeit bag limit.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 75. In several existing youth hunts, the bag limit counts against both the youth hunter and the accompanying adult hunter.

PROPOSAL 77

EFFECT OF THE PROPOSAL: Require hunters to use only one type of method; either firearm or bow; require a tag.

DEPARTMENT RECOMMENDATION: **No Recommendation**

RATIONALE: This is an allocation issue based on preferred hunting methods. The proposal seems to request that hunters must choose between one type of hunt or the other, and would not be allowed to hunt in both.

The proposal requests that a tag be required, and that the tag indicate hunt method. This would be a departure from our current general season harvest tickets, which allow all types of hunting, so some type of tag requirement would have to be developed.

.....

Note: Proposals 78 – 91 request changes to 5 AAC Chapter 85, Seasons and bag limits. Considerations of seasons and bag limits are the primary focus of regional Board of Game meetings and not a statewide regulations meeting. In order to evaluate the merits of these proposals on specific hunts, the Department recommends the Board **Take No Action** on these proposals and refer them to appropriate regional meetings. Similar or duplicate proposals are also included in the Region III agenda. The Department has provided some general evaluation of these proposals in the event the Board chooses to consider the proposals at this meeting.

PROPOSAL 78

EFFECT OF THE PROPOSAL: Open resident sheep seasons seven days earlier than nonresident seasons.

DEPARTMENT RECOMMENDATION: **No Recommendation**

RATIONALE: This is an allocation issue. This proposal appears to address only general season hunts with season dates of August 10–September 20. Providing a longer resident general season is used to separate resident and nonresident hunters in many areas, and this proposal might alleviate some conflicts between users. It is not clear whether this proposal is meant to also apply to drawing hunts. Nevertheless, it is less likely to be needed in drawing hunts where the number of hunters is controlled by the number of permits.

Subsistence sheep hunts typically have more liberal seasons and bag limits than those proposed, which suggests the proponent is concerned specifically with general sheep hunting seasons. If the proposed season was adopted for subsistence hunts, the board would need to determine whether the reduced season would still provide a reasonable opportunity for subsistence uses.

Generally, the Board deliberates seasons and bag limits on a regional basis, where area staff can provide detailed information for deliberation. The Board may wish to consider deferring this proposal to each regional meeting in the future to allow detailed analysis in each area.

PROPOSAL 79

EFFECT OF THE PROPOSAL: Open resident sheep seasons seven days earlier than nonresident seasons.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 78.

PROPOSAL 80

EFFECT OF THE PROPOSAL: Change the nonresident sheep season and amount of permits available.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 78 and proposal 87.

PROPOSAL 81

EFFECT OF THE PROPOSAL: Open resident seasons one week before nonresident seasons for Dall sheep hunting.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 78.

PROPOSAL 82

EFFECT OF THE PROPOSAL: Open resident seasons one week before nonresident seasons for Dall sheep hunting.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 78.

PROPOSAL 83

EFFECT OF THE PROPOSAL: Begin the resident sheep seasons ten days earlier than nonresident seasons.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 78.

PROPOSAL 84

EFFECT OF THE PROPOSAL: Open resident sheep seasons five days earlier than nonresident seasons.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 78.

PROPOSAL 85

EFFECT OF THE PROPOSAL: Open resident sheep seasons five days earlier than nonresident seasons.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 78.

PROPOSAL 86

EFFECT OF THE PROPOSAL: Begin the youth hunting season for Dall sheep five days earlier than residents.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 75.

PROPOSAL 87

EFFECT OF THE PROPOSAL: Create nonresident drawing hunts for all sheep hunts and allocate a percentage of the harvest to nonresidents.

DEPARTMENT RECOMMENDATION: **No Recommendation**

RATIONALE: This is a broadly prescriptive proposal that would fundamentally change nonresident sheep hunting in Alaska. This is biologically unnecessary in some areas and would have serious implications for the big game guiding industry. This would require the board to establish nonresident harvest allocations and then establish a drawing hunt in all sheep hunting areas currently open under general season.

The board has adopted policy 2007-173-BOG, which establishes guidelines for nonresident drawing permit allocations. It states that allocations will be determined on a case by case basis and will be based on the historical data of nonresident and resident permit allocation over the past 10 years.

Also, AS 16.05.255(d) states that only moose, deer, elk and caribou are species for which the Board is required to provide a preference for residents over nonresidents, so that residents can harvest these species for personal or family consumption.

Several sheep hunts in the state have a positive customary and traditional use finding, so subsistence use by residents must be considered prior to establishing a nonresident hunt.

PROPOSAL 88

EFFECT OF THE PROPOSAL: Convert all nonresident sheep seasons to drawing permits and limit to 10 percent of total permits.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 87.

PROPOSAL 89

EFFECT OF THE PROPOSAL: Convert all sheep hunts to drawing only, 90% for residents.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 87.

PROPOSAL 90

EFFECT OF THE PROPOSAL: Allocate two percent of all sheep drawing permits to nonresidents, close nonresident season if harvestable surplus is less than 50.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 87. The board has adopted policy 2007-173-BOG, which establishes guidelines for nonresident drawing permit allocations. It states that allocations will be determined on a case by case basis and will be based on the historical data of nonresident and resident permit allocation over the past 10 years. The established policy would have to be modified if this proposal were adopted. In addition, the only sheep drawing hunts with over 50 permits available are the Tok Management Area, the Delta Controlled Use Area, and Unit 14C, West. If this proposal were adopted, all other sheep drawing hunts would be limited to residents only.

PROPOSAL 91

EFFECT OF THE PROPOSAL: Nonresident next of kin sheep permits would come out of the resident pool of permits in Units where there are a limited number of nonresident sheep permits.

DEPARTMENT RECOMMENDATION: **No Recommendation**

RATIONALE: Board policy 2007-173-BOG was adopted to address all nonresident hunting, not just the percentage of guided nonresidents. This proposal asks to further split the nonresident pool into 1) guided and 2) hunting with a resident relative. This would require allocations to each pool of nonresident hunters.

In addition, adoption of the proposal would further confuse the drawing permit application process by requiring nonresidents who are hunting with a resident relative to apply for a resident drawing hunt.

PROPOSAL 92

EFFECT OF THE PROPOSAL: Allow only the use of traps and snares for taking wolf and wolverine and prohibit the use of firearms except for dispatching trapped animals.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: This proposal would prohibit the use of firearms for taking wolves and wolverines under a trapping license, except to dispatch animals already caught in a trap or snare. Firearms are a legal method of taking for all fur animals and furbearers, except for beaver in some cases, and fox in Unit 15. This prohibition would prevent some opportunistic harvest by trappers using a firearm.

The department manages populations based on available harvest, and restricts method of take when necessary on a case-by-case basis. Separate methods of take on a statewide basis are not required for management to be effective.

PROPOSAL 93

EFFECT OF THE PROPOSAL: Allow only the use of traps and snares for taking wolf and wolverine on National Park Service lands and prohibit the use of firearms, except for dispatching trapped animals.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rationale for proposal 92.

PROPOSAL 94

EFFECT OF THE PROPOSAL: Prohibit the taking of wolf, fox, wolverine, or coyote during May, June and July on National Park Service (NPS) lands.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: There are currently no open trapping seasons anywhere in the state during the months of May, June and July for fox, coyote and wolverine. Units 9 and 10 are the only areas open for trapping of wolves during the months of May and June. Of the two areas, only Unit 9 has NPS lands.

Based on extrapolated wolf population estimates from radio-collar studies in Unit 9, approximately 300 to 500 wolves inhabit Unit 9. From this population, an average of 81 wolves (16 - 27% of the population) have been harvested annually in Unit 9 during the past 10 years. Wolf harvest on NPS lands is small, with an average of 2 wolves taken annually during the same period (average of 1 wolf taken annually in Lake Clark National Preserve, Unit 9B; 0.6 wolves annually in Katmai National Preserve, Unit 9C; and 0.4 wolves annually in Aniakchak National Preserve, Unit 9E). To date no wolves have been harvested in Unit 9 with traps during the months of April through October. Wolf harvests in Unit 9 and on National Park lands within Unit 9 are sustainable and consistent with scientific wildlife management principles that ensure the long term sustainability of the wolf populations.

PROPOSAL 95

EFFECT OF THE PROPOSAL: Open several management areas to the taking of small game by the use of falconry.

DEPARTMENT RECOMMENDATION: **No Recommendation**

RATIONALE: This is an allocation issue to a specific user group, and the department has no recommendation. Many of these management areas were created to allow continued hunting opportunity by short range methods of take such as archery, due to the proximity of residences, and highways, or heavy industrial use. Allowing falconry in these areas would not violate this intent.

The **Eagle River Management Area** allows the taking of small game by archery, shotgun, or muzzleloader with a permit, and already allows the taking of deleterious exotic wildlife by falconry.

The **Skilak Loop Wildlife Management Area** allows the taking of small game by archery only from October 1- March 1.

The **Dalton Highway Corridor Management Area** is open to the taking of small game by archery only.

The **Birchwood Management Area** is open to small game hunting with air rifle with rifled barrel, shotgun and archery in the area north and west of the Alaska Railroad.

The **Healy-Lignite Management Area** is open to the taking of small game by archery only.

The **Petersburg Management Area** is open to the taking of small game by archery only.

PROPOSAL 96

EFFECT OF THE PROPOSAL: Open areas to archery hunting, if shotguns are allowed.

DEPARTMENT RECOMMENDATION: No Recommendation

RATIONALE: This is an allocation issue to a specific user group, and the department has no recommendation. The only area where hunting is limited to shotguns only, without allowing the use of bow and arrow, is the Portage Glacier Closed Area.

If the Board chooses to adopt this proposal, the amended language would read:

5 AAC 92.510(8)(A) the Portage Glacier Closed Area in Unit 7, which consists of Portage Creek drainages between the Anchorage - Seward Railroad and Placer Creek in Bear Valley, Portage Lake, the mouth of Byron Creek, Glacier Creek and Byron Glacier, is closed to hunting; however, migratory birds and small game may be hunted with shotguns and bow and arrow from September 1 through April 30;

PROPOSAL 97

EFFECT OF THE PROPOSAL: Prohibit the use of artificial light for taking game on all lands managed by the National Park Service.

DEPARTMENT RECOMMENDATION: Do Not Adopt

RATIONALE: Currently, most uses of artificial light to take game are prohibited. The exceptions where the use of artificial light is allowed are as follows:

(C) artificial light may be used

(i) for the purpose of taking furbearers under a trapping license during an open season from November 1 – March 31 in Units 7 and 9 – 26;

- (ii) by a tracking dog handler with one leashed dog to aid in tracking and dispatching a wounded big game animal;
- (iii) to aid in tracking, recovering, and dispatching a wounded game animal without the use of a motorized vehicle;
- (iv) by a resident hunter taking black bear under customary and traditional use activities at a den site from October 15 through April 30 in Unit 19(A), that portion of the Kuskokwim River drainage within Unit 19(D) upstream from the Selatna River drainage and the Black River drainage, and in Units 21(B), 21(C), 21(D), 24, and 25(D);

Each of these exceptions was adopted by the Board in response to proposals asking that: trappers be allowed to use lights during the winter months, hunters be allowed to use them for tracking wounded animals, and subsistence hunters be allowed to use them at a black bear den site while taking black bear for customary and traditional uses.

None of the proposals adopted asked for the change in order to increase the harvest of targeted species or for overall harvest of predator populations. In general, the regulations were adopted to increase safety for hunters and trappers during very cold and dark winter months, and to allow hunters to find and dispatch a wounded animal. See rationale in proposal 108 for additional information about the use of artificial light at black bear dens.

PROPOSAL 98

EFFECT OF THE PROPOSAL: Prohibit the use of hand held electronics in taking game.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: The proposal is unclear as to specific types of hand held electronics that should be prohibited. The use of many hand held electronics, including laser sights, electronically enhanced night vision scopes, radio communications, and cellular or satellite telephones is already prohibited for taking game. The only hand held electronic device that is specifically allowed in regulation while hunting is a rangefinder.

Adopting this proposal would prohibit the use of rangefinders, which helps hunters to determine distance to an animal and aids in making an informed decision concerning ability to make a lethal shot.

PROPOSAL 99

EFFECT OF THE PROPOSAL: This proposal would make it illegal for hunters to take game the same day they were transported to the field by commercial transporters.

DEPARTMENT RECOMMENDATION: **No Recommendation**

RATIONALE: The Board considered this proposal for Regions II and IV during the meetings in March 2011 and failed it. This is already illegal for airplane based transporters.

" 5 AAC 92.085 (8) a person who has been airborne may not take or assist in taking a big game animal until after 3:00am following the day in which the flying occurred;...."

However the proposal goes beyond that to include other methods of transportation with the largest group being boat based transporters. This will eliminate the operators who provide "day trips" into the field through boat, four wheeler, snow machine or even street vehicle.

Functionally it is unclear how this would work for boat based hunting if the hunters live on board.

Since this proposal would effectively alter the allocation of resources to different users the Department has no recommendation.

PROPOSAL 100

EFFECT OF THE PROPOSAL: Allow the use of laser sight, electronically-enhanced night vision scopes, or artificial light for taking coyotes from October 1 through June 30.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: The proposal asks to remove the prohibition on several methods for taking coyotes on a statewide basis. It is unclear whether the proposers also wanted to extend seasons for coyotes, as the longest trapping season in the state is Oct. 1 – April 30, and the longest hunting season in the state is August 10 – May 25. There is currently no open season in June.

The use of artificial light is already allowed under a trapping license November 1 – March 31 in Units 7 and 9 – 26. Allowing the use of laser sights (which project a red dot on the target) and electronically-enhanced night vision scopes, for coyotes only could make enforcement difficult. Seasons for many other species are open at the same time as coyote seasons. The restrictions on the use of this equipment are intended to address ethical issues of fair chase and to control the potential for over harvest.

PROPOSAL 101

EFFECT OF THE PROPOSAL: Allow same day airborne taking of coyotes statewide.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: Taking coyote the same day you have been airborne is currently allowed if you are 300 feet from the aircraft. The distance requirement is to ensure compliance with the Federal Airborne Hunting Act.

PROPOSAL 102

EFFECT OF THE PROPOSAL: Prohibit the use of pack animals, other than horses, while hunting sheep or goat.

DEPARTMENT RECOMMENDATION: Adopt

RATIONALE: RATIONALE: As noted in the proposal, substantial die off events have occurred in several “Lower 48” wild sheep populations. Fortunately, we have not yet documented such an event here in Alaska.

The department supports this broad scale approach to reduce the risk of transmission of infectious diseases and parasites to our wild sheep and goat populations.

Extensive wildlife disease research has indeed demonstrated that contact between domestic sheep or domestic goats and wild sheep results in transmission of pneumonia to wild sheep, with consistent lethality to the wild population. The risk of disease transmission is not limited to domestic sheep or goats, as the naturally occurring pathogens including bacteria in the respiratory and GI tracts of cattle, yaks, llamas, and other ruminants used as pack animals can be pathogenic to wild ungulates. Further, domestic species can often appear outwardly healthy, yet carry microorganisms and parasites that are pathogenic to wild ungulates. It is important to understand that horses are hindgut fermenters, and have substantially different gut morphology than cattle, sheep, goats, or llamas. Therefore, they are not generally regarded as carriers of pathogens for susceptible ruminants, and should be exempt from this regulation.

PROPOSAL 103

WHAT WOULD THE PROPOSAL DO? Prohibit hunters from using felt-soled wading footwear in freshwaters of Alaska. This proposal would align regulations implemented by the Alaska Board of Fisheries for sport anglers.

WHAT ARE THE CURRENT REGULATIONS? There are no regulations describing the type of footwear that may be used while hunting.

WHAT WOULD BE THE EFFECT IF THE PROPOSAL IS ADOPTED? Hunters who have used felt-soled wading shoes in freshwater would be required to replace them with non-felt-soled footwear. It is possible that this proposed action could reduce the introduction of harmful invasive organisms into Alaska waters.

BACKGROUND: The use of felt-soled wading footwear by anglers has been identified as a vector for introducing invasive species such as Didymo (*Didymosphenia geminata*), New Zealand mudsnails (*Potamopyrgus antipodarum*), and whirling disease pathogens (*Myxobolus cerebralis*) to freshwater systems. Banning felt-soled wading footwear could reduce the spread of invasive species, especially by hunters who have visited infested waters within the last two weeks.

Didymo, also known as “rock snot,” is a type of single-celled algae. Didymo clings to streambeds and rocks by creating a fibrous stalk. When the density of these stalks becomes excessive, Didymo can form dense mats that hinder invertebrate production and aquatic plant growth. Studies have shown that Didymo can tolerate a wide range of hydraulic regimes, alter invertebrate communities, and their cells can be found suspended in free flowing water.

The status of Didymo as an invasive species in Alaska has yet to be confirmed, as it is native in parts of the state. There are confirmed reports of Didymo in Southeast waters, including Sitka, the greater Juneau-area, and Haines; as well as Rapid Creek, Eyak Lake and other locations in Southcentral.

New Zealand mudsnails (NZMS) are another invasive organism that can easily be transported on wading shoes, including those with felt soles. The closest observation of NZMS to Southeast Alaska was in the Columbia River estuary, and it has been documented in the diet of Columbia River king salmon. New infestations of NZMS continue to be observed in the State of Washington

Whirling disease is primarily spread by infected fish and fish parts, but it can also be transported by moist fishing gear, including in saturated felt-soled wading footwear.

The New Zealand government has banned the use of felt-sole footwear in its waters to fight the spread of invasive organisms. Other government agencies have taken the following measures: Maryland and Vermont have also banned felt soled footwear. Vermont’s regulation makes it illegal for anyone to use felt-soled wading footwear in waters of Vermont. Maryland’s regulation bans felt-soles “within five feet of state waters.” It does not make a distinction for freshwater or marine waters.

Although, felt-soled footwear regulations do not ensure that Alaska waters will be free of risk from invasive species introduced in/on recreational gear; thus, decontamination protocols are recommended after hunting or fishing, as means to reduce the potential of moving organisms between systems. Recommended protocols for treating gear are: cleaning and removing organic material from waders, boots, clothing, and equipment before you leave the site; eliminating water from boats, live wells, coolers, and other gear; thoroughly cleaning all gear that comes in contact with freshwater either with hot water ($>120^{\circ}$), bleach, or detergent solution; and drying gear completely before bringing it to a different waterway.

DEPARTMENT COMMENTS: The department is **NEUTRAL** on this proposal because it addresses a social issue; conversely, the Alaska Board of Fisheries did take a position when they passed a regulation banning the use of waders with soles comprised of absorbent material by anglers in freshwater. Recreational field gear is recognized as a potential pathway for transmitting invasive species; however, felt-soles are not the only means of transmission and decontamination protocols are necessary. The Department **SUPPORTS** educating anglers, hunters, and anyone who spends time in aquatic environments about the risk of spreading invasive organisms and effective disinfection procedures.

COST ANALYSIS: This proposal would require many wading hunters to purchase replacement wading footwear without absorbent soles.

PROPOSAL 104

EFFECT OF THE PROPOSAL: Prohibit the use of deer or elk urine for use in taking game.

DEPARTMENT RECOMMENDATION: Adopt

RATIONALE: Department proposal; see issue statement.

PROPOSAL 105

EFFECT OF THE PROPOSAL: Clarify the definition of wounded as it applies to the restrictions to bag limits.

DEPARTMENT RECOMMENDATION: No Recommendation

RATIONALE: In November of 2002, the Board adopted the current regulation for wounded bears in Southeast Alaska, requiring a wounded bear to count against the hunter's bag limit for that regulatory year. Since then, the same regulation has been adopted for bears and elk on Kodiak Island.

The definition of take and bag limit has been discussed by the Board in recent meetings, along with the difficulty of regulating hunter ethics and determining whether the wounded animal is mortally wounded. This proposal asks to further define and clarify the extent of wounding that is required before the bag limit is considered filled.

The department agrees that a reduction in wounding loss is a laudable goal and that this is a serious issue for hunters and managers alike. Often, either because of poor visibility and/or animal behavior, a hunter may not be able to tell if an animal is wounded or not. Because of this it can be difficult for hunters to know when to stop hunting and impossible for enforcement staff to prove a hunter is continuing to hunt when a wounded animal has filled the bag limit. A more positive way to approach the problem is to inform hunters of the current rules and encourage them to use self-restraint when they believe an animal has been wounded and not recovered. The department has worked on addressing the issue through better hunter education and by guides and hunters voluntarily pursuing hunter ethics.

PROPOSAL 106

EFFECT OF THE PROPOSAL: Count wounded muskox, bison, sheep and goat that are not recovered as the bag limit.

DEPARTMENT RECOMMENDATION: No Recommendation

RATIONALE: See rationale in proposal 105. This proposal request expansion of the species covered under the wounding loss regulation to include muskox, bison, sheep, and goats.

PROPOSAL 107

EFFECT OF THE PROPOSAL: Eliminate the statewide bag limit for black bear.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: Currently, a person is restricted to the highest bag limit for that species in any unit in the state. The statewide and unit specific bag limits are related, in that a hunter may continue to hunt in other units, as long as his total harvest across the state for that species is not higher than the unit bag limit. In other words, he may take one bear in a unit with a bag limit of one, then take one additional bear in a unit where the bag limit is two, then take two more bears in a unit where the bag limit is four. Under this proposal's scenario, the same hunter could visit those same units and take seven bears total, as each previous bear would not count in the next unit's bag limit.

Unit-specific bag limits are based on the wildlife population size, its sustained yield, and the anticipated hunter effort in the area. Lower bag limits are adopted in specific areas to limit overall harvest. More liberal bag limits are established in areas with higher populations, fewer hunters, and less access. Areas with more liberal bag limits are also designed to attract hunters to an area with more game available for harvest.

Many times a low bag limit indicates that there are too many hunters using the area, probably due to proximity to large human populations. If the statewide bag limit no longer applies, an overharvest would most likely occur in those areas.

PROPOSAL 108

EFFECT OF THE PROPOSAL: Prohibit the harvest of cubs and sows accompanied by cubs on National Park Service (NPS) lands:

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: : Congressional recognition of the authority of the States to manage fish and wildlife on Federally administered lands, including those by the National park Service, is very evident through legislation in ANILCA Sections 203, 1313 and 1314 and CFR part 24, Department of the Interior Fish and Wildlife Policy: State and Federal Relationships. The Statute and Policy are implemented through the Master Memorandum of Understanding between the Alaska Department of Fish and Game and the US National Park Service (MMOU). The MMOU notes that:

"The taking of fish and wildlife by hunting, fishing and trapping on certain Service lands in Alaska is authorized in accordance with applicable State and Federal law unless State

regulations are found to be incompatible with documented Park or Preserve goals, objectives or management plans.”

The implementation of management practices, adopted under state management plans that assure sustainability of populations, are not incompatible with documented Park or Preserve goals, objectives or management plans.

This proposal would invalidate recent legal recognition of the long-standing cultural practices by resident hunters to harvest black bears in dens (including sows with cubs) and to use artificial light as part of this practice. These methods are part of a pattern of customary and traditional use by local residents in these areas, which was recognized by the board in November 2008 and documented in the customary and traditional use worksheet found in Division of Subsistence Special Publication No. BOG 2008-07. Testimony is also on record from the March 2008 board meeting from subsistence users requesting recognition of each of these practices as customary and traditional means to harvest black bears

Although the proposer assumes these regulations were promulgated for predation control, the board was clear that they were enacted specifically to legalize long-standing customary and traditional methods used by residents of these units to obtain black bear meat during winter. Furthermore, black bears are likely abundant (2000–4000) and are lightly harvested (50–180 estimated annual take) in these units.

The Federal Western Interior Regional Advisory Council (RAC) endorsed the traditional and customary taking of sows with cubs and cubs in dens, including the use of artificial light, for Federal lands in all of Units 19, 21, and 24. The Eastern Interior RAC also endorsed these customary and traditional practices for Federal lands in Units 21 and 24, emphasizing the need for artificial light as a safety measure.

PROPOSAL 109

EFFECT OF THE PROPOSAL: Clarify and remove complicated or excessively restrictive regulations and ADF&G discretionary provisions pertaining to black bear hunting.

DEPARTMENT RECOMMENDATION: Take No Action

RATIONALE: The proposal seeks to modify season dates and bag limits in all areas of the state except Southeast Alaska. The proposal requires Board action, because the Board establishes seasons and bag limits in each regional meeting. The department does not have discretionary authority for seasons and bag limits, except in permit hunts.

The only black bear permit hunts in the state where the department uses its discretionary conditions to establish seasons, bag limits and hunt areas are the registration hunts in the Eagle River Management area. The biologist for this area has worked with Chugach State Park and homeowners in the area to carefully craft the dates and areas to provide maximum hunting opportunity for black bears in an area utilized by many user groups.

PROPOSAL 110

EFFECT OF THE PROPOSAL: Require the hunter to keep sex attached to the meat if it (the skull) needs to be sealed.

DEPARTMENT RECOMMENDATION: **Amend and adopt**

RATIONALE: At this time, the only area of the state where sealing is required and the hunter has the option of retaining either the hide or the meat is Unit 20B from June 1 – Dec. 31. This proposal would clarify that if only the meat is salvaged, proof of sex should remain attached to the meat until the skull has been sealed. The department has suggested amended language that further clarifies the intent of the proposer, and amends related language in 5 AAC 92.165.

PROPOSAL 111

EFFECT OF THE PROPOSAL: Clarify the sex organs, or portions of, that must remain attached for proof of sex.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: The current regulation for all big game, except bear, requires only portions of any external sex organ, to remain attached. Delineating exactly what is, or is not, required does not seem to be necessary. The proposer may have been trying to address the requirements for bear, since the regulation very clearly states that the penis sheath or vaginal orifice must remain attached as proof of sex.

PROPOSAL 112

EFFECT OF THE PROPOSAL: Repeal the requirement to leave evidence of sex attached to the meat of the animal in big game hunts limited to one sex.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: Currently, hunters taking an ungulate in areas restricting the take to one sex must leave sufficient portions of the external sex organs naturally attached to the meat to clearly indicate the sex of the animal. Although this regulation does represent a minor inconvenience to hunters, it is necessary from an enforcement standpoint. Without this regulatory tool, a hunter can take a female and mask it as a male with a legal set of antlers. Females represent the reproductive component of the population, and it is essential they be afforded protection where appropriate.

In the past, people have obtained the antlers/horns or external sex organs from legally taken big game animals and used them to disguise the sex of a big game animal taken illegally. For example, a set of spike or forked moose antlers and an unattached testicle easily can be carried around by a hunter. Without the existing regulation, those parts could be used to mask the sex of

an illegally taken cow moose. Division of Alaska Wildlife Troopers officers cannot be expected to return to the field with the hunter to investigate the kill site of every big game animal where the sex of the animal cannot be determined conclusively. Leaving evidence of sex naturally attached to the meat is not a burdensome or complicated requirement and it eliminates the potential abuse of sex-restricted bag limits. The use of DNA, as suggested by the proposal, is extremely expensive, and processing is delayed.

PROPOSAL 113

EFFECT OF THE PROPOSAL: Remove the reference to federal fish and wildlife agents in the transfer and possession regulation.

DEPARTMENT RECOMMENDATION: **Under Consideration**

RATIONALE: The Department is working with the Department of Public Safety to evaluate the ramifications of this change.

PROPOSAL 114

EFFECT OF THE PROPOSAL: Allow same day airborne hunting at a registered bear bait station as long as hunter is at least 300 feet from aircraft.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: The Department does not support same day airborne (SDA) hunting over a registered bait station on a statewide basis. This type of liberalization is allowed in Units 7, 9, 11, 13, 14A, 14B, 15, 16, 17 and in areas designated as predator control areas; it is not allowed statewide under general hunting seasons. The Board of Game allowed SDA hunting in units outside of predator control areas during the March 2011 board meetings after careful consideration and exclusion of high harvest areas and areas with hunter conflicts, such as Prince William Sound and the Anchorage Area in GMU 14C.

This proposal would create another exception to the general prohibition on same day airborne hunting. Where SDA exceptions have been granted for hunting, creating additional exceptions will ultimately lead to wider use of aircraft in a way that some consider unethical and increasing problems with enforcing prohibitions that remain in place. If passed, it would be difficult or impossible to distinguish between SDA black bear baiting, versus other types of hunting that would not be allowed in the same place at the same time (e.g., moose, other black bear and all brown bear hunting). The Department supports the Board of Game's actions during the March 2011 board meetings, which considered this activity on a unit-specific basis rather than allowing SDA hunting over registered bait on a statewide basis.

Proposal 144 for the March 2012 meeting addresses this same issue for Interior Alaska, and will allow the Board to deliberate on Units 12, 19-21, 24-25 26B and 26C with area biologists from those areas. The Department recommends discussing this on a regional basis and not at a statewide level to allow a more thorough evaluation with the board about areas where SDA

should be permitted.

PROPOSAL 115

EFFECT OF THE PROPOSAL: Eliminate the personally accompany requirement for guides using bait stations and require a guide-client agreement.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rational for proposal 118. The department is recommending the elimination of this requirement, along with other changes to bear baiting, in amendments to Proposal 118.

PROPOSAL 116

EFFECT OF THE PROPOSAL: In addition to the 10 bait sites in total, guides and assistant guides may also have two personal sites each; guides and assistant guides may hunt all sites for personal use without guide client agreements.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rational for proposal 118. The department is recommending aligning the number of bait sites all hunters can establish, including guides, along with other changes to bear baiting in amendments to 118.

PROPOSAL 117

EFFECT OF THE PROPOSAL: Remove the requirement for guides to personally accompany resident clients at black bear bait stations.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rational for proposal 118.

PROPOSAL 118

EFFECT OF THE PROPOSAL: Clarify and modify the permit for hunting black bear with the use of bait and scent lures.

DEPARTMENT RECOMMENDATION: **Amend and Adopt**

RATIONALE: The Department took the opportunity to review existing bear baiting regulations, both under general season hunting and control permits, and is proposing to update them based on the documented history of user groups and baiting activities. The amended proposal addresses the concerns brought forward by different user groups and does away with regulations that seem to be more restrictive than necessary, based on current use patterns.

The amended language:

- Increases and aligns the number of bait sites allowed by all hunters, including guides and their assistants. Allow personal or guided use at all sites. This still allows a guide with 2 assistants to work and hunt over 3X whatever the limit is (i.e. if the number is 3 for everyone, the guide with 2 assistants can use 9 sites). Many other states, as well as Canada, have no limit to the number of sites a hunter can establish. Baiting is a labor-intensive activity, and as such, is somewhat self-limiting. Over the last few years, the Board has been increasing the number of sites that can be established in control areas, and by guides. Data indicate that very few hunters chose to establish more than one or two sites, due to the work involved. Clean up of all sites is still a requirement, providing an additional limiting factor.
 - Allows bait sites to be established less than one mile from a cabin, if the cabin is located on the opposite side of a major river system. This distance setback has been in place for the Unit 16 control area for several years now, with no reported issues.
 - Removes the requirement for guides to personally accompany their clients at a bait site as long as a signed guide-client agreement has been completed.
 - Require the bear baiting clinic for all hunters requesting a bait site permit. Currently a one-time clinic is required for bear baiters in Units 6D, 7, 14A, 14B, 16A and 20B. The clinic can be taken online; there is no in person attendance requirement. The bear baiter is only required to take the clinic once, so most long time bear baiters are already qualified. Requiring the clinic statewide simplifies and aligns the bear baiting requirements.
 - Eliminates the department's ability to require a lower bag limit than exists for hunting in the area. This authority has never been utilized by the department, so is not necessary.
 - Repeals the special Unit 16 control area requirements, since they would now be consistent with general bear baiting.
 - Requires all first time registrants to successfully complete the Department's bear bait clinic. We have records of all those who have taken the clinic and they will be grandfathered in. The new requirement will affect those who have previously registered sites in units where the clinic has not been required; those individuals will be required to successfully complete the bear bait clinic prior to registering a bait station.
- *****

PROPOSAL 119

EFFECT OF THE PROPOSAL: Establish a section in regulation for black bear bait station permits and establish seasons for all of Alaska.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: Black bear baiting seasons used to be in 5 AAC 92.085 and were removed by the board when the new section 5 AAC 92.044, dealing specifically with bear baiting permits, was created. By allowing the department the discretionary authority to adjust the seasons and areas as needed on a biological basis, additional opportunity can be provided in many areas that were previously an issue. By putting established seasons and areas in a specific regulation, changes would have to go through the Board process and could not be implemented as quickly.

PROPOSAL 120

EFFECT OF THE PROPOSAL: Eliminate black bear baiting as a method requiring a predator control permit in predator control areas.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: The department is currently in the process of implementing this change internally and board action is not required. The department will provide more details at the meeting, but the current plan is to issue one baiting permit good for use in all general and predator control areas. Conditions on the permit would explain additional requirements needed for more liberal seasons and bag limits if baiting in a control area.

PROPOSAL 121

EFFECT OF THE PROPOSAL: Prohibit black bear baiting on all National Park Service lands.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: Congressional recognition of the authority of the States to manage fish and wildlife on Federally administered lands, including those by the National park Service, is very evident through legislation in ANILCA Sections 203, 1313 and 1314 and CFR part 24, Department of the Interior Fish and Wildlife Policy: State and Federal Relationships. The Statute and Policy are implemented through the Master Memorandum of Understanding between the Alaska Department of Fish and Game and the US National Park Service (MMOU). The MMOU notes that:

“The taking of fish and wildlife by hunting, fishing and trapping on certain Service lands in Alaska is authorized in accordance with applicable State and Federal law unless State regulations are found to be incompatible with documented Park or Preserve goals, objectives or management plans.”

The implementation of management practices, adopted under state management plans that assure sustainability of populations, are not incompatible with documented Park or Preserve goals, objectives or management plans.

PROPOSAL 122

EFFECT OF THE PROPOSAL: Allow the use of scent lures for black bear baiting while floating.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: Currently, the use of scent lures to attract black bears constitutes baiting, and therefore requires a permit from the department. This proposal seeks to allow use of scent lures

from boats to attract black bears without a black bear baiting permit. Bait sites have strict requirements for safe distances and signage that could not be met by baiting from a moving boat. For example, bears would potentially be attracted to shorelines and people in the area would not be warned that baiting was occurring.

PROPOSAL 123

EFFECT OF THE PROPOSAL: Allow the use of scent lures for black bear baiting while floating.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: See rational for proposal 122.

PROPOSAL 124

EFFECT OF THE PROPOSAL: Require trap identification for all Units on lands managed by the National Park Service.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: Past proposals requesting a permanent identification on all traps and snares have passed in some areas of the state where trapping occurs near roads, trails and other public access points, and where conflicts with other user groups have occurred. Requiring traps and snares to be marked makes enforcement easier, but also could potentially cause problems for otherwise legal trappers.

Such a regulation is unnecessary in most of the state, and is only necessary in specific areas with documented issues.

PROPOSAL 125

EFFECT OF THE PROPOSAL: Require a 72 hour trap check for all traps and snares set on National Park Service lands.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: Past proposals to require a specific trap-check time frame have not been adopted by the Board. Due to inclement weather, remote locations, and long distances, such mandatory times may be impossible to enforce. The trapper code of ethics already requires trappers to check traps regularly and promote trapping methods that reduce the possibility of catching non-target animals. The only area in the state where such a time check exists is a small area near Gustavus, which the Board established in response to a number of moose being caught in snares.

PROPOSAL 126

EFFECT OF THE PROPOSAL: Prohibit the trapping of black bears in all National Park Service managed lands.

DEPARTMENT RECOMMENDATION: **Take No Action**

RATIONALE: Trapping of black bear is currently prohibited on a statewide basis. The Board has not currently established any trapping seasons for black bear. Proposal 141 in the March 2012 meeting is the deferred proposal to consider the establishment of black bear trapping seasons, bag limits, and methods and means in some areas of the state.

PROPOSAL 127

EFFECT OF THE PROPOSAL: Prohibit the taking of a black bear by trap or snare.

DEPARTMENT RECOMMENDATION: **Do Not Adopt**

RATIONALE: The use of traps and snares to take black bear is only allowed under Intensive Management Plans adopted by the Board in two areas of the state-a portion of Unit 16(B) and a portion of Unit 19(D), and only under the terms of a permit issued by the department. A person participating in this activity in these areas must:

- successfully complete a department approved training program
- be at least 16 years of age
- report all animals taken within 48 hours
- check snares on a daily basis
- immediately notify the department if any incidental bears are snared

PROPOSAL 128

EFFECT OF THE PROPOSAL: Establish a tag and fee to allow trappers to retain incidental catch.

DEPARTMENT RECOMMENDATION: **No Recommendation**

RATIONALE: Allowing trappers to retain an incidentally taken animal would require changes to 5 AAC 92.220(h) "A game animal taken in violation of AS 16 or a regulation adopted under AS 16 is the property of the state." Since animals trapped out of season are taken in violation of chapter 84, *Trapping Seasons*, they are the property of the state. In addition, 5 AAC 92.220 and 5 AAC 92.140(d) require such animals to be salvaged and turned into the department. Rather than requiring a tag, the board could develop regulations allowing the department to document and seal (if required) the animal when the trapper turns the animal in and then return the animal to the trapper.

The Board does not have the authority to establish fees.

PROPOSAL 129

EFFECT OF THE PROPOSAL: Clarifies responsibilities of Department of Fish and Game commissioner.

DEPARTMENT RECOMMENDATION: **Adopt**

RATIONALE: Department proposal; see issue statement.

PROPOSAL 130

EFFECT OF THE PROPOSAL: Authorizes a predator control program in Unit 26B.

DEPARTMENT RECOMMENDATION: **Adopt**

RATIONALE: Department proposal; see issue statement. Additional information is available at www.boardofgame.adfg.alaska.gov.

PROPOSAL 131

EFFECT OF THE PROPOSAL: Add bear population reduction to the Unit 19A predation control program.

DEPARTMENT RECOMMENDATION: **Adopt**

RATIONALE: Department proposal; see issue statement.

PROPOSAL 132

EFFECT OF THE PROPOSAL: Modify the Agenda Change Request policy by changing the deadline and applying certain criteria..

DEPARTMENT RECOMMENDATION: **Support**

RATIONALE: Department proposal; see issue statement.

INTENSIVE MANAGEMENT PROTOCOL



DIVISION OF WILDLIFE CONSERVATION

December 2011

Outline of this report

- Purpose of IM Protocol
- What is Protocol
- Why was Protocol created
- How templates used by Department

Purpose of this report

- Explain rationale for IM Protocol
- Describe uses of associated templates:
 - Department staff: guidance for planning and implementation
 - Board of Game: efficient handling of IM in deliberations
 - Public: understanding and participation in the IM process

Intensive Management Protocol, Division of Wildlife Conservation

Outline of this report

- Purpose of IM Protocol
- What is Protocol
- Why was Protocol created
- How templates used by Department

Intensive Management Protocol, Division of Wildlife Conservation

What is the Protocol

- Legal and policy directives
- Principles - operational factors and agency experience used to design and evaluate IM programs that are:
 - ecologically sustainable
 - based on scientific information
 - socially sustainable
 - transparent and explicit decision framework
 - economically sustainable

Intensive Management Protocol, Division of Wildlife Conservation

Example of guidelines (Pr. #1)

Guideline 1.1: Managers should ensure ungulate and predator populations and their habitats will be managed for their long-term sustainability.

- a) Elevated ungulate populations should not degrade forage, nutritional condition, or population productivity to unsustainable levels.
- b) Habitat management practices intended to maintain or enhance forage health and availability should be implemented where and when they are feasible, acceptable, and cost-effective.
- c) Predator populations will be managed for sustainability even when reduced to lower levels with the intent to elevate harvestable surplus of ungulates; predators must be able to increase after treatments are reduced or suspended.

Intensive Management Protocol, Division of Wildlife Conservation

What is the Protocol (cont.)

- **Template documents as “checklists” for consistency among programs:**
 - Feasibility Assessment - proposal evaluation
 - Operational Plan - design / implement
 - ✓ Complements IM Plan (5 AAC 92.125)
 - Department Report - evaluate results

Intensive Management Protocol, Division of Wildlife Conservation

Outline of this report

- **Purpose of IM Protocol**
- **What is Protocol**
- **Why was Protocol created**
- **How templates used by Department**

Intensive Management Protocol, Division of Wildlife Conservation

Why was Protocol created

Milestone 1

IM law 1994 (AS 16.05.255 (e)-(g) and (j))

- Fortymile caribou herd recovery -- wolf sterilization and translocation (Dept) and wolf trapping (public)
- Large prescribed burns for moose habitat enhancement

Intensive Management Protocol, Division of Wildlife Conservation

Why was Protocol created

Milestone 2

IM objectives by 2000 (5 AAC 92.108)

- Wolf control started 2003, bear control 2006
- Public questions on why programs different
 - Focused area--rapid response expected
 - Broad area--slow response expected
- Public or Department doing control work
- “Proactive” approach to prevent decline
- Reallocation of mortality from predators to hunters as progress toward IM objectives

Intensive Management Protocol, Division of Wildlife Conservation

Why was Protocol created

Milestone 2 (continued)

- Antlerless moose hunts to reduce density where nutrition declined and range degraded
- Board of Game frustrated with variation in Department presentations across state
- As number and complexity of programs increased, Department staff needed clear, efficient procedures

Intensive Management Protocol, Division of Wildlife Conservation

Why was Protocol created

Milestone 3

Development of IM Protocol (2009-11) and associated document templates

- Define terms, concepts, strategies
- Consolidated source of information
- Development, implementation, evaluation
- Transparency on process and information
- Identify / mitigate conflicts before starting

Intensive Management Protocol, Division of Wildlife Conservation

Outline of this report

- Purpose of IM Protocol
- What is Protocol
- Why was Protocol created
- How templates used by Department

Intensive Management Protocol, Division of Wildlife Conservation

How templates used by Dept

Intended procedural order:

Step 1 - Feasibility Assessment

- Purpose: evaluate biological and management factors of proposed program to gauge potential for “success” (*Low, Moderate, High*)
 - Department: identify data needs
 - Public: review IM objectives, other hunt factors
 - Board: means for comparison among programs
- Posted on Board website prior to meeting
- Key step: Defining public expectation of “success” to identify and mitigate conflict

Intensive Management Protocol, Division of Wildlife Conservation

How templates used by Dept

Step 1 - Feasibility Assessment (cont.)

- Board action: comments to Department
- Feasibility Assessment first presented to Board in March 2011 (Unit 24B moose)

Intensive Management Protocol, Division of Wildlife Conservation

How templates used by Dept

Step 2 – Operational Plan

- Purpose: background, strategy, decisions for implementation
- Complements IM Plan (regulation)
- Posted on Board website prior to meeting
- Board action: comments to Department
- Flexibility: with data and public involvement, can occur with Feasibility Assessment

Intensive Management Protocol, Division of Wildlife Conservation

How templates used by Dept

Step 3 – IM Plan (5 AAC 92.125)

- Board action: adopt regulations

Intensive Management Protocol, Division of Wildlife Conservation

How templates used by Dept

Step 4 – Department Report

- Required annually per AS 16.050(b)
- Department provides updates on prey, predators, habitat, costs
- Department Reports produced in February and August 2011 (offset reporting on bears and wolves, respectively)
- Board action: program review (renewal)
- Reports archived on Division of Wildlife Conservation website

Intensive Management Protocol, Division of Wildlife Conservation

IM Protocol templates in Board process

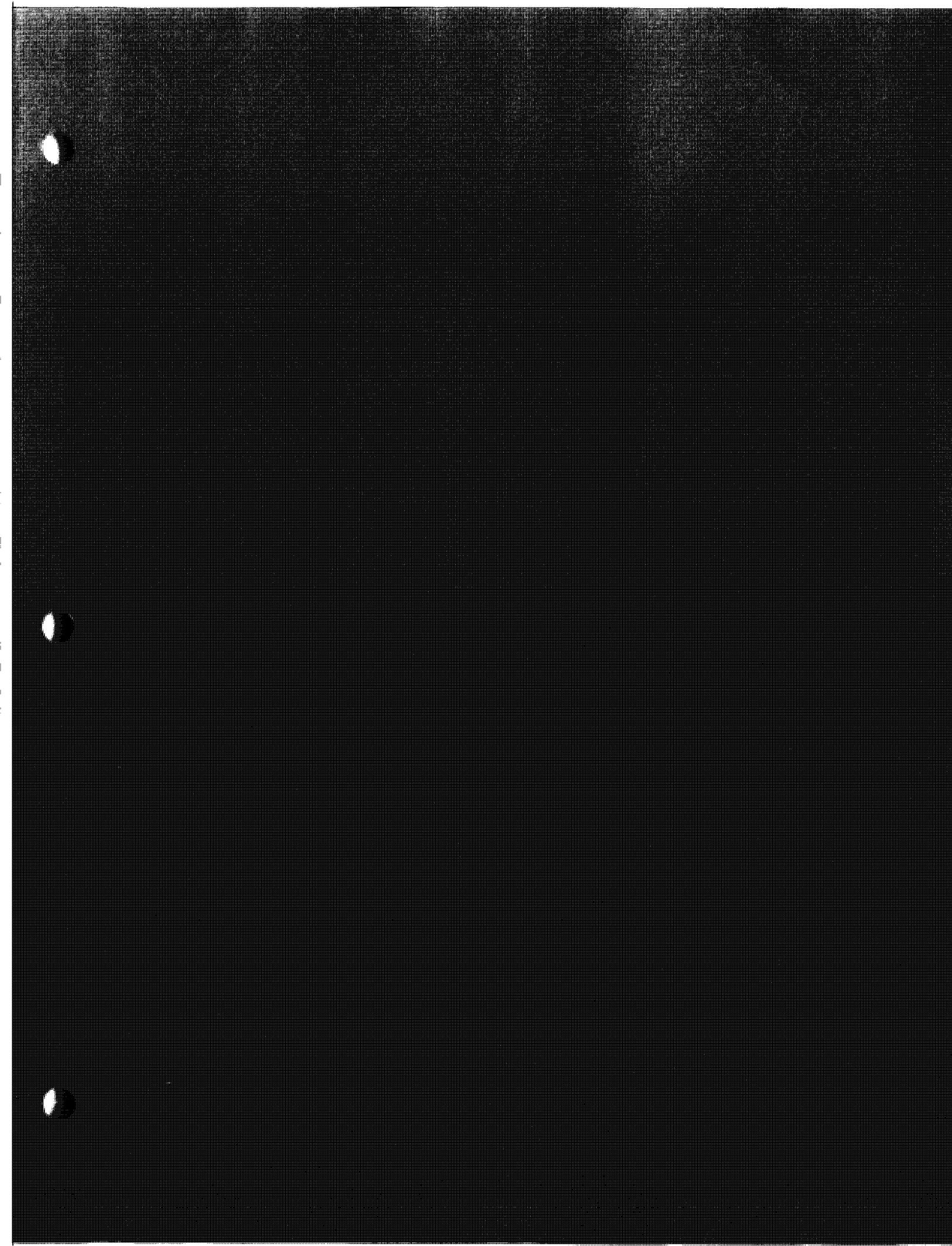
<u>Board document</u>	<u>Department templates</u>	<u>Purpose</u>	<u>Board action</u>	<u>Website Posting</u>
	Feasibility Assessment	Planning	Comment	BOG
	Operational Plan	Design	Comment	BOG
IM Plan 92.125		Regulatory	Adopt	BOG
	Department Report	Evaluation	Review	DWC

```

graph TD
    FA[Feasibility Assessment] --> OP[Operational Plan]
    OP --> IM[IM Plan  
92.125]
    OP --> DR[Department Report]
  
```

Templates are work in progress

IM templates have version number – we expect to modify them with experience





Division of Wildlife Conservation Report to Board of Game, Jan. 2012 Statewide Meeting

Methods and Means Exemptions allowing “wheelchair-bound or similarly disabled” individuals to take brown bears using bait [5 AAC 92.104(e)].

(e) Notwithstanding any other provision of this title, the department may issue a permit to take brown bears with the use of bait during established seasons and with established bag limits to an applicant who qualifies for the hunt and meets the requirements if (a) and (b) of this section, and who is permanently wheelchair-bound or similarly disabled to the extent that use of bait is the only reasonable option the applicant has to harvest a brown bear.

Summary for 2011

- DWC issued nine of these exemptions and did not deny any applications.
- The exemptions authorized hunters to hunt brown bears over bait anywhere in the state during any open brown bear season at bait stations registered with DWC. An application form and example exemption are included below. DWC has a process for setting up brown bear bait stations outside of black bear baiting regulations for use with these exemptions.
- As far as we know all exemptions issued during 2011 were used during existing black bear baiting seasons at existing registered black bear bait stations, but the regulation does not confine hunters to using only those bait stations.

Questions

1. What types of disabilities should qualify for these exemptions? Of the nine exemptions issued only three were issued to people permanently confined to a wheelchair. Others were issued to:
 - Double below-knee amputee who can walk with prosthetics, but has difficulty getting around in the field.
 - An individual with hypophosphatasia, a condition that results in weak leg bones and potential for frequent breaks.
 - An individual with multiple sclerosis who is not wheelchair-bound, but requires crutches and cannot traverse uneven ground.
 - An individual with a brain injury resulting in poor balance. He needs crutches to walk and cannot fire a gun while standing.
 - An individual with a left leg prosthesis who has difficulty walking in the field.
 - An individual with numbness in his legs and hips resulting from a spinal injury who uses canes and has difficulty walking in the field.

Should DWC continue to use our discretion on which types of disabilities qualify for these exemptions or would the Board like to provide further guidance?

2. Where and during which seasons should these exemptions apply, any open season for brown bears state-wide, only areas and seasons authorized for baiting black bears, or something else?

3. Should we also use restrictions in 5 AAC 92.044 on where black bear bait stations may be located for brown bears, be more restrictive, use our best judgment?

5 AAC 92.044 Permit for hunting black bear with the use bait or scent lures.

....

(5) a person may not use bait or scent lures within

- (A) on-quarter mile of a publicly maintained road, trail, or the Alaska Railroad
- (B) one mile of a
 - (i) house or other permanent dwelling
 - (ii) business; or
 - (iii) school

....

(8) only biodegradable materials may be used as bait; if fish or game is used as bait, only the head, bones, viscera, or skin of legally harvested fish and game may be used, ...

....

(10) a permittee must remove bait, litter, and equipment from the bait station site when hunting is completed;



STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
APPLICATION
METHODS AND MEANS EXEMPTION
HUNTING BROWN BEARS USING BAIT

Part 1. Applicant Information and Statements

First Name	M.I.	Last Name	Daytime Phone Number
Mailing Address			E-mail Address
City	State	Zip Code	Hunting License Type: <input type="checkbox"/> Resident <input type="checkbox"/> Non-Resident
1. Please explain how your physical condition (wheelchair-bound or similar) prohibits you from hunting brown bears under existing regulations and how an exemption authorizing hunting with use of bait is your only reasonable opportunity to harvest a brown bear.			
3. I certify that all statements entered on this application are true and that I will abide by all conditions and restrictions of an exemption if issued.			
Applicant Signature		Date	

Part 2. Physician's Statement

4. To be granted this exemption the applicant must be permanently wheelchair bound or similarly disabled so that this exemption would provide their only reasonable opportunity to harvest a brown bear. Please describe the nature and extent of the applicant's condition or disability:		
5. Is this disability permanent? <input type="checkbox"/> Yes <input type="checkbox"/> No		
6. I certify that the applicant is wheelchair bound or similarly disabled.		
Physician's Name (Print)	Telephone Number	
Physician's Signature	Date	Physician's License Number and State

Part 3. Non-Resident Hunters. To legally hunt brown bears non-resident hunters must be accompanied by a licensed Alaska Big Game Guide or an Alaska resident who is at least 19 years of age and within the second degree of kindred.

Guide or Relative:			
First Name	M.I.	Last Name	Daytime Phone Number
Mailing Address	City	State	Zip Code
Alaska Guide License Number			

Completed and signed applications should be mailed *at least 30 days prior to the start of your hunt* to the Alaska Department of Fish and Game, Division of Wildlife Conservation, Permits Section, P.O. Box 115526, Juneau, AK 99811-5526. Or, applications may be submitted by fax (907-465-6142) or e-mail in pdf or similar format to dfg.dwc.permits@alaska.gov.



STATE OF ALASKA
DEPARTMENT OF FISH AND GAME

P.O. Box 115526
JUNEAU, ALASKA 99811-5526

Permit No: 11-XXX-M

Effective Dates:

4/18/2011

to:

12/31/2011

**Methods & Means Exemption
Hunting Brown Bears Using Bait**

This permit authorizes _____

(name)

of _____

(address)

to conduct the following activities in accordance with AS 16.05.930 and 5 AAC 92.104.

Hunter Name is granted authority to hunt brown bears using bait or scent lures at any bear bait station legally registered with ADF&G. Hunter Name is responsible for ensuring that the permit for the bait station(s) at which he hunts is valid during the period he hunts and that his hunting license number is displayed on the bait station sign. Hunter Name shall also comply with all other license, tag, and permit requirements and Alaska hunting regulations.

Whenever Hunter Name is hunting brown bears under this exemption he shall be accompanied by at least one able-bodied and licensed companion hunter, who is at least 19 years or older. Companion hunters are authorized to: 1) serve as a back-up shooter, 2) pursue and dispatch wounded bears, and 3) assist the exempted hunter with processing and removing game from the field. For non-resident hunters, the companion hunter must be a registered guide or relative who is an Alaska resident and within the second degree of kindred. Only the exempted hunter may harvest a brown bear under this exemption.

THIS EXEMPTION MUST BE IN POSSESSION WHILE CONDUCTING AUTHORIZED ACTIVITIES.

GENERAL CONDITIONS, EXCEPTIONS AND RESTRICTIONS

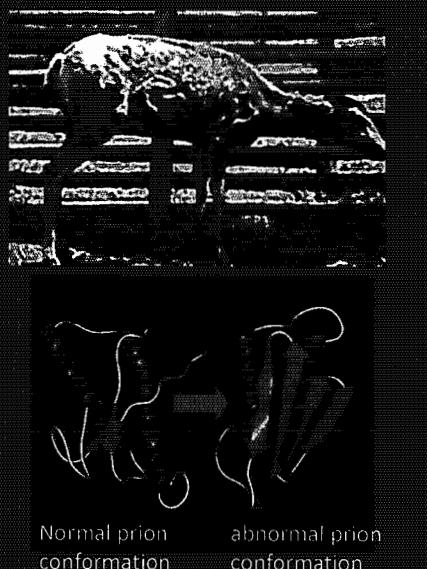
1. This permit must be carried by person(s) specified during approved activities who shall show it on request to persons authorized to enforce Alaska's fish and game laws. This permit is nontransferable and will be revoked by the Commissioner of Fish and Game if the permittee violates any of its conditions, exceptions or restrictions. No redelegation of authority may be allowed under this permit.
2. No report is required for this authorization. However, reporting requirements as indicated by the hunt remain in effect. Persons who fail to complete all hunt requirements, including harvest ticket and permit reports, will not be granted further Methods and Means Exemptions until the requirements are met.
3. UNLESS SPECIFICALLY STATED HEREIN, THIS PERMIT DOES NOT AUTHORIZE taking of game in areas otherwise closed to hunting and fishing; without appropriate licenses required by state regulations; during closed seasons; or in any manner, by any means, at any time not permitted by those regulations.





Chronic Wasting Disease (CWD)

- **100% Fatal** disease of the central nervous system of North American cervids: deer, elk, and moose
- *Transmissible spongiform encephalopathy*
 - Infectious, mis-folded “rouge” prion protein
 - resists protease breakdown, leading to ‘holes’ in the brain
 - Causes muscle wasting, behavioral changes and eventually death



CWD Prions

- Not ‘alive’ so can’t be killed or disinfected
- Persistent in the environment, binds to soil
 - Contaminated area remains infective to deer species for many years

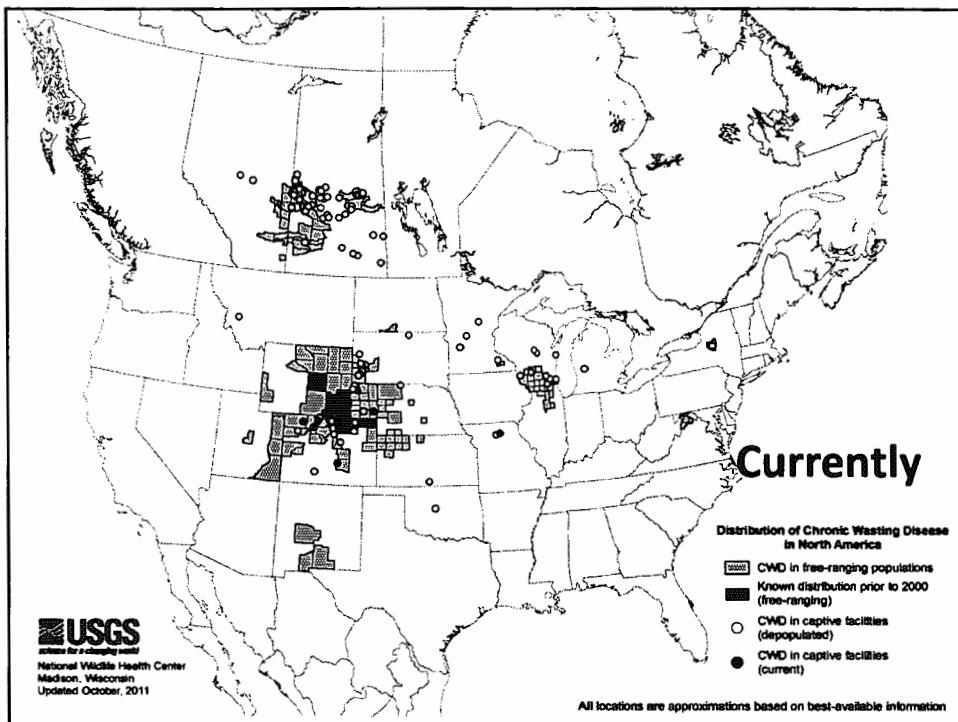
Where did CWD come from?

- First recognized in research mule deer in northern Colorado in late 1960's
- Identified as a TSE in 1978
- Mid-1980's detected in free-ranging deer and elk in contiguous portions of NE Colorado, SE Wyoming

Spread through animal movements



- 2002: Not detected in free-ranging deer in SW North America.
- 2003: Not detected in wild deer in Wisconsin, Iowa, Illinois, Alberta.
- Known presence in captive mule deer 2 states and 2 pronghorn pens are reported in S. Korea.



CWD is Not Present in Free-ranging Cervids in Alaska, as far as we know...



- Since 2002, DWC has tested (all negative):
 - 408 – moose
 - 1,961 - SBT deer
 - 162 – wild elk
 - 84- caribou
- However, there are 12-14 facilities with privately-owned elk, CWD-status unknown
- Federal funding for CWD-surveillance has been eliminated in the current budget

Prevention is key

- No effective means of eradication from wild populations once introduced
- Management in free-ranging populations to date consists of mass-culling
- Movement of farmed deer and elk accounts for many new introductions but not all
- Continuing expansion of host and geographic ranges in free-ranging populations

Transmission routes

- Transmission is via the oral route
 - Carcasses of infected animals esp “at risk materials”- brain, spinal cord, lymphoid tissues
 - Feces, saliva, and urine
 - Prions from these sources bind to soil in the environment, contaminate water/forage and persist for years

Assessment of Risk from Urine Scents

- CWD and other TSE-prions have been detected in the urine of infected animals including WT deer and mule deer
- CWD-prions or activity detected have been consistently in salivary glands, intestinal tract and urinary bladders of infected animals

Manufacture of Urine Scents

- Most scents/attractants contain urine from farmed deer
- Collected over grate systems allowing fecal and other excreta (i.e. saliva) contamination
 - Does in estrus, sometimes combined with multiple animals/sexes
 - Not processed to destroy any infectious disease agents such as Leptospirosis, Brucellosis, TB, Johne's Disease
 - No known disinfection process for prions in product that would preserve scent characteristics
 - High concentrations of alkali can reduce but not eliminate prion infectivity
 - Only high temperature incineration destroys prions
- No regulations or standards to ensure scents are disease-free
- No requirement for CWD-free farm origin or even participation in surveillance/monitoring programs

Use of scents by hunters

- Dragging scent saturated materials along deer trails
- Placing scent saturated products near deer stand
- Deposit at several ground locations or vegetation in hunting area
- Scent bags or droppers to periodically deposit urine based scents while hunting

Persistence in the Environment

- Infectious prions persist in soil >2.2 yrs after removal of infected animals
- Contaminated premises demonstrated transmission over even longer periods
- CWD prions bind to soil and remain on surface where it is available to animals
- Cumulative amount of CWD prions from urine introduction can occur over multiple years

Deer behavior toward scents

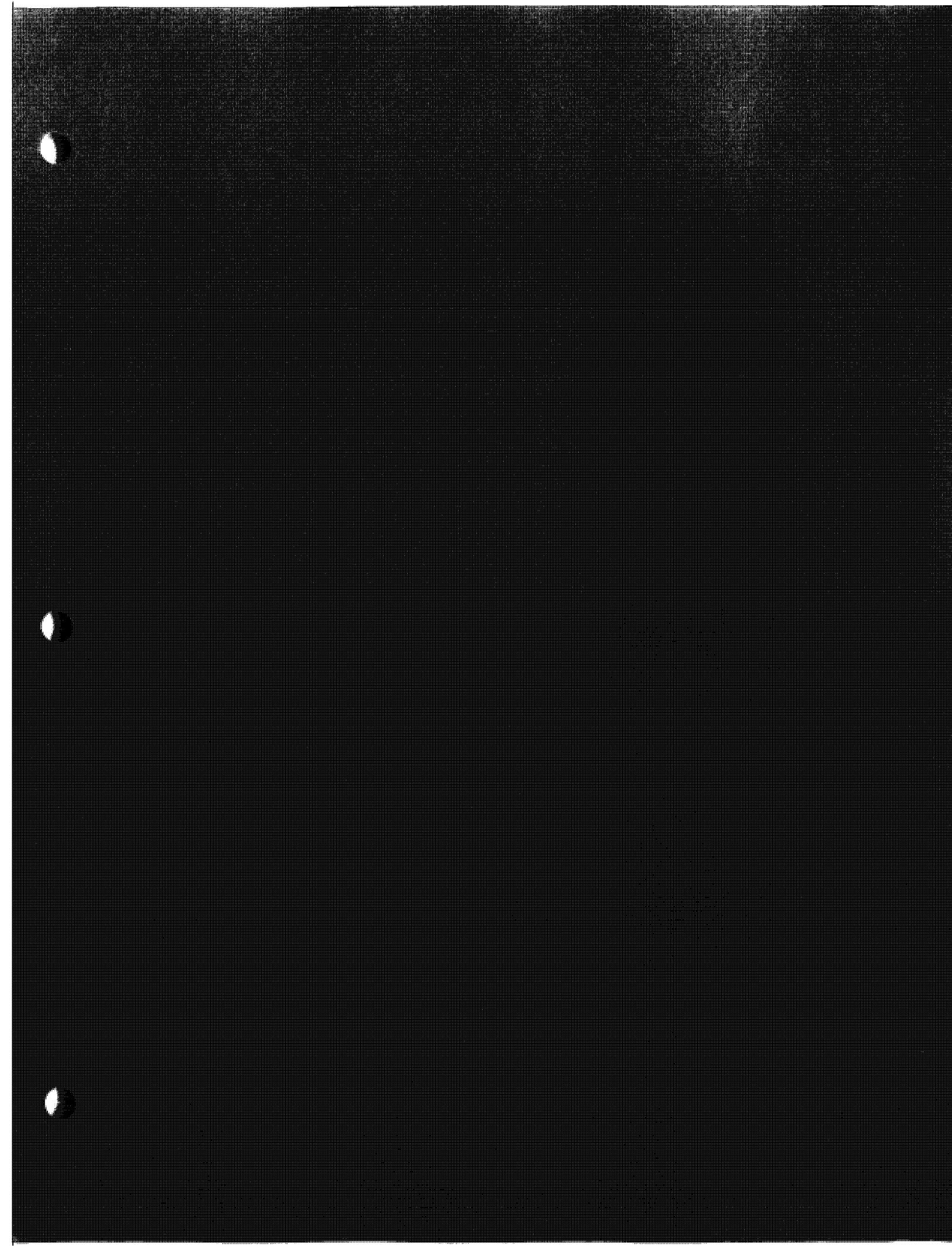
- Deer that are attracted often smell or lick the surfaces that have been treated by these scents
- The oral route is the known route of infection with CWD prion proteins
- Deer licking CWD-prion contaminated surfaces, vegetation, soil can become infected

Actions by other agencies on use of urine-based scent lures

- Manitoba, Saskatchewan and Ontario have implemented bans
- Vermont, Maine issued warning against use
- Wisconsin considering ban

Summary

- There is evidence of small amounts of CWD prions in urine and its potential to be infectious
- Although hunters typically use only small amounts, the long-term accumulation and environment persistence present a risk for CWD introduction to Alaska's free-ranging cervids (deer, elk, moose, and caribou)
- This risk factor **completely preventable**
- If CWD were introduced to wild cervids in Alaska, there is no known efficacious treatment, mitigation or eradication strategy.





Risk Assessment of Domestic Pack Animals to Dall's Sheep and Mountain Goats



Lessons Learned from
Big Horn Sheep

Evolution/Adaptation

- ◆ Domestic animals have been selected for thousands of years to thrive under 'high density' husbandry conditions
- ◆ Animals evolve with their own flora/fauna (parasites and microorganisms)
 - When exposed to a 'new' pathogen or parasite, animals are more likely to suffer morbidity (illness) and mortality

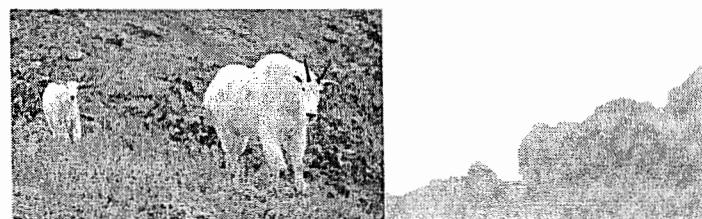
Evolution/Adaptations

- ◆ Healthy domestic animals carry parasites, bacteria, viruses, etc. that have minimal impact on them but can cause severe disease in non-adapted, related, wild species



Evolution/Adaptations

- ◆ Isolated populations, esp with low genetic variability are typically naïve (no previous exposure) and may not be able to mount adequate innate immune responses to new pathogens
 - Introduction of a pathogen to a naïve population can result in mass die-offs



History of Impact of Domestics on Wild Sheep Populations

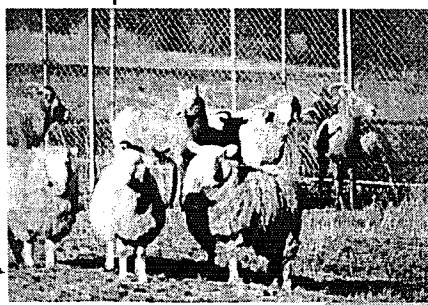
- ◆ 19th & 20th century declines and population expatriations of Big Horn Sheep (BHS) coincided temporally and spatially to contact with domestic animals
- ◆ 30 yrs of increasing body of anecdotal and empirical evidence underscores the potential risk of disease transmission from domestic sheep and goats to wild sheep



95/01/97

Respiratory Disease

- ◆ Respiratory disease resulting in pneumonia is the most serious and devastating disease at a population level that is shared by domestic sheep/goats and wild sheep



Field Evidence of Disease Transmission from Domestic Sheep

- ◆ A major BHS die-off in Colorado occurred in 1997-98 following discovery of a single domestic sheep with BHS on winter range
 - Though the domestic sheep was removed promptly, *Pasteurella* pneumonia spread through the herd.
 - ◆ Twenty eight percent of the herd died
 - ◆ Spread to two nearby herds
 - ◆ Lamb recruitment was very low for 2-3 years
 - ◆ Mortality from pneumonia occurred in adults for an additional two years.
 - Nine years later, the population was estimated at half the size prior to the outbreak.



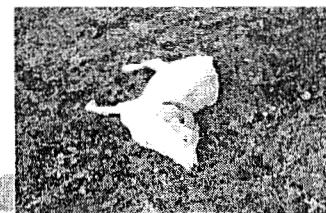
Field Evidence of Disease Transmission from Domestic Goats and Cattle

- ◆ In 1995, a feral goat was found in association with BHS just prior to a large pneumonia-related die-off of 50-75% of the BHS herd in the Hells Canyon area
- ◆ A respiratory disease die-off in BHS following close contact with cattle has also recently been documented



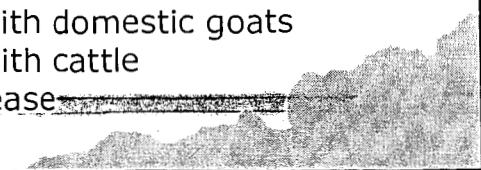
Experimental Evidence of Pathogenicity of Domestic Animal Respiratory Bacteria

- ◆ In repeated inoculation trials with *P. haemolytica* cultured from domestic sheep, none of the domestic sheep died while 12 of 13 BHS died
- ◆ Dall's sheep shown to be susceptible to lethal pneumonia when inoculated with *P. haemolytica* (Foreyt et al . 1996)



Experimental Evidence of Pathogenicity of Domestic Respiratory Flora

- ◆ In contact experiments, BHS were penned with healthy domestic sheep and/or argali/mouflon sheep hybrids
 - All 23 BHS died of respiratory disease while all domestic and hybrid sheep remained healthy.
- ◆ In other pen experiments:
 - ❖ 2 of 9 BHS penned with domestic goats
 - ❖ 1 of 9 BHS penned with cattle died of respiratory disease



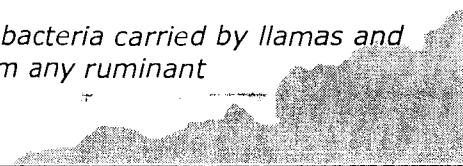
Evidence: pack goats and llamas/alpacas harbor pathogens to wildlife

- ◆ Healthy pack goats in Idaho have been tested and 35 of 45 were found to harbor pathogenic strains of *Pasteurella haemolytica*
- ◆ *Pasteurella haemolytica* was identified in llama/alpaca submissions to the British Columbia Animal Health Centre



Domestic animal pathogens of concern not detected in AK Dall's sheep or Mtn Goats

- ◆ Domestic sheep and goat pathogenic strains of pneumonia causing organisms
 - BACTERIA (*Pasteurella*, *Mannheimia*, *Bibersteinia*)
 - VIRUS (Infectious Bovine Rhinotracheitis)
 - VIRUS (Ovine progressive pneumonia)
 - *Mycoplasma ovipneumoniae*
 - Lungworm *Muelleris* sp.
- ◆ Sheep nasal bot fly
 - Can be carried by llamas or sheep without signs
- ◆ Johnes Disease
 - Environmental persistent bacteria carried by llamas and can be transmitted to/from any ruminant



Examining the Risk of Disease Transmission between Wild Dall's Sheep and Mountain Goats, and Introduced Domestic Sheep, Goats, and Llamas in the Northwest Territories (Garde et al 2005)

◆ Conclusions

- there are potentially a number of important pathogens of domestic sheep, goats, and llamas that pose a real and significant disease risk for Dall's sheep and mountain goats
- although there are many variables and unknowns regarding disease susceptibility and risk in Dall's sheep, there are substantial risks associated with the introduction of domestic sheep, goats and llamas near Dall's sheep range in the NWT

Examining the Risk of Disease Transmission between Wild Dall's Sheep and Mountain Goats, and Introduced Domestic Sheep, Goats, and Llamas in the Northwest Territories (Garde et al 2005)

◆ Conclusions

- contact between domestic sheep or goats and wild Dall's sheep or mountain goats would **likely** result in significant disease in the wild species with substantial negative and long term effects on population dynamics and sustainability



Examining the Risk of Disease Transmission between Wild Dall's Sheep and Mountain Goats, and Introduced Domestic Sheep, Goats, and Llamas in the Northwest Territories (Garde et al 2005)

◆ Recommendations

- We strongly advise that **domestic goats not be used as pack animals, and that domestic sheep and goats not be pastured anywhere in the vicinity of Dall's sheep or mountain goat ranges within the NWT**



Examining the Risk of Disease Transmission between Wild Dall's Sheep and Mountain Goats, and Introduced Domestic Sheep, Goats, and Llamas in the Northwest Territories (Garde et al 2005)

◆ Furthermore

- Experience gained from events in the US and southern Canada clearly highlights the substantial economic and social costs associated with trying to remedy the effects of disease introduction to wild sheep populations from domestic sheep and goats



***Recommendations for Domestic Sheep and Goat Management In Wild Sheep Habitat,
WAFWA Wild Sheep Working Group (2007)***

◆ Conclusions

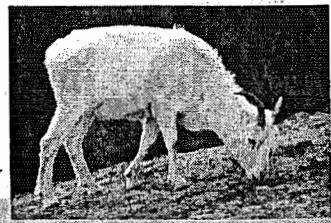
- There is a preponderance of evidence that indicates a significant risk of disease transmission from domestic sheep and goats to wild sheep exists.
- In some cases, consequences to wild sheep have been severe enough to endanger entire populations of wild sheep.



***Recommendations for Domestic Sheep and Goat Management In Wild Sheep Habitat,
WAFWA Wild Sheep Working Group (2007)***

◆ Conclusions

- Effective separation (both temporal and/or spatial) between wild sheep and domestic sheep and goats should be a primary management goal of state and provincial agencies responsible for wildlife management



***Recommendations for Domestic Sheep and Goat Management In Wild Sheep Habitat,
WAFWA Wild Sheep Working Group (2007)***

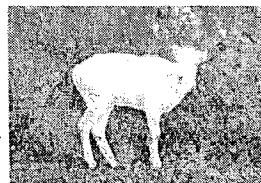
◆ Conclusions

- It is widely recognized (Garde et al. 2005), but needs to be re-emphasized, that thinhorn sheep (Dall's sheep, Stone sheep) in northwestern Canada and Alaska are immunologically naïve compared to wild sheep occurring in southern Canada and the remainder of the western U.S.
- **Additional precautions should be taken to ensure that absolutely no contact occurs between naïve thinhorn sheep and domestic sheep and goats.**

***Recommendations for Domestic Sheep and Goat Management In Wild Sheep Habitat,
WAFWA Wild Sheep Working Group (2007)***

◆ Recommendations

- The use of domestic sheep and goats as pack animals by hunters, anglers, and other recreational or commercial users that travel in mapped wild sheep habitat should be prohibited where legislation/regulation exists



Conclusions



- ◆ Transmission of pathogens from apparently 'healthy' domestic animals is associated with disease and death in wild sheep and goats
 - Resulting mass-die offs have population level impacts including extirpation of wild sheep populations requiring re-introductions
- ◆ Alaska's Dall's sheep and mountain goats are at even higher risk of devastating consequences of pathogen and parasite introduction

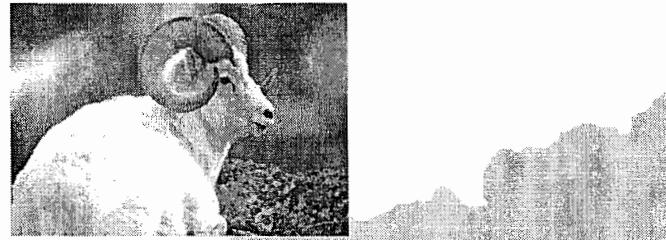
Conclusions

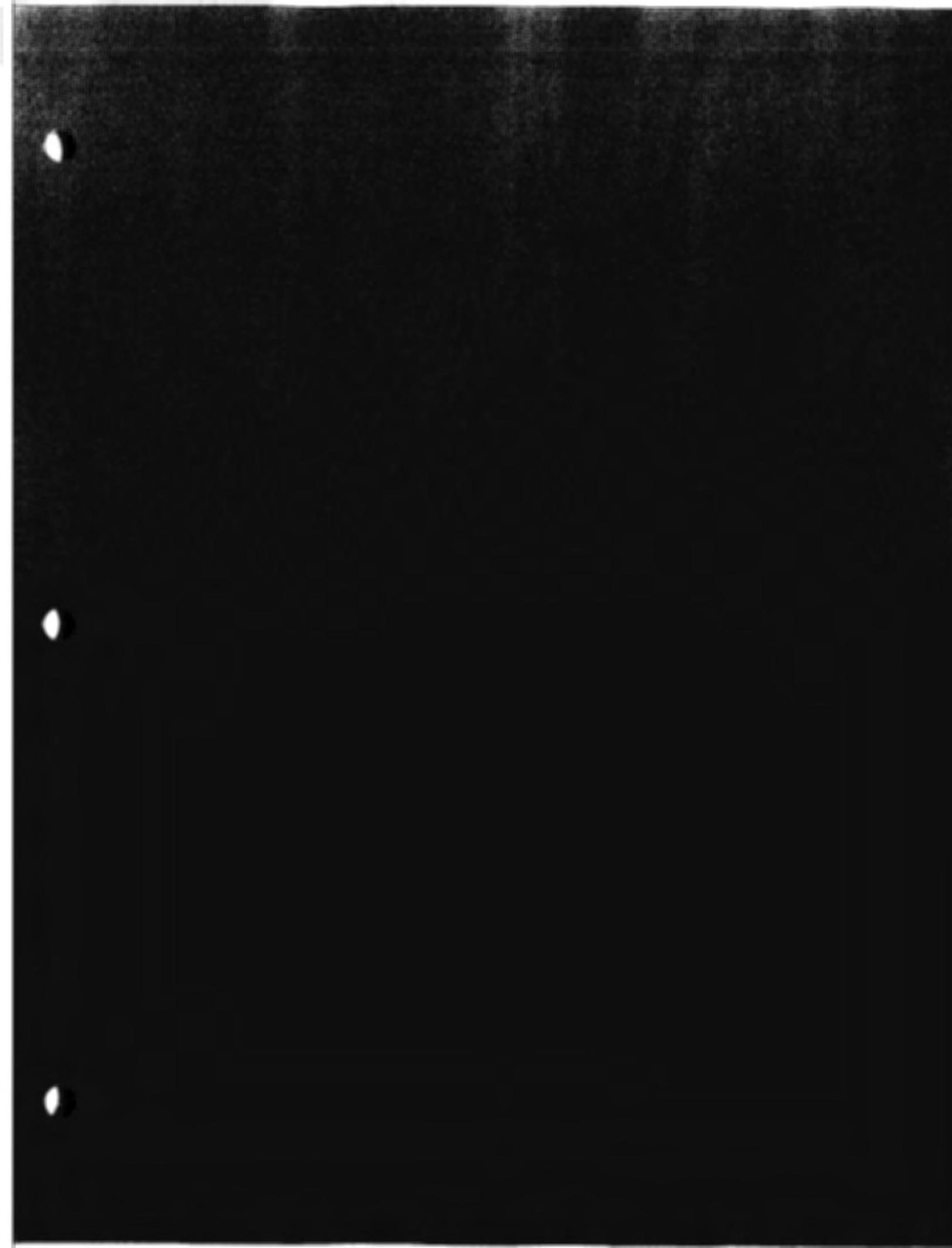


- ◆ Experts uniformly recommend complete separation of domestic sheep and goats from wild sheep and goats to prevent disease transmission
 - Disease transmission risks are fewer but still substantial from llamas, alpacas and cattle
 - Yaks have not been evaluated in published risk assessments but based on similarities to cattle and their exotic origin, they are likely to carry pathogens and parasites potentially detrimental to wild sheep, goats and muskox

Conclusions

- ◆ Horses, donkeys, mules (Equidae) do not typically carry parasites or pathogens that are easily transmitted to ruminant sheep/goats and thus are acceptable pack animals









Division of Subsistence, ADF&G, Review of Research Program

Alaska Board of Game

Anchorage, AK

January 2012

RC 3

Statutory Duties

- AS 16.05.094 lists 7 “duties”
- These fall into 3 categories:
 1. Research and data compilation (duties 1&2): investigate “all aspects of the role of subsistence hunting and fishing in the lives of residents of the state”; quantify harvests
 2. Data reporting and education (duty 3)
 3. Application of study findings: regulatory boards, management plans (duties 4,5,6,&7)

The division's "Mission Statement"

To scientifically quantify, evaluate, and report information about customary and traditional uses of Alaska fish and wildlife resources.

The division's "Core Services"

1. Research, quantify, and provide the resulting information to the public about customary and traditional uses by Alaskans of fish and wildlife resources.
2. Provide scientifically-based information for fisheries and wildlife management programs; and to the Board of Fisheries and Board of Game for their use in evaluating reasonable opportunities for customary and traditional uses.

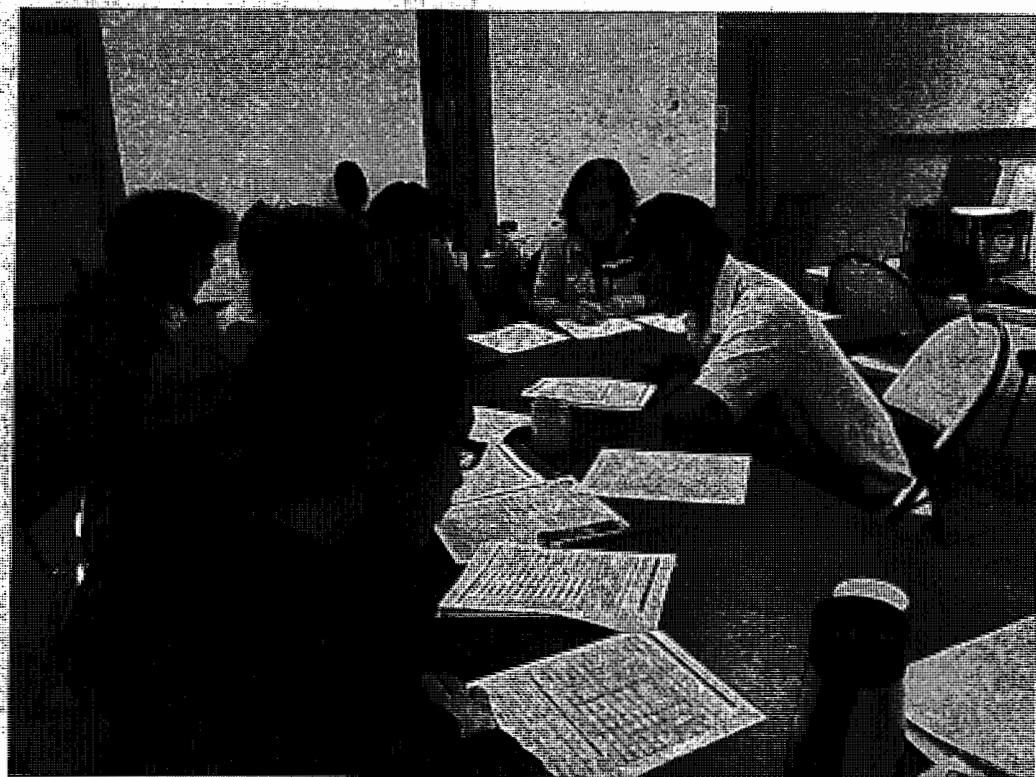
Funding and Staffing

- 3 primary funding sources: state general fund, federal sources, and statutory designated program receipts.
- 36 permanent staff in 5 year-round offices.

Strategic Research Plan

- Strategic planning process begun June 2007
- Purpose: establish priorities for research consistent with funding and staffing levels
- Identified 15 research goals connected to primary duties, including, among others:
 - continue community baseline studies;
 - develop and maintain time series harvest data;
 - investigate special topics;
 - improve access to reports and databases;
 - participate fully in BOG and BOF process.
- Implementation: through GF increments, RSAs
- Public review draft = Special Publication 2008-06

Types of research projects



- Community baseline surveys
- Special topic research
- Local and Traditional Knowledge
- Harvest monitoring

Research Methods

- Household surveys, either “comprehensive” or focused on certain resources (e.g. “big game” or “nonsalmon fish”)
- Mapping of harvest areas
- Key respondent interviewing
- Participant observation
- Harvest monitoring and assessments
- Other sources of information

Steps: how a project is implemented

1. Obtain community approvals
2. Finalize survey instrument & other protocols
3. Set sampling goals: census or random
4. Train local researchers
5. Obtain informed consent & conduct interviews
6. Conduct data analysis: estimated totals
7. Obtain community and other reviews
8. Publish findings in technical paper series

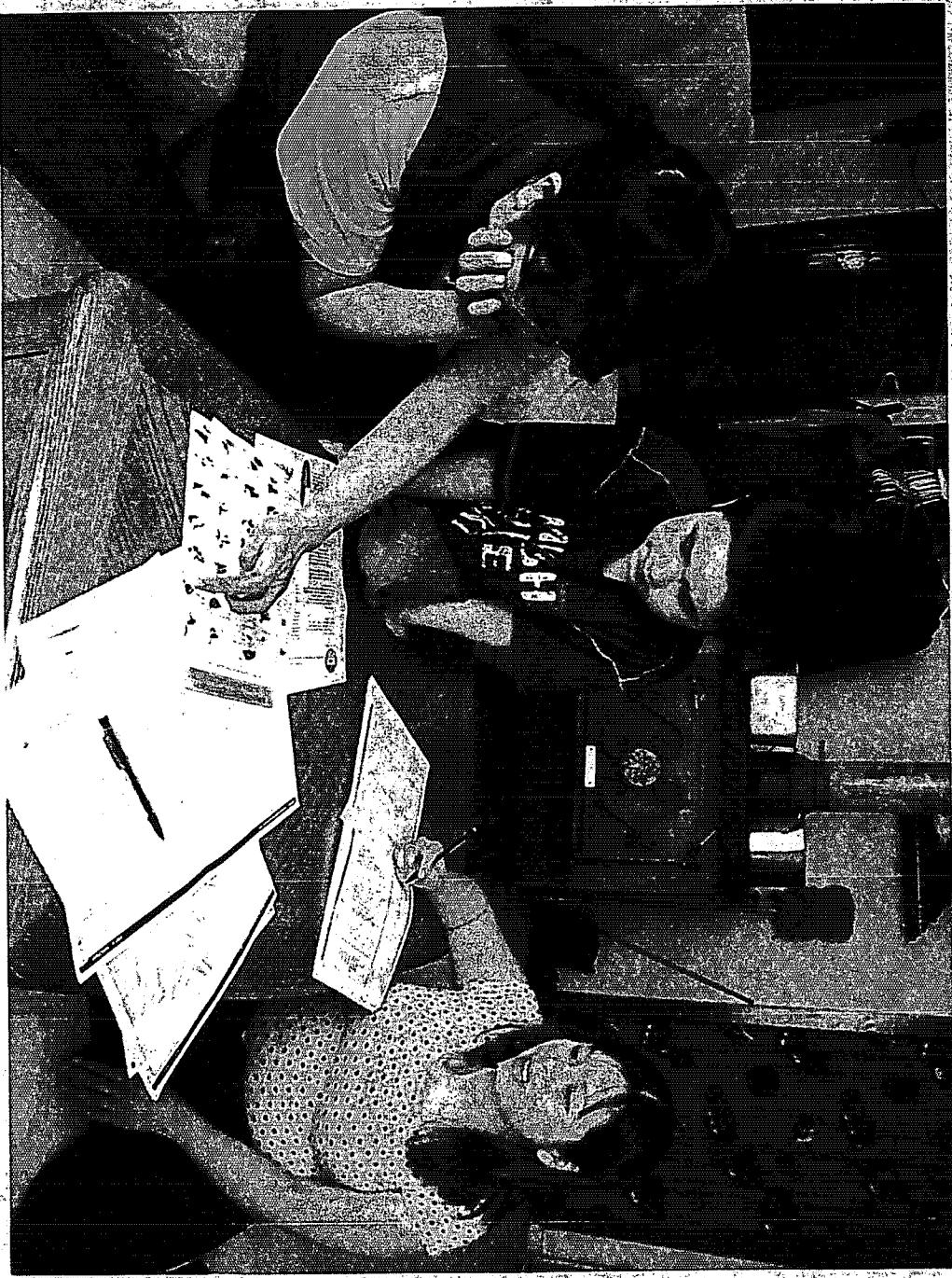
Methods: Introducing a project in Togiak



Methods: Local assistant orientation in Noatak



Methods: Administration of survey in Emmonak



Methods: Mapping harvest areas



Methods: Key respondent interviewing in Nondalton



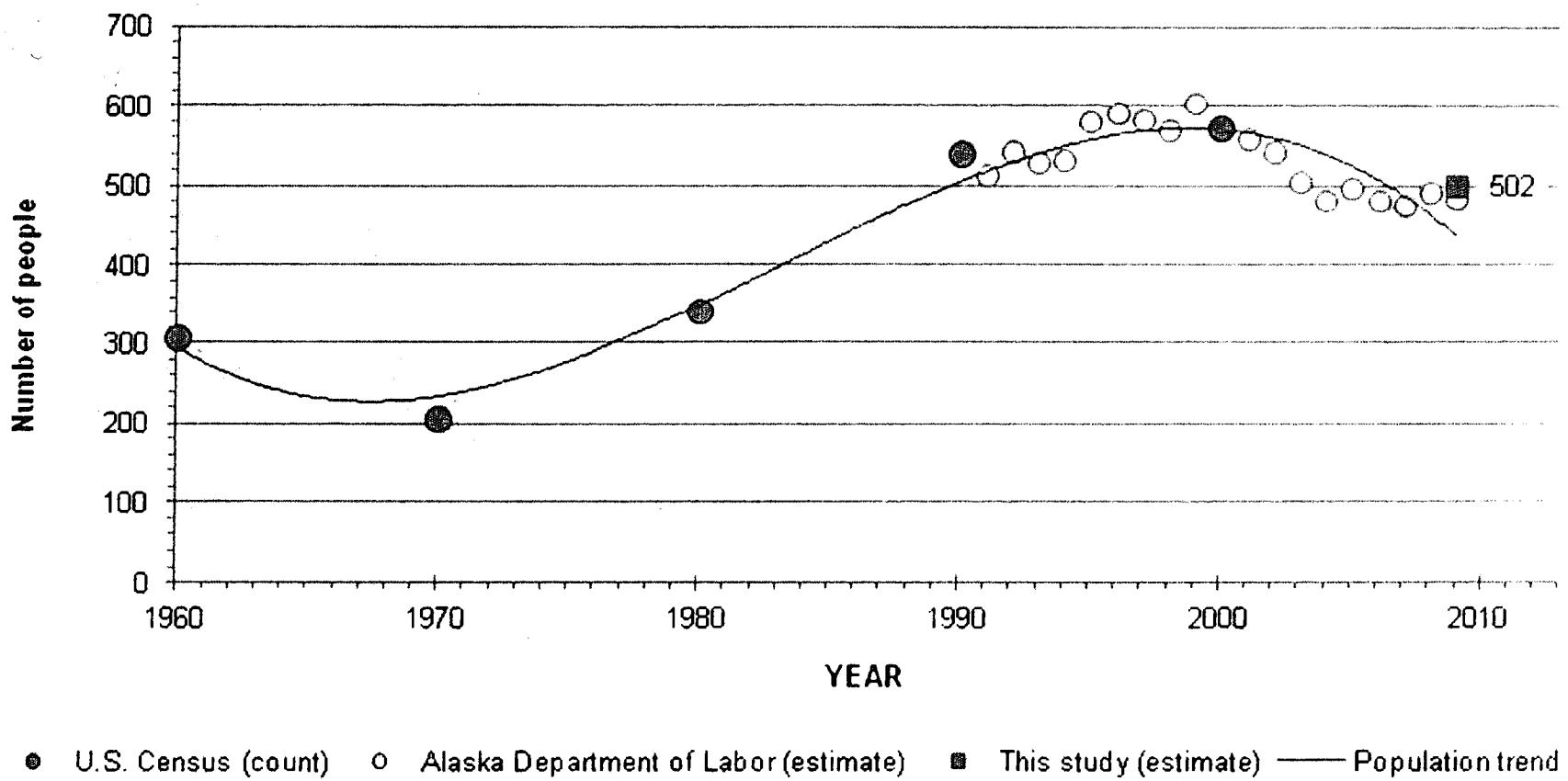
Methods: Participant Observation of Trapping in Red Devil



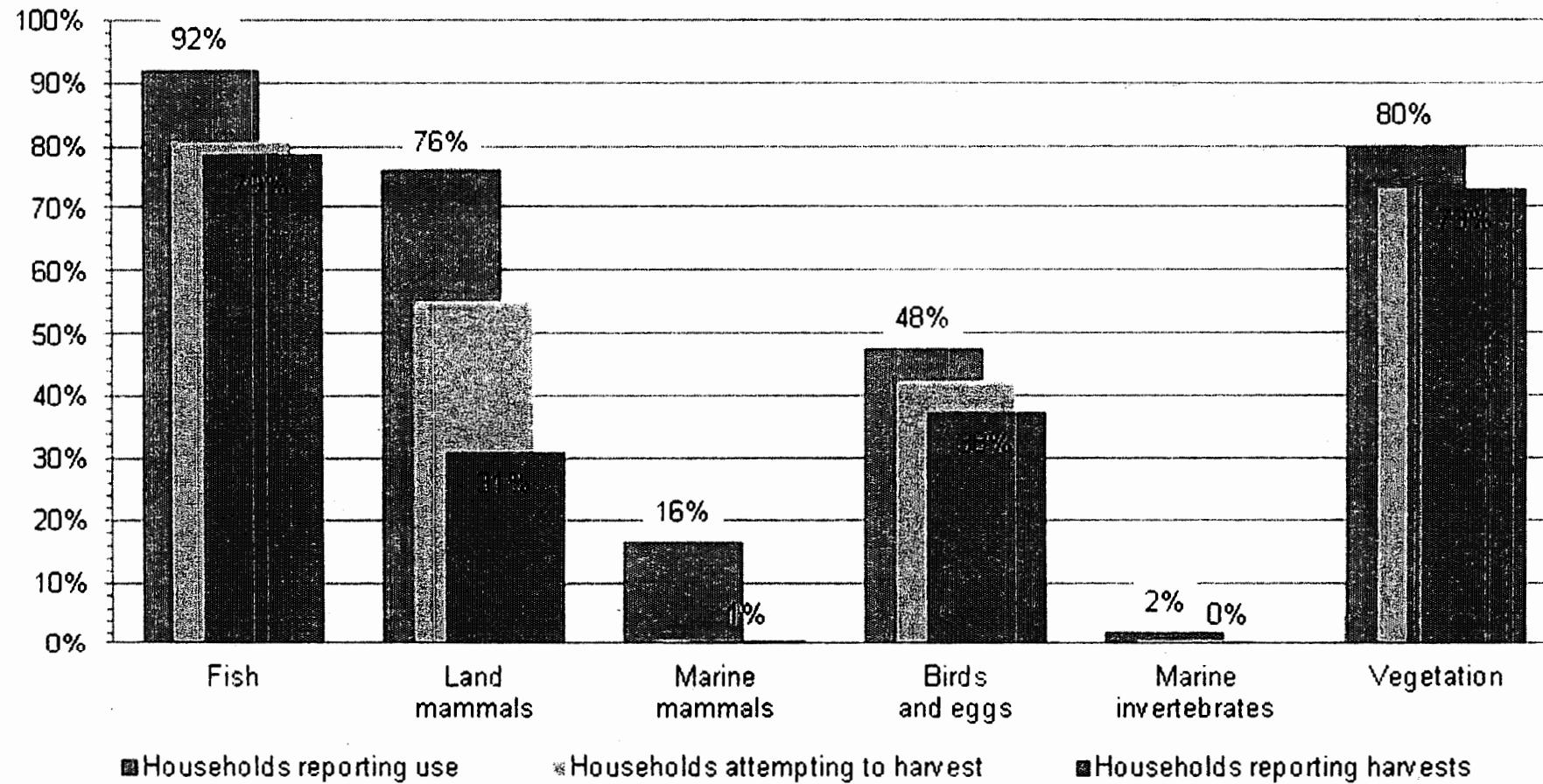
Topics in a comprehensive survey

- Demography
- Harvests and uses: using, attempting, harvesting, sharing; harvest amounts; locations of harvests
- Sources of cash (jobs and other)
- Open-ended evaluations of subsistence uses
- Food security and health impact assessment
- Networks
- Ethnographic component: timing, trends, issues

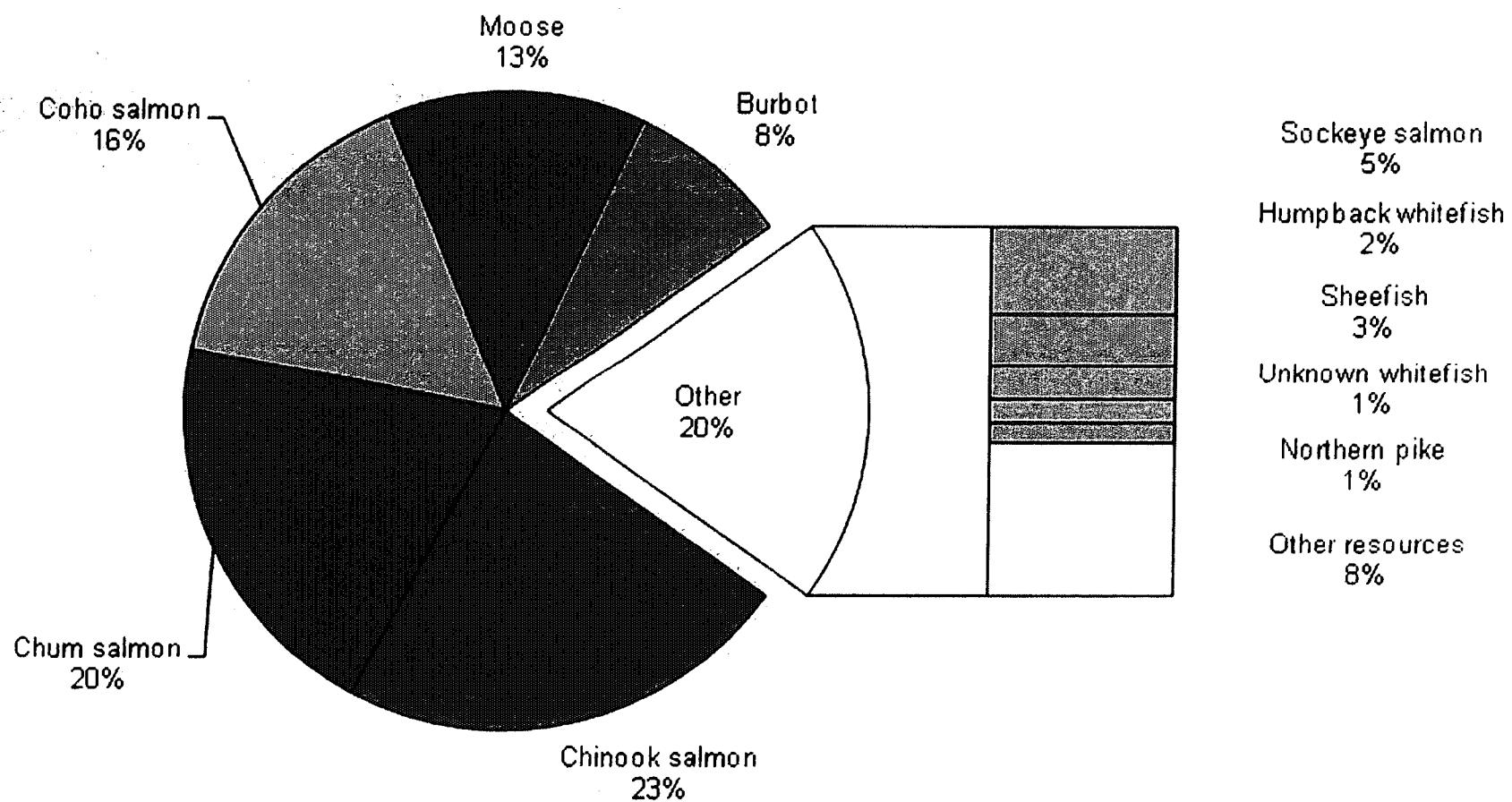
Selected “Typical” Findings: Aniak Population History



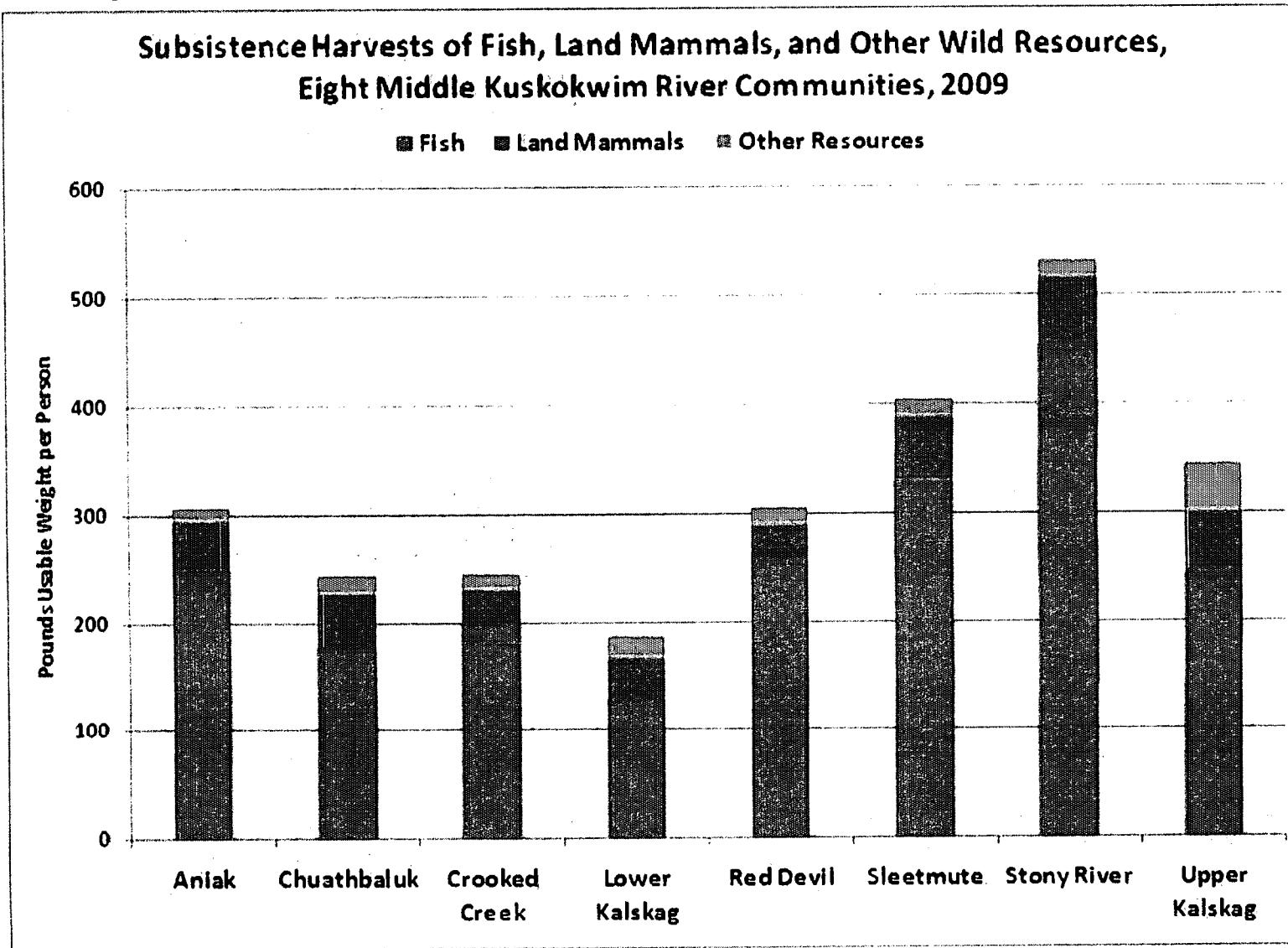
Results: Aniak: % of households using, attempting, and harvesting resources



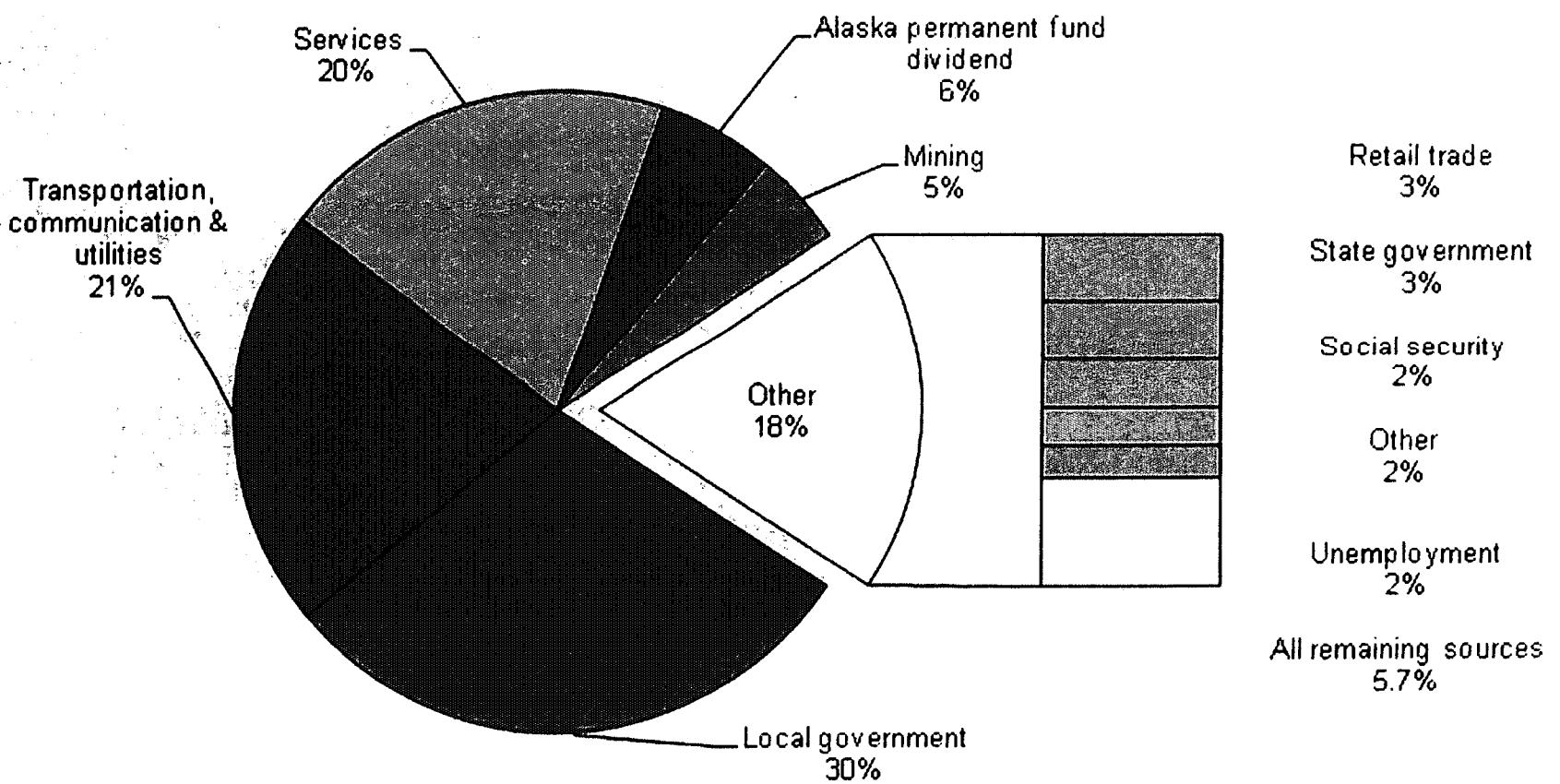
Results: Aniak's "Top Ten" Resources Harvested



Results: Donlin study communities: pounds usable weight per person



Results: Aniak: Sources of Cash



Reporting Results



- Technical Paper Series:
about 337 titles
- Special Publications
(e.g. board reports)
- Community Subsistence
Information System or
“CSIS”
- Alaska Subsistence
Fisheries Database and
annual report
- Other short
communications

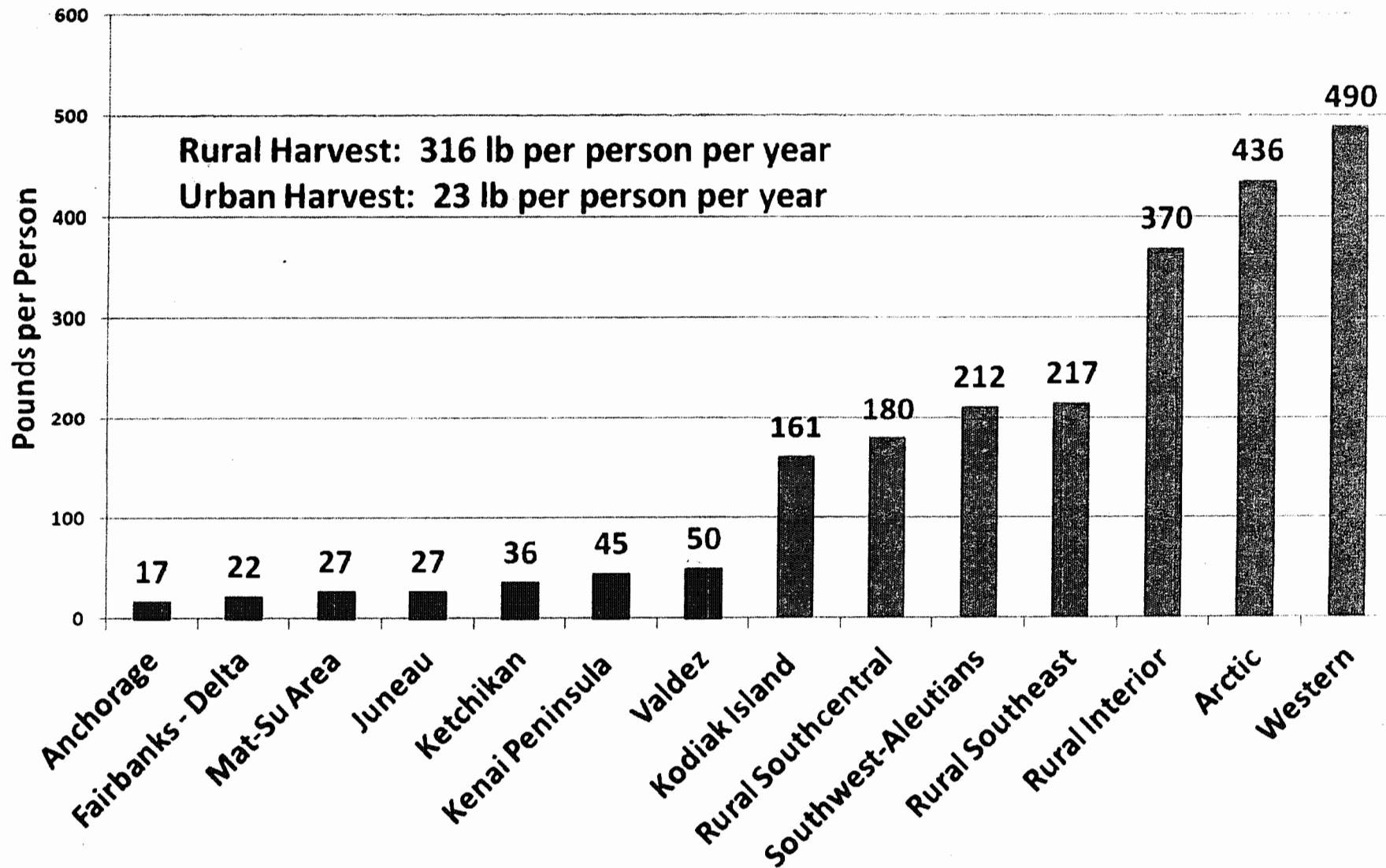
CSIS Coverage

- CSIS = Community Subsistence Information System
- US Census: 355 named communities in Alaska
- 86 in nonsubsistence areas, 269 in "rural" areas
- Of 263 rural places with a population and not a military base or industrial area, data in CSIS for 196 places (75%)
- Number of data sets in CSIS = 366 (35 more pending)
(community/year combinations)
- Number of communities, data 20 years or more old = 36%
- Development of Index Community approach

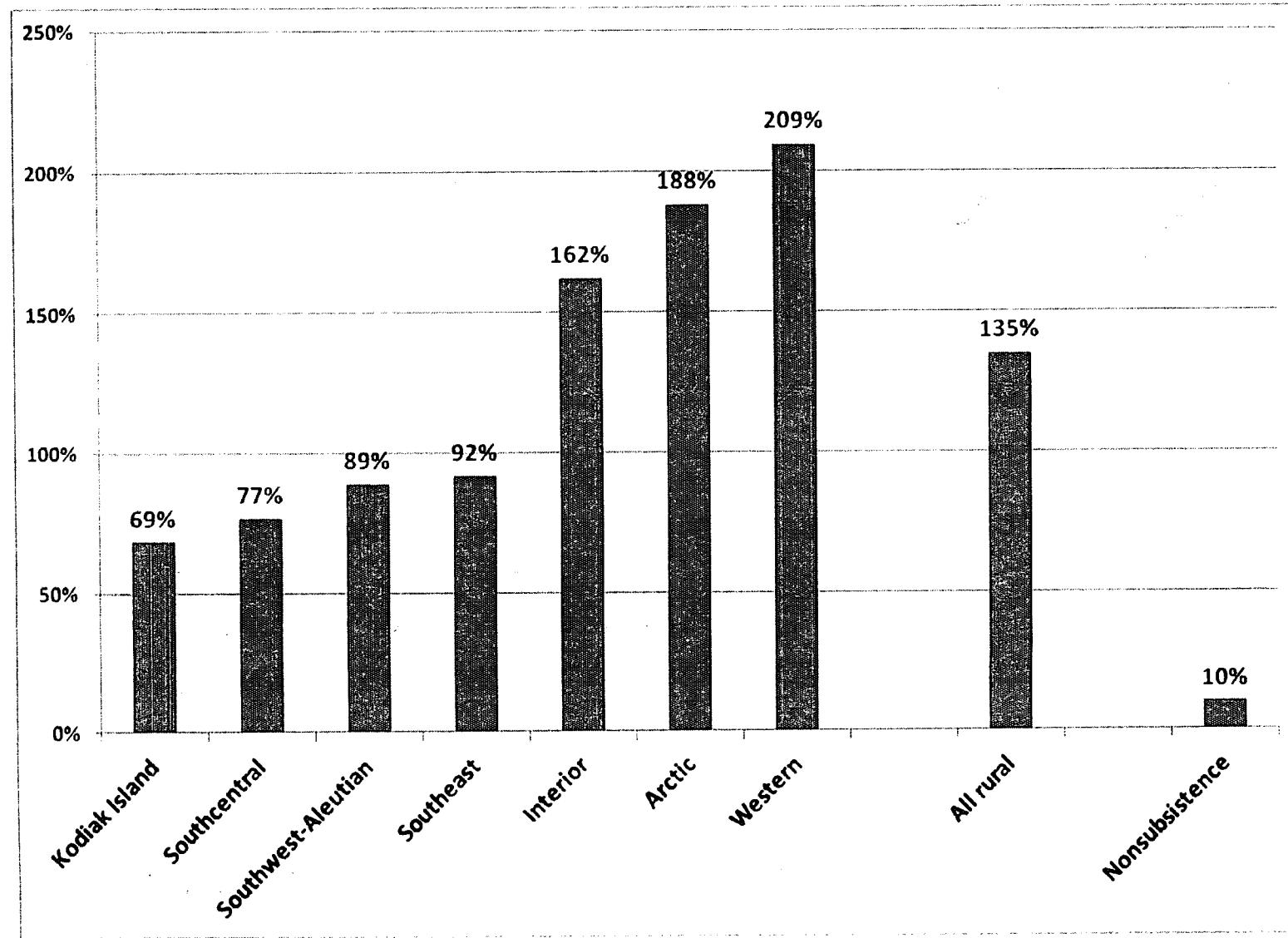
Some “Big Picture” Findings

- What are total harvest quantities in different areas of the state?
- What is the nutritional contribution of this harvest?
- What is the composition of the harvest by resource category?
- Who harvests fish and game – harvests by category of use
- Subsistence in Alaska: A Year 2010 Update

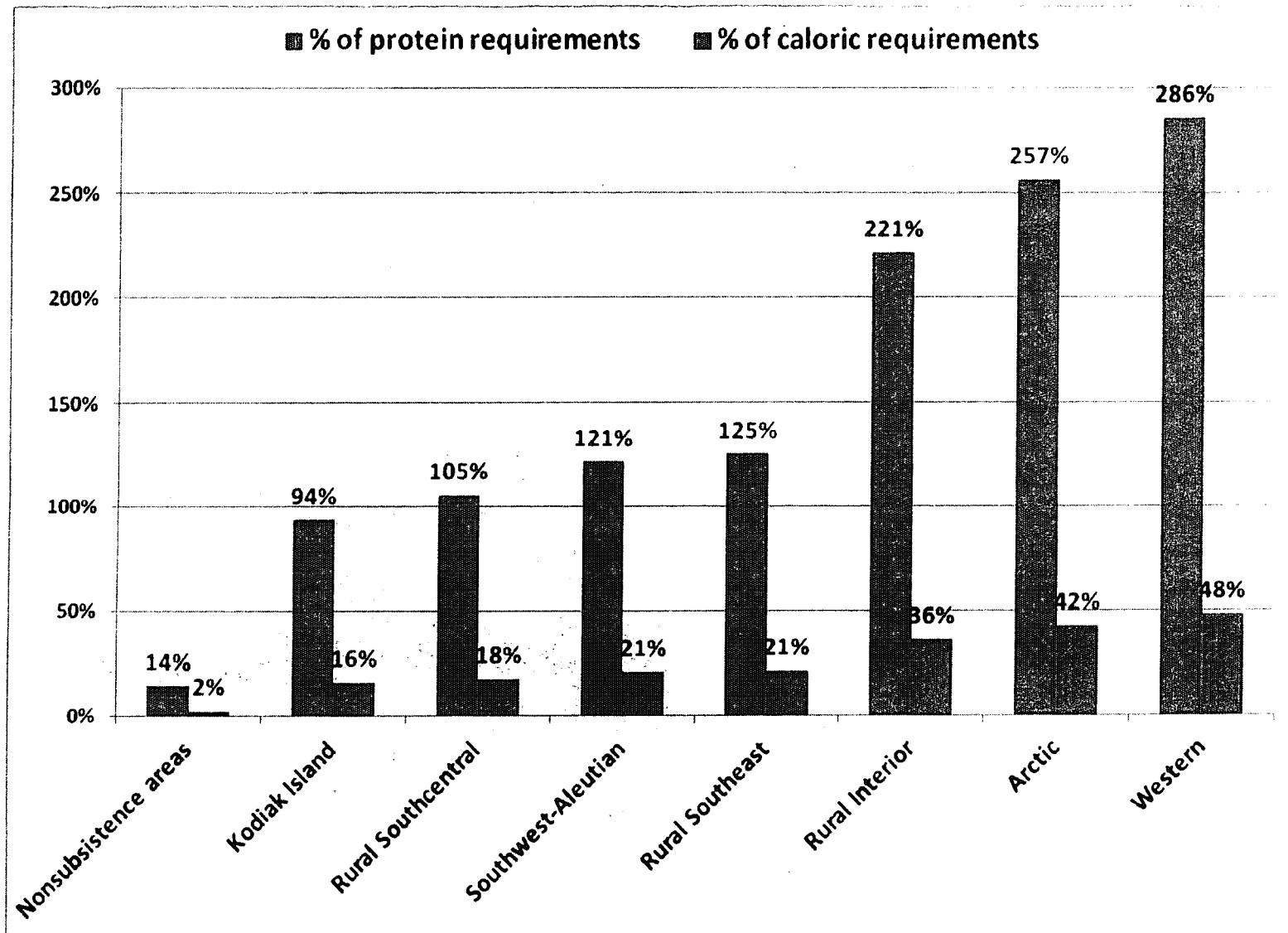
Estimated Wild Food Harvests in Alaska by Area , 2010 (lb usable weight per person per year)



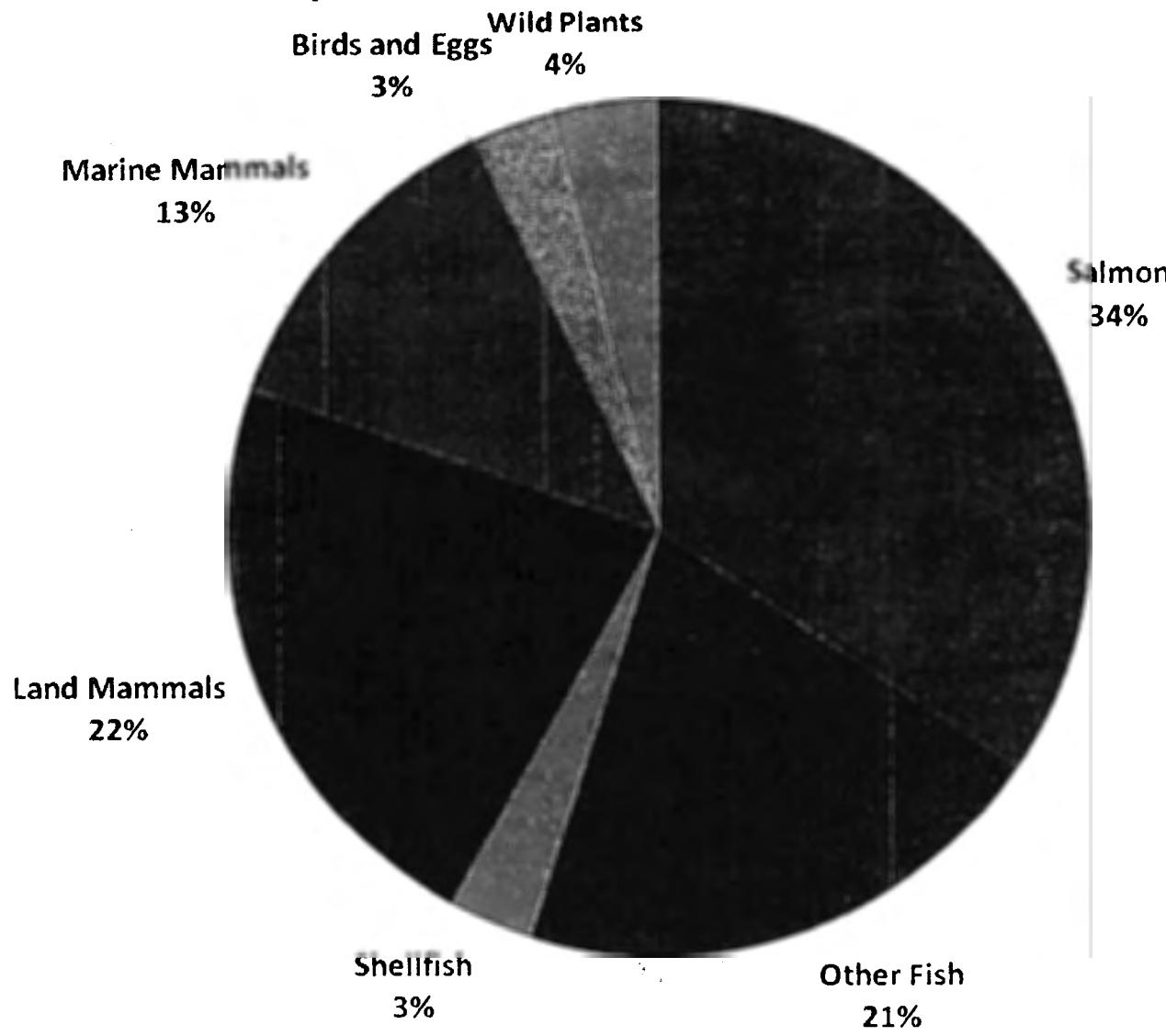
Percentage of average American consumption of meat, fish, & poultry provided by fish and wildlife harvests in Alaska



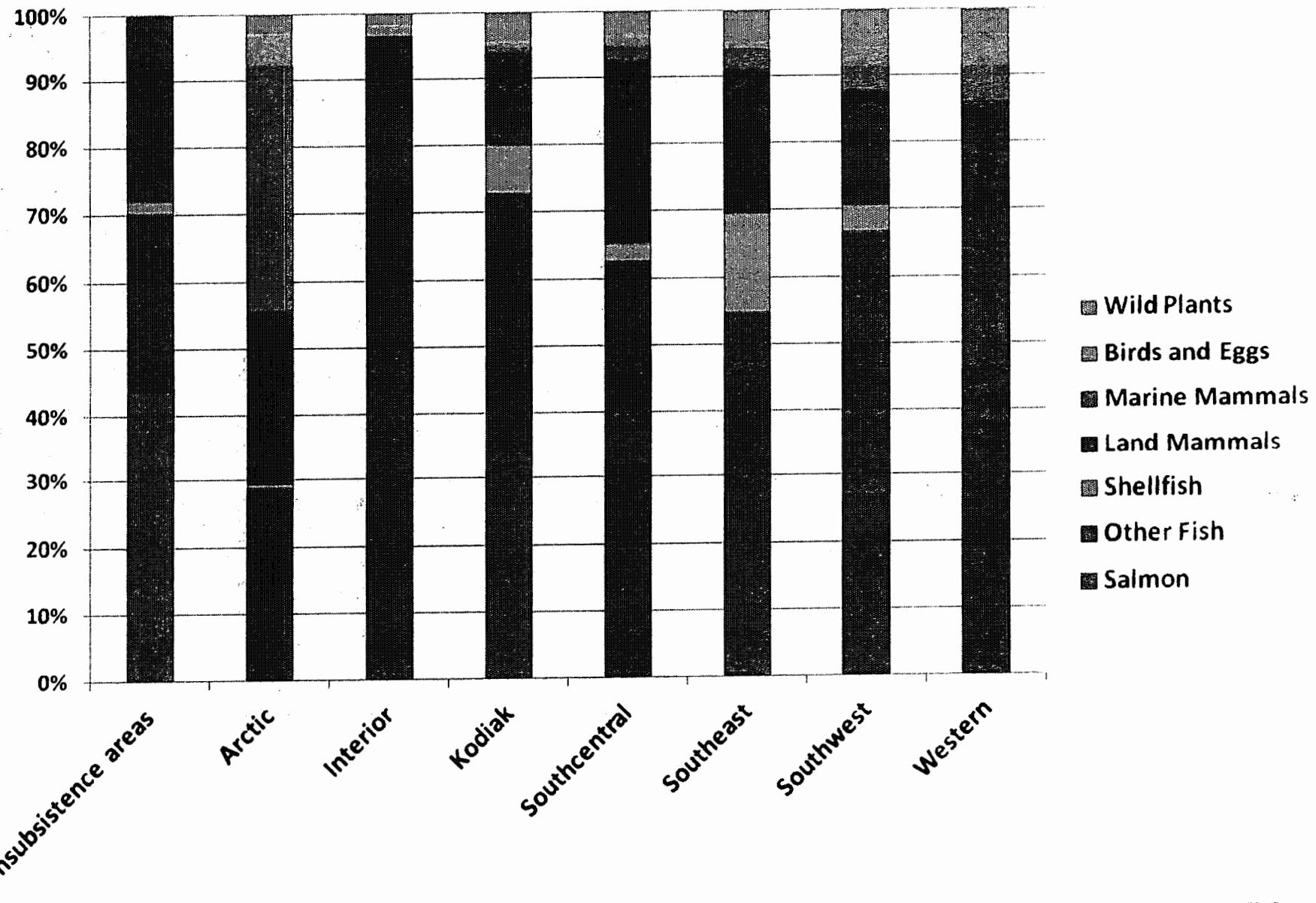
Nutritional value of fish and wildlife harvests



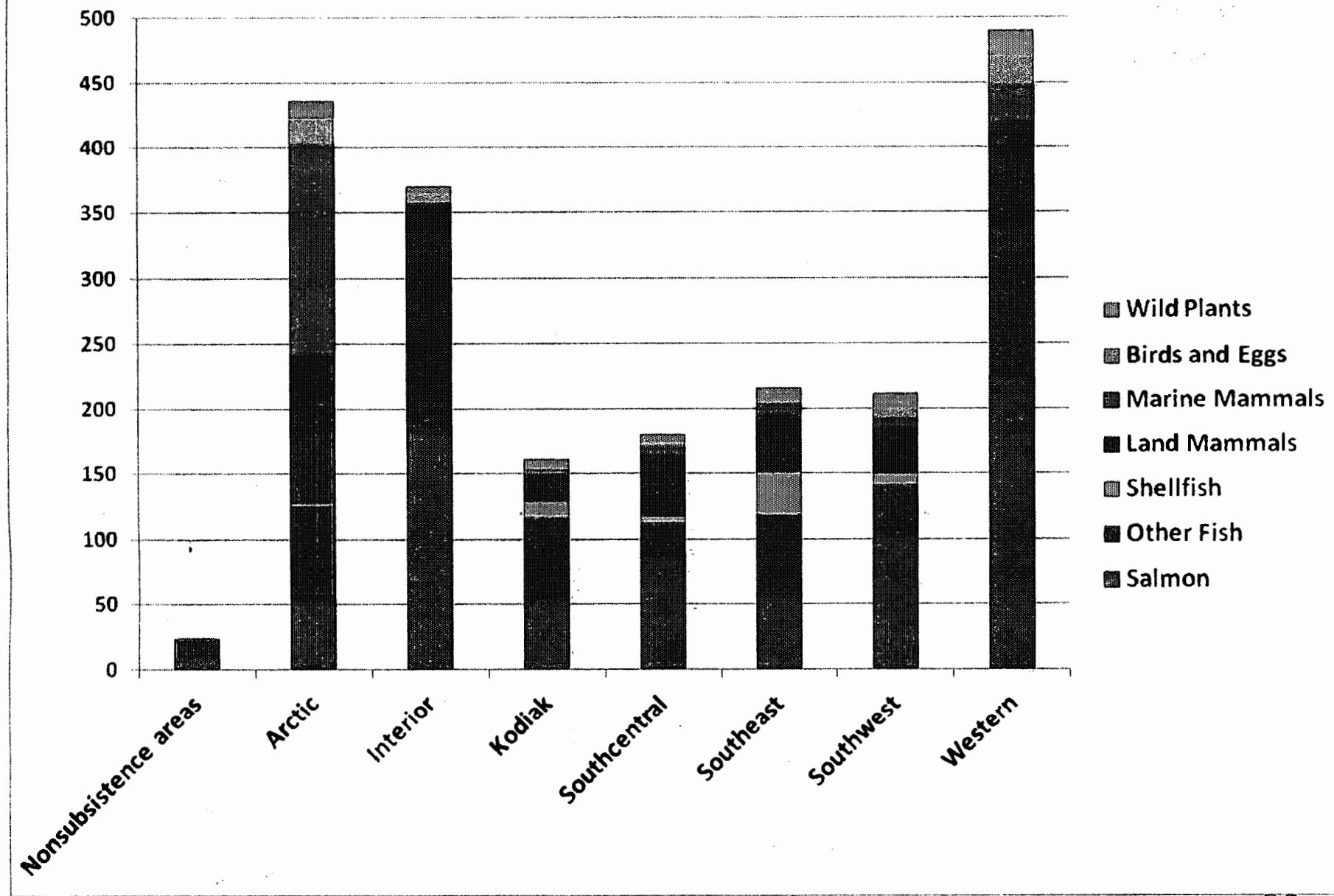
Composition of Subsistence Harvest by Rural Alaska Residents, 2010



Composition of Wild Resource Harvests by Category and Area



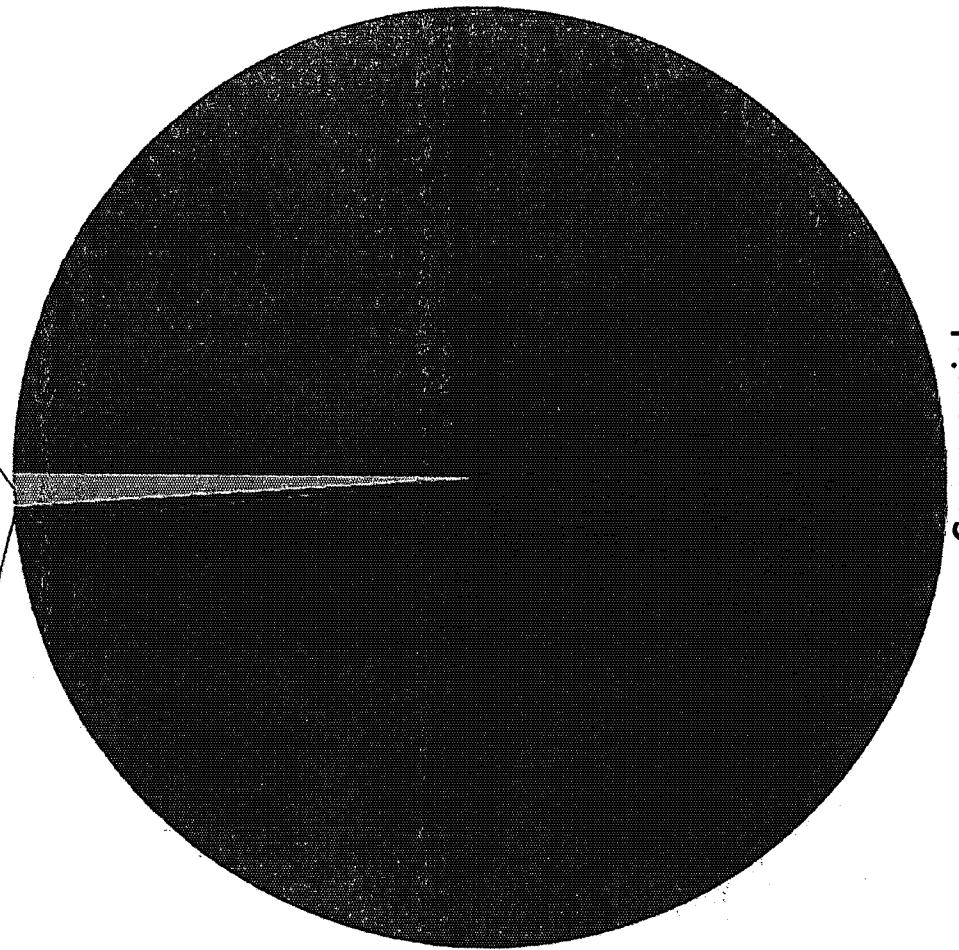
Per Capita Harvests of Wild Resources by Category and Area



Who Harvests Fish and Game?

Resource Harvests by Use in Alaska

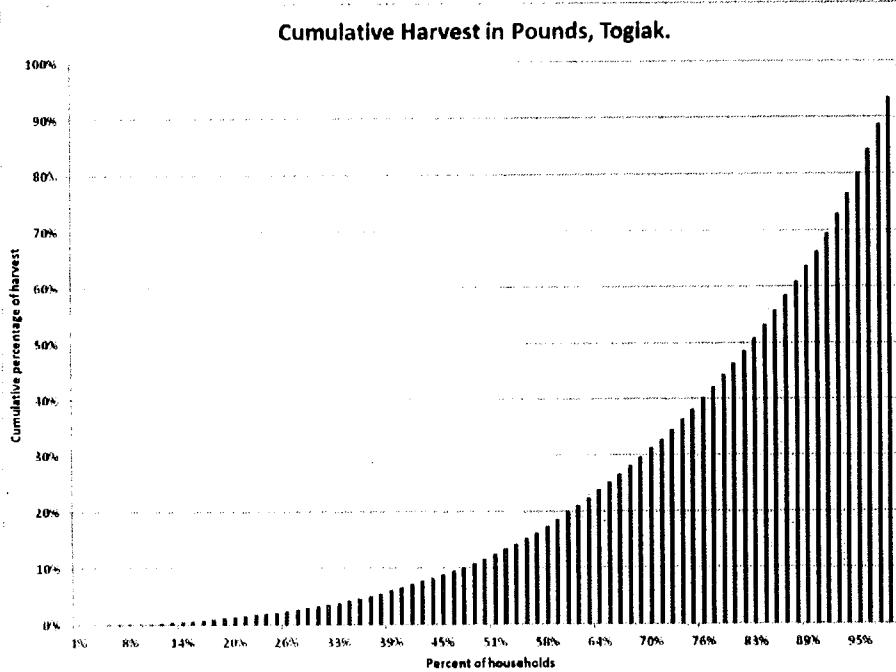
Sport Subsistence & PU
0.6% 1.1%



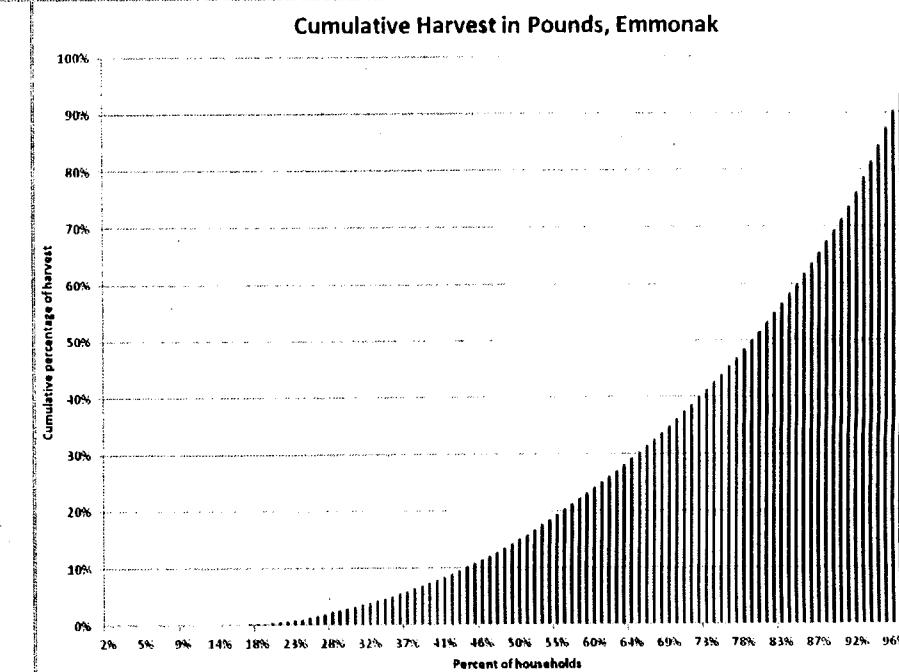
Commercial

98.3%

Other Findings: Specialization



Togiak: 70% of lb taken by 31% of HHs



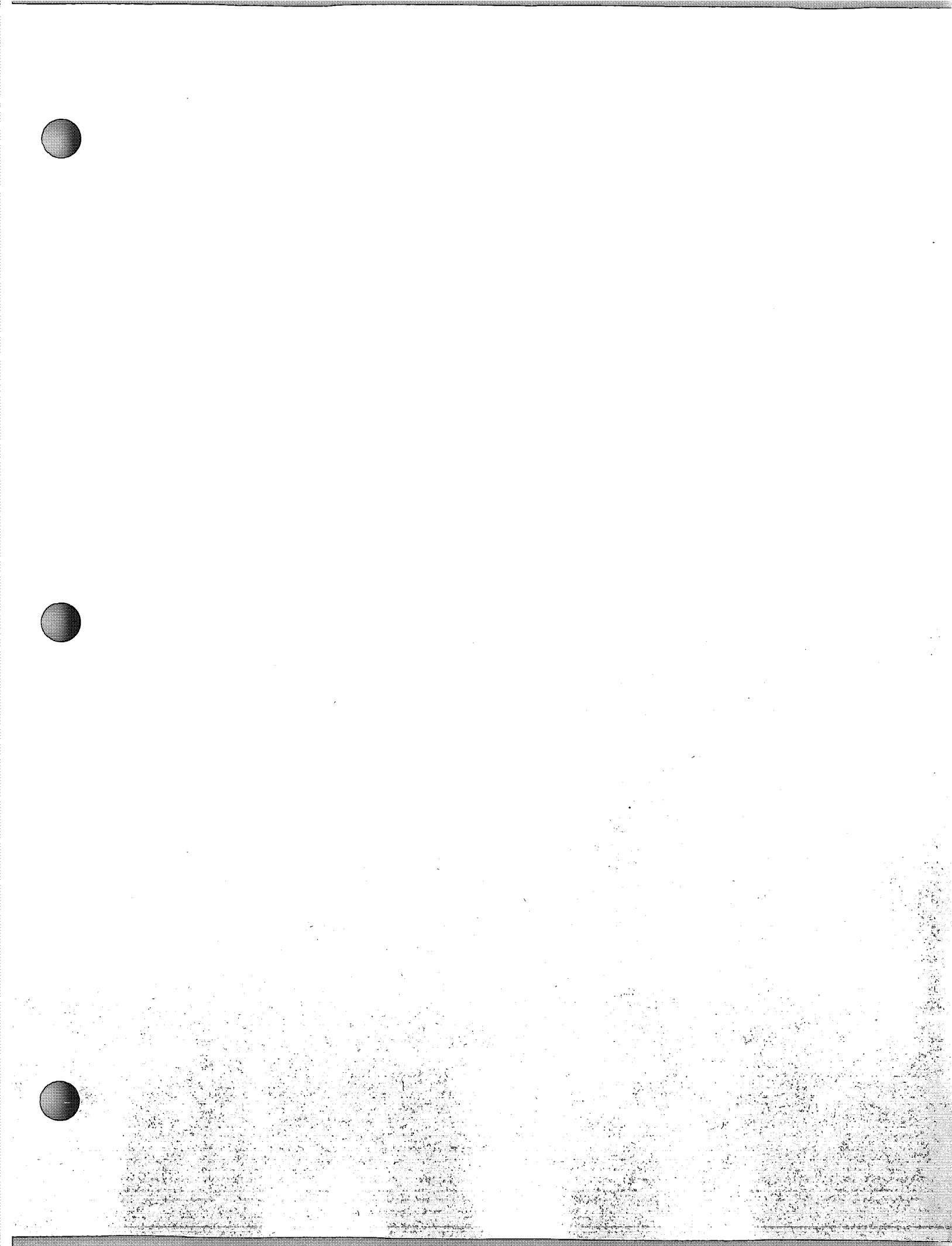
Emmonak: 70% of lb taken by 34% of HHs

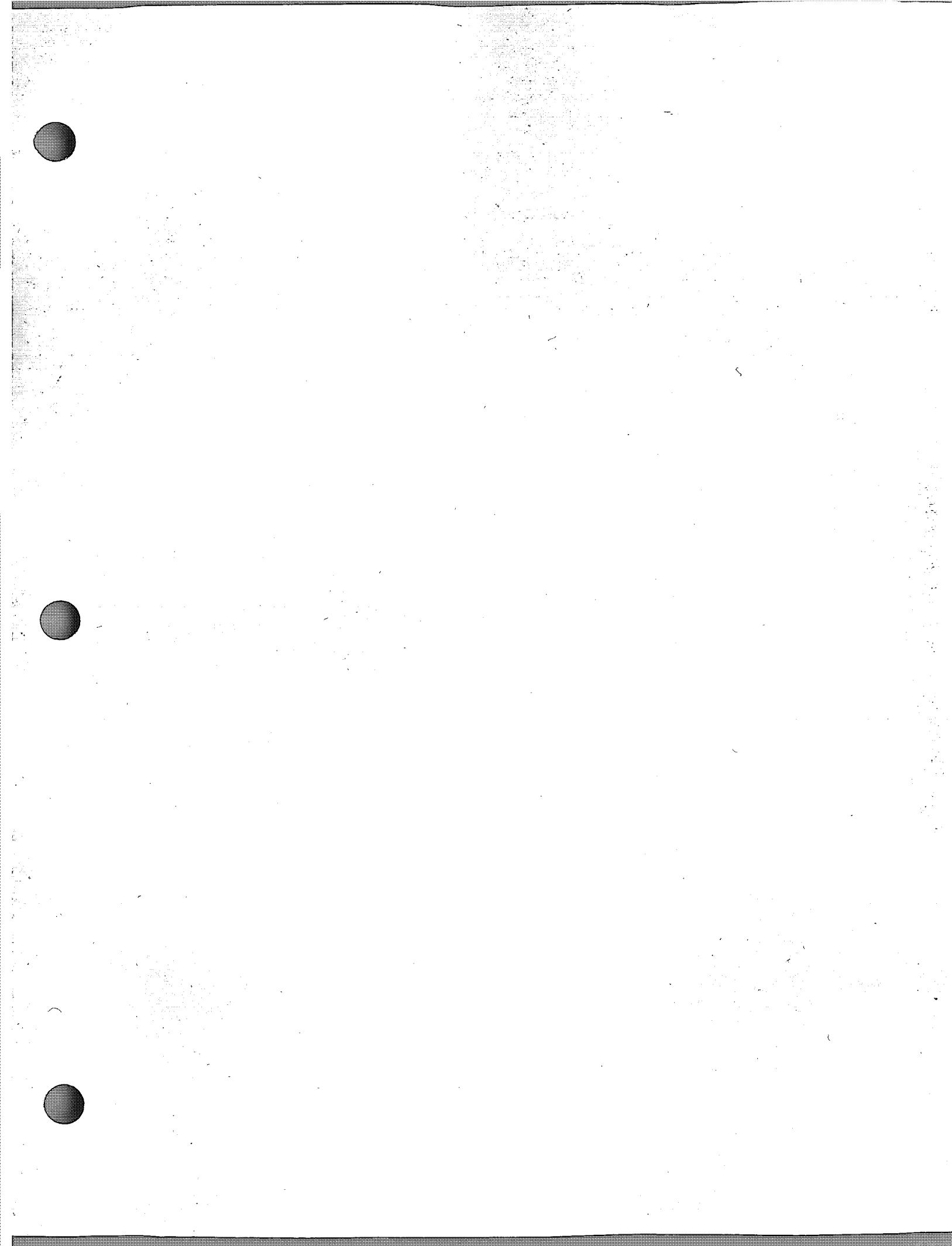
Applications of study findings

- Obligations at Board of Game and Board of Fisheries
- C&T Determinations
- ANS Findings
- Regulations that provide reasonable opportunity
- Obligations to Joint Board: nonsubsistence area findings
- Informing resource development projects
- Other applications



Questions?





Options for Alaska Board of Game Findings of Amounts Necessary for Subsistence: Furbearers

by

James A. Fall

and

Garrett Zimpelman

January 2012

Alaska Department of Fish and Game

Division of Subsistence



Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the reports by the Division of Subsistence. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft ³ /s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of) pH	
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

all commonly-accepted abbreviations e.g., Mr., Mrs., AM, PM, etc.	
all commonly-accepted professional titles e.g., Dr., Ph.D., R.N., etc.	
Alaska Administrative Code	AAC
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	\$, ¢
months (tables and figures):	first three letters (Jan., ..., Dec.)
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Measures (fisheries)

fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H _A
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2 , etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	In
logarithm (base 10)	log
logarithm (specify base)	log _b , etc.
minute (angular)	'
not significant	NS
null hypothesis	H ₀
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

SPECIAL PUBLICATION NO. BOG 2012-01

**OPTIONS FOR ALASKA BOARD OF GAME FINDINGS OF AMOUNTS
NECESSARY FOR SUBSISTENCE: FURBEARERS**

by

James A. Fall,
Alaska Department of Fish and Game, Division of Subsistence, Anchorage

and

Garrett Zimpelman
Alaska Department of Fish and Game, Division of Subsistence, Anchorage

Alaska Department of Fish and Game
Division of Subsistence
333 Raspberry Road, Anchorage, AK, 99518

January 2012

The Division of Subsistence Special Publications series was established for the publication of techniques and procedure manuals, informational pamphlets, special subject reports to decision-making bodies, symposia and workshop proceedings, application software documentation, in-house lectures, and other documents that do not fit in another publications series of the Division of Subsistence. Most Special Publications are intended for readers generally interested in fisheries, wildlife, and the social sciences; for natural resource technical professionals and managers; and for readers generally interested the subsistence uses of fish and wildlife resources in Alaska.

Special Publications are available through the Alaska Resources Library and Information Services, the Alaska State Library and on the Internet: <http://www.adfg.alaska.gov/sf/publications/>. This publication has undergone editorial and professional review.

*James A. Fall,
Alaska Department of Fish and Game, Division of Subsistence,
333 Raspberry Road, Anchorage, AK, 99518 USA*

*and
Garrett Zimpelman
Alaska Department of Fish and Game, Division of Subsistence,
333 Raspberry Road, Anchorage, AK, 99518 USA*

This document should be cited as:

Fall, J. A. and G. Zimpelman. 2012. Options for Alaska Board of Game findings of amounts necessary for subsistence: furbearers. Alaska Department of Fish and Game Division of Subsistence Special Publication No. BOG 2012-01, Anchorage.

The Alaska Department of Fish and Game (ADF&G) administers all programs and activities free from discrimination based on race, color, national origin, age, sex, religion, marital status, pregnancy, parenthood, or disability. The department administers all programs and activities in compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act (ADA) of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972.

If you believe you have been discriminated against in any program, activity, or facility please write:

ADF&G ADA Coordinator, P.O. Box 115526, Juneau, AK, 99811-5526

U.S. Fish and Wildlife Service, 4040 N. Fairfax Drive, MS 2042, Arlington, VA, 22203

Office of Equal Opportunity, U.S. Department of the Interior, 1849 C Street NW, MS 5230, Washington DC 20240

The department's ADA Coordinator can be reached via phone at the following numbers:

(VOICE) 907-465-6077, (Statewide Telecommunication Device for the Deaf) 1-800-478-3648, (Juneau TDD) 907-465-3646, or (FAX) 907-465-6078

For information on alternative formats and questions on this publication, please contact:

ADF&G Division of Subsistence at <http://www.adfg.alaska.gov/index.cfm?adfg=contacts.anchorage>.

TABLE OF CONTENTS

	Page
LIST OF TABLES.....	ii
LIST OF FIGURES.....	ii
LIST OF APPENDICES	ii
ABSTRACT	1
INTRODUCTION	1
C&T FINDINGS AND ANS DETERMINATIONS FOR FURBEARERS	2
SEASONS, BAG LIMITS, AND REPORTING REQUIREMENTS	3
OBJECTIVES AND METHODS.....	5
FINDINGS: HARVEST DATA BY SPECIES	7
Beavers.....	7
Lynx.....	7
Martens.....	10
River otters	10
Wolves.....	13
Wolverines.....	13
ANS OPTIONS	16
Option 2. ANS as a Percentage of Total Harvests by Alaska Residents.....	16
Option 3. Establish a statewide ANS range for each species.....	17
Option 4. Unit-by-unit ANS range	19
REFERENCE CITED.....	19
APPENDIX A: RC 16, ANS OPTIONS PRESENTED DURING OCTOBER 1997 BOARD OF GAME MEETING	20
APPENDIX B: CUSTOMARY AND TRADITIONAL USE WORKSHEET, FURBEARERS, BOARD OF GAME JANUARY 2000 MEETING	25

LIST OF TABLES

Table		Page
1.	Current amounts reasonably necessary findings (ANS) for furbearers.....	3
2.	Sealing requirements for furbearers.....	4
3.	Reported harvests of beavers, in numbers of animals, and percentage of harvest, by residency category, 2000–2010.....	8
4.	Reported harvests of lynx, in numbers of animals, and percentage of harvest, by residency category, 2000–2010.....	9
5.	Reported harvests of martens, in numbers of animals, and percentage of harvest, by residency category, 2000–2010.....	11
6.	Reported harvests of river otters, in numbers of animals, and percentage of harvest, by residency category, 2000–2010.....	12
7.	Reported harvests of wolves, in numbers of animals, and percentage of harvest, by residency category, 2000–2010.....	14
8.	Reported harvests of wolverines, in numbers of animals, and percentage of harvest, by residency category, 2000–2010.....	15
9.	Reported numbers harvested and estimated percentage of harvest, by Alaska residents and nonresidents, of beavers, lynx, martens, river otters, wolves, and wolverines, 2000–2010.....	16
10.	Range of reported harvests of furbearers, and mean harvests, 2000–2010.....	18

LIST OF FIGURES

Figure		Page
1.	Reported harvests of furbearers, 2000–2010.....	6
2.	Percentage of harvest of sealed furbearers by category of residence, 2000–2010.....	6
3.	Reported harvests of lynx, 2000–2010, by residency category.....	7

LIST OF APPENDICES

Appendix		Page
A.	RC 16, Customary and traditional use findings of furbearers, options for the Board of Game, 1997, presented as RC 16.....	21
B.	Customary and traditional use worksheet, furbearers, prepared for the Board of Game for their January 2000 meeting.....	26

ABSTRACT

Proposals 14 and 19, submitted to the Alaska Board of Game (BOG) for consideration at its November 2011 meeting in Barrow, would have prohibited nonresident trapping and hunting of furbearers and fur animals in selected northern Alaska game management units. The BOG tabled the proposals to their January 2012 meeting and expanded their scope to include statewide populations of furbearers and fur animals outside of nonsubsistence areas. Since there has been a positive customary and traditional (C&T) use finding for these populations, and, for most of these populations, an amount reasonably necessary for subsistence (ANS) finding of “the harvestable portion,” the BOG intends to reconsider the ANS findings at the January 2012 meeting. This report provides the BOG with background and options for adopting an ANS for these populations.

Key words: Alaska Board of Game, furbearer, fur animal, subsistence hunting, subsistence trapping, amounts necessary for subsistence, ANS, customary and traditional use finding, C&T.

INTRODUCTION

Proposals 14 and 19, submitted to the Board of Game (BOG) for consideration at its November 2011 meeting in Barrow, would prohibit nonresident trapping and hunting of furbearers and fur animals in game management units (GMUs) 18, 22, 23, and 26A. Cited as justification for the closures is the BOG finding that the entire harvestable surplus of the furbearer and fur animal populations of these GMUs is necessary for subsistence uses [called an “ANS” finding, codified at 5 AAC 99.025(a)(13)]. At its November meeting, the BOG tabled these proposals to the January 2012 meeting and expanded their scope to include statewide populations of furbearers and fur animals outside of nonsubsistence areas. The BOG’s intent is to re-examine all findings for furbearers and fur animals for which the current ANS is the “harvestable portion.” This report provides background and options for that re-examination.

Furbearing species have been used in Alaska since human habitation began, at least 10,000 years ago (Langdon 1993:6-7). Uses have always been varied, including food (selected species only); raw materials for clothing, tools, and crafts; and trade.

Alaska statute (AS) 16.05.258(a) directs the BOG to identify game populations, or portions of populations, that are customarily and traditionally taken or used for subsistence, except for those populations within nonsubsistence areas (which are defined in 5 AAC 99.015). This is called a “C&T finding.” Additionally, the BOG must determine the amount of the harvestable portion of populations with customary and traditional uses that is reasonably necessary for subsistence uses [AS 16.05.258(b)].

“Subsistence uses” are defined in AS 16.05.940(33) as:

the noncommercial, customary and traditional uses of wild, renewable resources by a resident . . . of the state for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation, for the making and selling of handicraft articles out of nonedible by-products of fish and wildlife resources taken for personal or family consumption, and for the customary trade, barter, or sharing for personal or family consumption...

Customary trade is defined in AS 16.05.940(8) as:

the limited noncommercial exchange, for minimal amounts of cash, as restricted by the appropriate board, of fish or game resources; the terms of this paragraph do not restrict money sales of furs and furbearers.

Regulations classify marmots, martens, mink, muskrats, river otters, and weasels as furbearers, which may only be taken under trapping regulations with a trapping license. Beavers, coyotes, foxes (red and arctic), lynx, and squirrels (red, ground, and flying) are classified as both furbearers and fur animals, meaning they may be taken, as authorized, under trapping and hunting regulations. Wolves and

wolverines are classified as both furbearers and big game, meaning they, too, may be taken, as authorized, under trapping and hunting regulations. In this report, “furbearers” refers to species classified solely as furbearers as well as those that are classified as furbearers and as either fur animals or big game.

In 2010, the BOG classified black bears as a furbearer, in addition to their classification as a big game animal. The BOG has not adopted trapping regulations for black bears; therefore, this report does not address black bears.

C&T FINDINGS AND ANS DETERMINATIONS FOR FURBEARERS

In 1997, the BOG directed the department to develop a statewide proposal for considering whether there were customary and traditional uses of furbearers and fur animals. The department presented options for these C&T findings at the October 1997 BOG meeting (as RC 16, see Appendix A). At the January 2000 statewide BOG meeting, the department presented a customary and traditional use worksheet (Appendix B). Action was deferred to the March 2000 meeting, and subsequently to the November 2000 meeting, when the BOG found that “all resident uses of furbearers and fur animals are customary and traditional uses” [5 AAC 99.025(a)(13)] outside the nonsubsistence areas.

The statewide furbearer and fur animal C&T finding included: beavers, coyotes, arctic foxes, red foxes, lynx, marmots,¹ martens², mink, muskrats, river otters, red squirrels, flying squirrels, ground squirrels, least weasels, short-tailed weasels, wolves, and wolverines.

In November 2000, the BOG found that furbearers pose particular complexities for establishing a single ANS because there are 4 types of common subsistence uses of furbearers:

1. Food – certain furbearers are eaten (e.g., beavers, muskrats, ground squirrels),
2. Clothing,
3. Handicrafts that are sold, and
4. Fur sales to fur buyers, an example of customary trade per state statute (see above).

The BOG recognized that furbearer harvests, and consequently ANS, vary substantially with fur prices, and determined that amounts of specific uses could be established in the future on a case by case basis when specific allocation issues between subsistence, general, and nonresident trapping (and fur animal hunting) required it. The BOG also found

that furbearers and fur animals, in general, tend to be the focus of these uses, rather than users focusing on individual species or populations. Given this finding, the board also finds that effort on any given population varies according to its harvestable surplus. [5 AAC 99.025(a)(13)]

Meeting records also indicate that this general finding was consistent with the presumption that existing regulations (as of November 2000) provided reasonable opportunities for subsistence uses, until the BOG received regulatory proposals suggesting otherwise.

1. Marmots in Alaska include the hoary marmot (*Marmota caligata*), the Alaska marmot (*M. broweri*), and the woodchuck (*M. monax*; Curby, C. and A. Gunderson. [2008]. Marmot. [Alaska Wildlife Notebook Series], revised by Craig Gardner and reprinted 2008. ADF&G [Juneau] <http://www.adfg.alaska.gov/static/education/wns/marmot.pdf>, accessed 12/2011. Hereinafter cited as Curby and Gunderson 2008). The C&T and ANS findings at 5 AAC 99.025(a)(13)(E) and the furbearer trapping regulations at 5 AAC 84.270(12) refer to “marmot.” This should be understood to refer to the 3 species of marmots in Alaska.

2 There are 2 species of martens in Alaska. The American marten (*Martes americana*) is the most common. In Alaska, the Pacific marten (*M. caurina*) is found only on Admiralty (GMU 4) and Kuiu (GMU 3) islands. The C&T and ANS findings at 5 AAC 99.025(a)(13)(F) and the furbearer trapping regulations at 5 AAC 84.270(6) refer to “marten;” this should be understood to refer to the 2 species of martens in Alaska.

Therefore, the BOG declined to establish specific ANS ranges for furbearers and fur animals at the November 2000 meeting. Current (as of January 2012) ANS findings are listed in Table 1. For all furbearers but wolves, the BOG established, in November 2000, the ANS as “the harvestable portion” of the populations of all units with C&T uses [all units except those within nonsubsistence areas; 5 AAC 99.025(a)(13)]. For wolves, the BOG has established ANS ranges for 9 units or subunits. For the remaining units, the ANS for wolves is, as with other furbearers, “the harvestable portion” [5 AAC 99.025(a)(11) and (13)].

Table 1.—Current amounts reasonably necessary findings (ANS) for furbearers.

Species	Unit ³	ANS Finding
Beaver	All units with a harvestable portion	Harvestable portion
Coyote	All units with a harvestable portion	Harvestable portion
Fox (red and Arctic)	All units with a harvestable portion	Harvestable portion
Lynx	All units with a harvestable portion	Harvestable portion
Marmot ¹	All units with a harvestable portion	Harvestable portion
Marten ²	All units with a harvestable portion	Harvestable portion
Mink	All units with a harvestable portion	Harvestable portion
Muskrat	All units with a harvestable portion	Harvestable portion
River otter	All units with a harvestable portion	Harvestable portion
Squirrel (red, ground, flying)	All units with a harvestable portion	Harvestable portion
Weasel (short-tailed and least)	All units with a harvestable portion	Harvestable portion
Wolf	Unit 9	10 to 28
Wolf	Unit 10 - Unimak Island only	0 to 1
Wolf	Unit 11	5 to 10
Wolf	Unit 13	8 to 24
Wolf	Unit 16B	0 to 5
Wolf	Unit 18*	5 to 20
Wolf	Unit 22*	5 to 20
Wolf	Unit 23*	10 to 30
Wolf	Unit 26A*	4 to 8
Wolf	All other units with a harvestable portion	Harvestable portion
Wolverine	All units with a harvestable portion	Harvestable portion

Source 5 AAC 99.025

1. Marmots in Alaska include the hoary marmot (*Marmota caligata*), the Alaska marmot (*M. broweri*) and the woodchuck (*M. monax*; Curby and Gunderson 2008).

2 Martens in Alaska include the American marten (*Martes americana*) and the Pacific marten (*M. caurina*).

3 In all cases, excludes nonsubsistence areas as defined in 5 AAC 99.015.

* Finding made at November 2011 Board of Game meeting, Barrow.

SEASONS, BAG LIMITS, AND REPORTING REQUIREMENTS

5 AAC 84.270 sets out seasons and bag limits for furbearers by GMU. Outside the nonsubsistence areas, the only furbearer bag limit currently in place is 30 beavers per season in GMU 8 (Kodiak Island). 5 AAC 85.056(a) sets seasons and bag limits for hunting wolves as big game. 5 AAC 85.057(a) sets

seasons and bag limits for hunting wolverines as big game. 5 AAC 85.060 sets hunting seasons and bag limits for fur animals.

Harvest reporting requirements are in place for 6 species of furbearers: beavers (selected units), lynx, martens (selected units), river otters, wolves, and wolverines (Table 2). For these species, all harvests must be sealed by an authorized representative of ADF&G. There are no reporting requirements for coyotes, foxes, marmots, mink, muskrats, squirrels, and weasels, and for beavers and martens in selected units. Therefore, time-series data on annual statewide harvests by all users (including nonresidents) are available only for the 4 species with statewide sealing requirements, while time-series data covering much of the state are available for 2 species with partial sealing requirements. Harvest data for selected years for selected communities for furbearers are also available from household surveys conducted by the Division of Subsistence and summarized in technical papers and the Community Subsistence Information System database³. These data were not used to develop the ANS options presented here due to the statewide scope of proposals 14 and 19.

Table 2.—Sealing requirements for furbearers.

Species	Sealing required
Fur animal/furbearers	
Beaver	Yes, in GMUs 1–11, 13–15, 17 only
Coyote	No
Fox (red and arctic)	No
Lynx	Yes, all units
Squirrel (red, ground, flying)	No
Big game/furbearers¹	
Wolf	Yes, all units
Wolverine	Yes, all units
Other furbearers	
Marmot	No
Marten	Yes, in GMUs 1–7, 14–16 only
Mink	No
Muskrat	No
River otter	Yes, all units
Weasel (short-tailed and least)	No

1. Although black bears are classified as furbearers, there are currently no regulations authorizing the trapping of black bears.

³ <http://www.adfg.alaska.gov/sb/CSIS/>

OBJECTIVES AND METHODS

This report has 2 objectives:

1. Compile data on reported harvests of populations of furbearers outside the nonsubsistence areas by area of residence of the harvesters, based on ADF&G sealing records.
2. Use these harvest data to develop options for ANS findings.

As noted above, annual harvest data through sealing records are available only for 6 species: beavers, lynx, martens, river otters, wolves, and wolverines. For these species, data for 11 years (2000–2010) have been compiled, based on reported harvests from sealing records in the department's WinfoNet database. Each annual total consists of reported harvests only. Reported totals for each year are summarized by 5 categories:

1. Harvests by residents of the unit ("local residents"),
2. Harvests by other Alaska residents ("nonlocal residents"),
3. Harvests by Alaska residents whose specific place of residence is unknown,
4. Harvests by nonresidents of Alaska ("nonresidents"), and
5. Harvests by individuals of unknown residency status.

The total harvests for categories 1 through 3 represent harvests by Alaska residents. Reported harvests for each species appear in tables 3 through 8 and figures 1 and 2. These totals exclude harvests in nonsubsistence areas: GMUs 7, 14, 15, 16A, and a portion of 20. Due the limited time available to conduct this analysis, the small portions of GMU 1 in the Juneau and Ketchikan nonsubsistence areas were not excluded from the totals, and any harvests in the small portion of Unit 15 that is outside the nonsubsistence area were not included. These harvests are unlikely to significantly affect the ANS options presented here. Further, the totals for wolves do not include reported harvests in units for which ANS ranges have been established (see Table 1), nor do they include wolves taken as part of predation control programs. Uniform coding units (UCUs) within GMU 20 that are within the Fairbanks Nonsubsistence Area were excluded.

For each species, reported harvests were sorted by place of residence as follows. Harvests by "local residents" include harvests by people living in the GMU in which the harvest took place. Harvests by "nonlocal residents" include harvests by other Alaska residents who live outside of the GMU in which the harvest took place. A small number of harvests by Alaska residents could not be linked to a specific Alaska community. The sum of harvests by local residents, nonlocal residents, and Alaska residents with an unknown community of residence is the total Alaska resident harvest. The fourth category is harvests by non-Alaska residents. There also were a small number of harvests that could not be attributed to a residence category. These were not included in the percentages of harvests by residence category or ranges of harvests upon which the ANS options are based.

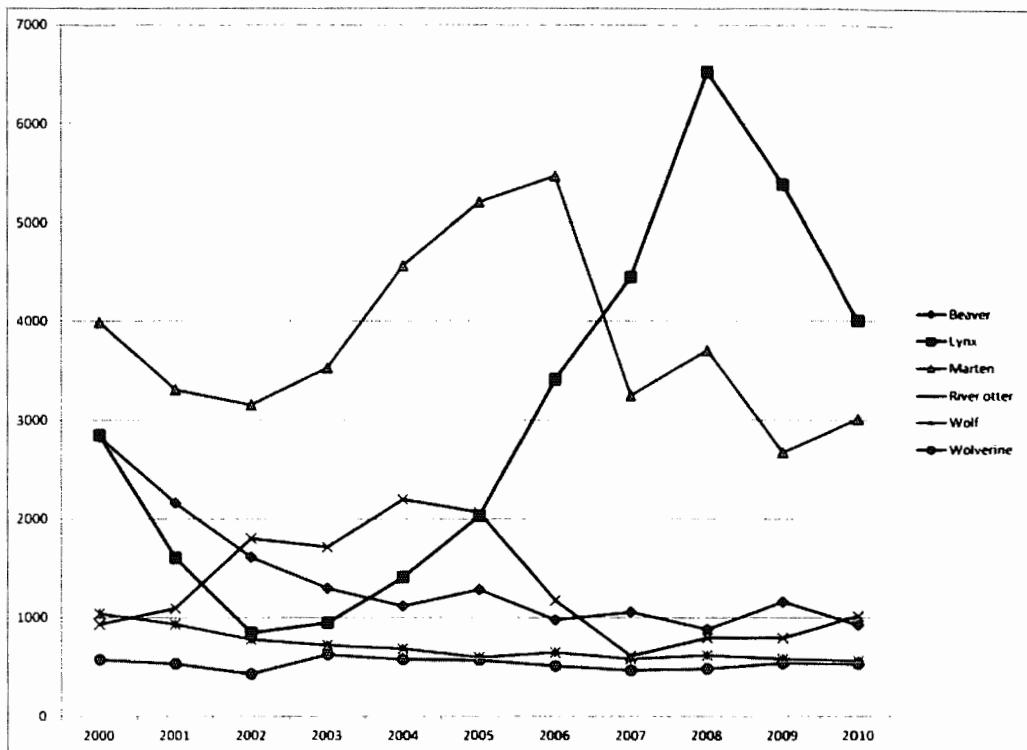


Figure 1.—Reported harvests of furbearers, 2000–2010.

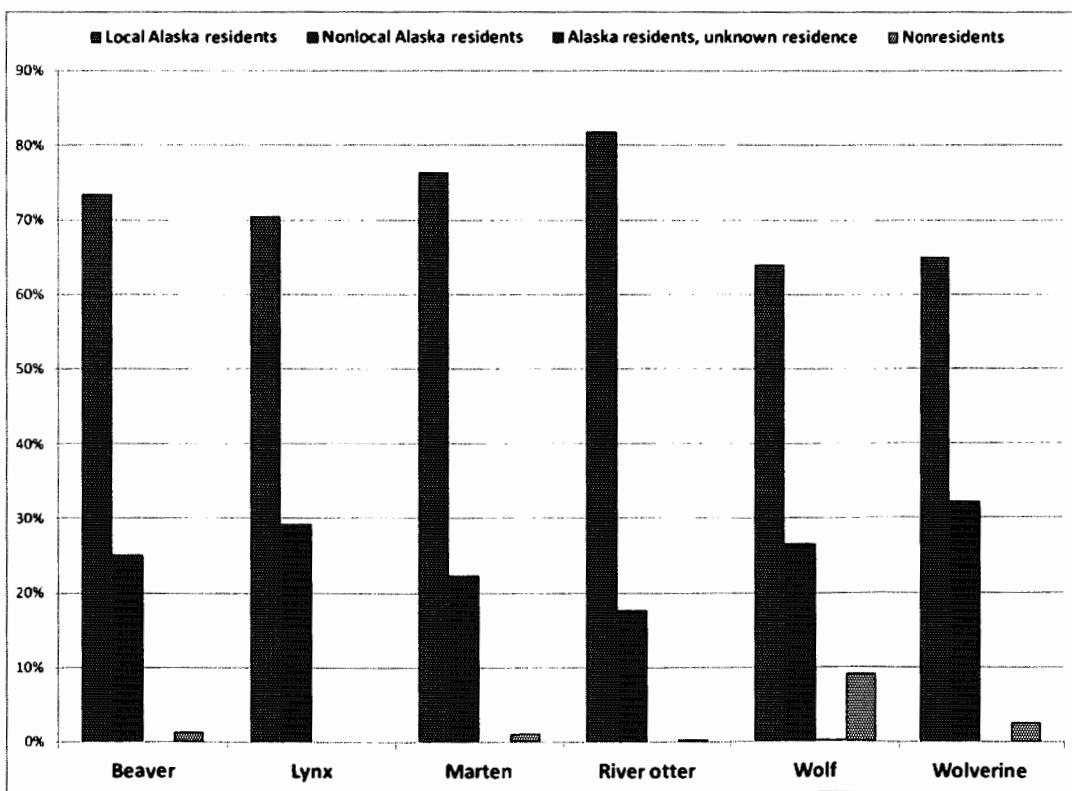


Figure 2.—Percentage of harvest of sealed furbearers by category of residence, 2000–2010.

FINDINGS: HARVEST DATA BY SPECIES

BEAVERS

Between 2000 and 2010, 15,317 beavers were sealed from areas outside the nonsubsistence areas (excluding GMUs 12, 16, and 18–26, where sealing is not required), or 1,393 per year (Table 3). Harvests ranged from a low of 883 in 2008 to a high of 2,836 in 2000. There is a downward trend in harvests over the 11 year period (Figure 1). Deleting harvests for which the residency of the harvester is unknown, local residents accounted for 73.4% of the harvest and nonlocal residents 25.1%, for 98.6% by Alaska residents. Nonresidents took 1.4% of the beaver harvest over the 11-year period, or about 20 per year (Figure 2).

LYNX

Between 2000 and 2010, 33,472 lynx were sealed from areas outside the nonsubsistence areas, or 3,043 per year (Table 4). Harvests ranged from a low of 848 in 2002 to a high of 6,524 in 2000. Harvests show a cyclic pattern probably reflecting the cycle of lynx populations (Figure 2, Figure 3). Deleting harvests for which the residency of the harvester is unknown, local residents accounted for 70.5% of the harvest, nonlocal residents 29.3%, and Alaskans with unknown residency 0.1%, for 99.9% by Alaska residents. Nonresidents took 0.1% of the lynx harvest over the 11-year period, or about 4 per year (Figure 1).

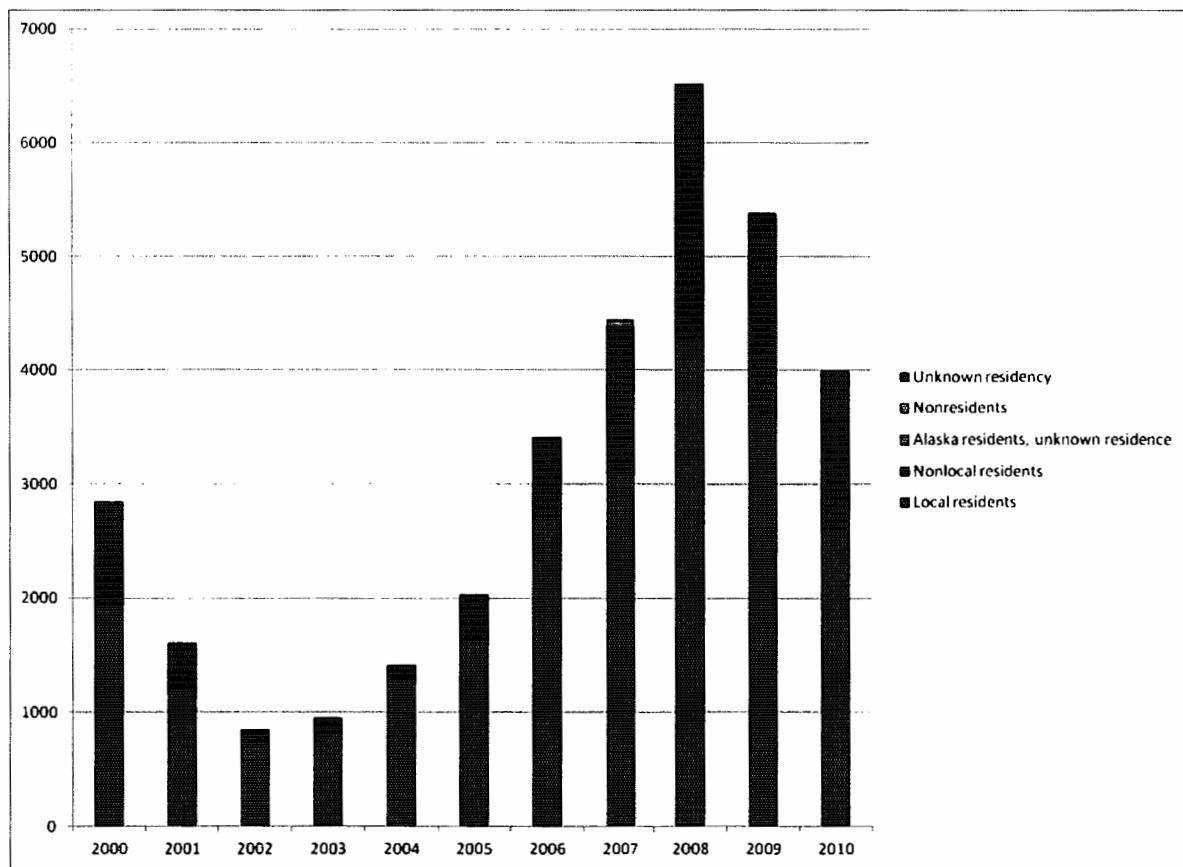


Figure 3.—Reported harvests of lynx, 2000–2010, by residency category.

Table 3.—Reported harvests of beavers, in numbers of animals, and percentage of harvest, by residency category, 2000–2010.

	Beavers, number reported											Grand total	Annual mean
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010		
Local harvest	2,258	1,643	1,035	901	808	815	696	834	679	913	667	11,249	1,022.6
Nonlocal harvest	551	467	575	373	270	440	277	211	196	237	251	3,848	349.8
Unknown state resident	0	0	0	0	0	0	0	0	0	1	0	1	0.1
Subtotal, all state residents	2,809	2,110	1,610	1,274	1,078	1,255	973	1,045	875	1,151	918	15,098	1,372.5
Nonresident harvest	27	53	3	25	41	31	2	14	8	6	9	219	19.9
Unknown resident harvest	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Total harvest	2,836	2,163	1,613	1,299	1,119	1,286	975	1,059	883	1,157	927	15,317	1,392.5
Percentage of harvest (known residency only)													
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Annual mean	
Local harvest	79.6%	76.0%	64.2%	69.4%	72.2%	63.4%	71.4%	78.8%	76.9%	78.9%	72.0%	73.4%	
Nonlocal harvest	19.4%	21.6%	35.6%	28.7%	24.1%	34.2%	28.4%	19.9%	22.2%	20.5%	27.1%	25.1%	
Unknown state resident	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	
Subtotal, all state residents	99.0%	97.5%	99.8%	98.1%	96.3%	97.6%	99.8%	98.7%	99.1%	99.5%	99.0%	98.6%	
Nonresident harvest	1.0%	2.5%	0.2%	1.9%	3.7%	2.4%	0.2%	1.3%	0.9%	0.5%	1.0%	1.4%	
Total harvest	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	

Notes These totals do not include harvests in nonsubsistence areas (GMUs 7, 14, 15, 16A, and a portion of 20) and any harvests in the small portion of Unit 15 that is outside the nonsubsistence area. Uniform coding units (UCUs) within GMU 20 that are within the Fairbanks Nonsubsistence Area were also excluded. However, due to limited time, harvests from the small portions of GMU 1 inside the Juneau and Ketchikan nonsubsistence areas were included although these harvests are unlikely to significantly affect the ANS options presented here.

Table 4.—Reported harvests of lynx, in numbers of animals, and percentage of harvest, by residency category, 2000–2010.

	Lynx, number reported											Grand total	Annual mean
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010		
Local harvest	1,932	1,164	700	803	1,244	1,595	2,654	3,074	4,244	3,605	2,582	23,597	2,145.2
Nonlocal harvest	914	441	146	144	163	434	755	1,332	2,273	1,773	1,416	9,791	890.1
Unknown state resident	0	0	0	0	0	1	0	40	0	0	0	41	3.7
Subtotal, all state residents	2,846	1,605	846	947	1,407	2,030	3,409	4,446	6,517	5,378	3,998	33,429	3,039.0
Nonresident harvest	3	1	2	3	3	3	7	0	7	3	7	39	3.5
Unknown resident harvest	0	0	0	0	0	0	0	0	0	4	0	4	0.4
Total harvest	2,849	1,606	848	950	1,410	2,033	3,416	4,446	6,524	5,385	4,005	33,472	3,042.9

	Percentage of harvest (known residency only)											Annual mean
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Local harvest	67.8%	72.5%	82.5%	84.5%	88.2%	78.5%	77.7%	69.1%	65.1%	67.0%	64.5%	70.5%
Nonlocal harvest	32.1%	27.5%	17.2%	15.2%	11.6%	21.3%	22.1%	30.0%	34.8%	32.9%	35.4%	29.3%
Unknown state resident	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	0.0%	0.0%	0.0%	0.1%
Subtotal, all state residents	99.9%	99.9%	99.8%	99.7%	99.8%	99.9%	99.8%	100.0%	99.9%	99.9%	99.8%	99.9%
Nonresident harvest	0.1%	0.1%	0.2%	0.3%	0.2%	0.1%	0.2%	0.0%	0.1%	0.1%	0.2%	0.1%
Total harvest	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Notes These totals do not include harvests in nonsubsistence areas (GMUs 7, 14, 15, 16A, and a portion of 20) and any harvests in the small portion of Unit 15 that is outside the nonsubsistence area. Uniform coding units (UCUs) within GMU 20 that are within the Fairbanks Nonsubsistence Area were also excluded. However, due to limited time, harvests from the small portions of GMU 1 inside the Juneau and Ketchikan nonsubsistence areas were included although these harvests are unlikely to significantly affect the ANS options presented here.

MARTENS

Between 2000 and 2010, 41,886 martens were sealed from areas outside the nonsubsistence areas (excluding GMUs 17–26, where sealing is not required), or 3,808 per year (Table 5). Harvests ranged from a low of 2,677 in 2009 to a high of 5,470 in 2006. Fur prices and local abundance may account for differences between years. There was no discernible trend over the 11-year period, although total harvests rose in the mid 2000s and then dropped in 2007 (Figure 2). Deleting harvests for which the residency of the harvester is unknown, local residents accounted for 76.5% of the marten harvest and nonlocal residents 22.4%, for 98.8% by Alaska residents. Nonresidents took 1.2% of the marten harvest over the 11-year period, or about 45 per year (Figure 1).

RIVER OTTERS

Between 2000 and 2010, 14,188 river otters were sealed from areas outside the nonsubsistence areas, or 1,290 per year (Table 6). Harvests ranged from a low of 611 in 2007 to a high of 2,199 in 2004. The wide range of harvests may reflect fur prices or local abundance. Deleting harvests for which the residency of the harvester is unknown, local residents accounted for 81.9% of the harvest, nonlocal residents 17.6%, and Alaskans of unknown residence <0.1%, for 99.6% by Alaska residents. Nonresidents took 0.4% of the river otter harvest over the 11-year period, or about 6 per year (Figure 1).

Table 5.—Reported harvests of martens, in numbers of animals, and percentage of harvest, by residency category, 2000–2010.

	Martens, number reported											Grand total	Annual mean
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010		
Local harvest	2,706	2,508	2,534	2,804	3,720	3,939	4,277	2,708	2,646	1,991	2,189	32,022	2,911.1
Nonlocal harvest	1,226	800	620	731	815	1,121	994	545	1,027	674	816	9,369	851.7
Unknown state resident	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Subtotal, all state residents	3,932	3,308	3,154	3,535	4,535	5,060	5,271	3,253	3,673	2,665	3,005	41,391	3,762.8
Nonresident harvest	57	5	5	0	28	147	199	1	34	12	7	495	45.0
Unknown resident harvest	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Total harvest	3,989	3,313	3,159	3,535	4,563	5,207	5,470	3,254	3,707	2,677	3,012	41,886	3,807.8

	Percentage of harvest (known residence only)											Annual mean
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Local harvest	67.8%	75.7%	80.2%	79.3%	81.5%	75.6%	78.2%	83.2%	71.4%	74.4%	72.7%	76.5%
Nonlocal harvest	15.5%	12.1%	9.8%	10.3%	9.0%	10.9%	9.3%	8.4%	13.9%	12.6%	13.6%	22.4%
Unknown state resident	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Subtotal, all state residents	98.6%	99.8%	99.8%	100.0%	99.4%	97.2%	96.4%	100.0%	99.1%	99.6%	99.8%	98.8%
Nonresident harvest	1.4%	0.2%	0.2%	0.0%	0.6%	2.8%	3.6%	0.0%	0.9%	0.4%	0.2%	1.2%
Total harvest	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Notes These totals do not include harvests in nonsubsistence areas (GMUs 7, 14, 15, 16A, and a portion of 20) and any harvests in the small portion of Unit 15 that is outside the nonsubsistence area. Uniform coding units (UCUs) within GMU 20 that are within the Fairbanks Nonsubsistence Area were also excluded. However, due to limited time, harvests from the small portions of GMU 1 inside the Juneau and Ketchikan nonsubsistence areas were included although these harvests are unlikely to significantly affect the ANS options presented here.

Table 6.—Reported harvests of river otters, in numbers of animals, and percentage of harvest, by residency category, 2000–2010.

	River otters, number reported											Grand total	Annual mean
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010		
Local harvest	834	946	1,548	1,379	1,780	1,669	886	459	632	646	839	11,618	1,056.2
Nonlocal harvest	89	141	252	332	408	396	280	144	155	139	165	2,501	227.4
Unknown state resident	0	0	0	0	1	0	0	0	0	0	2	3	0.3
Subtotal, all state residents	923	1,087	1,800	1,711	2,189	2,065	1,166	603	787	785	1,006	14,122	1,283.8
Nonresident harvest	7	5	4	7	10	2	7	8	0	7	5	62	5.6
Unknown resident harvest	0	0	0	0	0	0	0	0	4	0	0	4	0.4
Total harvest	930	1,092	1,804	1,718	2,199	2,067	1,173	611	791	792	1,011	14,188	1,289.8

	Percentage of harvest (known residency only)											Annual mean
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Local harvest	89.7%	86.6%	85.8%	80.3%	80.9%	80.7%	75.5%	75.1%	80.3%	81.6%	83.0%	81.9%
Nonlocal harvest	9.6%	12.9%	14.0%	19.3%	18.6%	19.2%	23.9%	23.6%	19.7%	17.6%	16.3%	17.6%
Unknown state resident	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
Subtotal, all state residents	99.2%	99.5%	99.8%	99.6%	99.5%	99.9%	99.4%	98.7%	100.0%	99.1%	99.5%	99.6%
Nonresident harvest	0.8%	0.5%	0.2%	0.4%	0.5%	0.1%	0.6%	1.3%	0.0%	0.9%	0.5%	0.4%
Total harvest	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Notes These totals do not include harvests in nonsubsistence areas (GMUs 7, 14, 15, 16A, and a portion of 20) and any harvests in the small portion of Unit 15 that is outside the nonsubsistence area. Uniform coding units (UCUs) within GMU 20 that are within the Fairbanks Nonsubsistence Area were also excluded. However, due to limited time, harvests from the small portions of GMU 1 inside the Juneau and Ketchikan nonsubsistence areas were included although these harvests are unlikely to significantly affect the ANS options presented here.

WOLVES

Between 2000 and 2010, 7,739 wolves were sealed from areas outside the nonsubsistence areas where specific ANS ranges have been established [GMUs 9, 10 (Unimak Island only), 11, 13, 16B, 18, 22, 23, and 26A], or 704 per year (Table 7). These totals do not include wolves sealed as part of predation control programs. Harvests ranged from a low of 557 in 2010 to a high of 1,042 in 2000. Harvests appear to have declined over the 11-year period (Figure 2). Deleting harvests for which the residency of the harvester is unknown, local residents accounted for 64.0% of the harvest, nonlocal residents 26.6%, and Alaskans with unknown residency 0.3%, for 90.9% by Alaska residents. Nonresidents took 9.1% of the wolf harvest over the 11-year period, or about 64 per year (Figure 1). As a big game species as well as a furbearer, wolves may be taken with a hunting license, which likely accounts for the higher percentage of nonresident harvest than for other furbearers.

WOLVERINES

Between 2000 and 2010, 5,822 wolverines were sealed from areas outside the nonsubsistence areas, or 529 per year (Table 8). Harvests ranged from a low of 429 in 2002 to a high of 626 in 2003. Harvests of wolverines appear to be relatively stable over the 11-year period compared to other furbearers (Figure 2). Deleting harvests for which the residency of the harvester is unknown, local residents accounted for 65.0% of the harvest, nonlocal residents 32.2%, and Alaskans with unknown residence 0.1%, for 97.3% by Alaska residents. Nonresidents took 2.7% of the wolverine harvest over the 11-year period, or about 14 per year (Figure 1). As a big game species as well as a furbearer, wolverines may be taken with a hunting license, which likely accounts for the slightly higher percentage of nonresident harvest than for other furbearers other than wolves.

Table 7.—Reported harvests of wolves, in numbers of animals, and percentage of harvest, by residency category, 2000–2010.

	Wolves, number reported											Grand total	Annual mean
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010		
Local harvest	650	638	511	477	460	369	359	326	411	375	371	4,947	449.7
Nonlocal harvest	308	233	185	189	157	168	208	177	148	160	126	2,059	187.2
Unknown state resident	0	3	1	0	0	1	2	1	5	1	7	21	1.9
Subtotal, all state residents	958	874	697	666	617	538	569	504	564	536	504	7,027	638.8
Nonresident harvest	84	54	83	56	64	57	82	80	53	41	51	705	64.1
Unknown resident harvest	0	2	1	0	0	0	0	1	0	1	2	7	0.6
Total harvest	1,042	930	781	722	681	595	651	585	617	578	557	7,739	703.5
Percentage of harvest (known residency only)													
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Annual mean	
Local harvest	62.4%	68.8%	65.5%	66.1%	67.5%	62.0%	55.1%	55.8%	66.6%	65.0%	66.8%	64.0%	
Nonlocal harvest	29.6%	25.1%	23.7%	26.2%	23.1%	28.2%	32.0%	30.3%	24.0%	27.7%	22.7%	26.6%	
Unknown state resident	0.0%	0.3%	0.1%	0.0%	0.0%	0.2%	0.3%	0.2%	0.8%	0.2%	1.3%	0.3%	
Subtotal, all state residents	91.9%	94.2%	89.4%	92.2%	90.6%	90.4%	87.4%	86.3%	91.4%	92.9%	90.8%	90.9%	
Nonresident harvest	8.1%	5.8%	10.6%	7.8%	9.4%	9.6%	12.6%	13.7%	8.6%	7.1%	9.2%	9.1%	
Total harvest	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	

Notes These totals do not include harvests in nonsubsistence areas (GMUs 7, 14, 15, 16A, and a portion of 20) and any harvests in the small portion of Unit 15 that is outside the nonsubsistence area. Uniform coding units (UCUs) within GMU 20 that are within the Fairbanks Nonsubsistence Area were also excluded. However, due to limited time, harvests from the small portions of GMU 1 inside the Juneau and Ketchikan nonsubsistence areas were included although these harvests are unlikely to significantly affect the ANS options presented here.

Further, the totals for wolves do not include reported harvests in units for which ANS ranges have been established (see Table 1), nor do they include wolves taken as part of predation control programs.

Table 8.—Reported harvests of wolverines, in numbers of animals, and percentage of harvest, by residency category, 2000–2010.

	Wolverines, number harvested											Grand total	Annual mean
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010		
Local harvest	349	331	279	439	363	382	332	302	265	365	378	3,785	344.1
Nonlocal harvest	206	180	136	166	196	175	167	146	207	160	136	1,875	170.5
Unknown state resident	0	0	0	0	0	0	0	0	1	1	1	3	0.3
Subtotal, all state residents	555	511	415	605	559	557	499	448	473	526	515	5,663	514.8
Nonresident harvest	22	16	14	21	13	12	9	13	8	15	13	156	14.2
Unknown resident harvest	0	3	0	0	0	0	0	0	0	0	0	3	0.3
Total harvest	577	530	429	626	572	569	508	461	481	541	528	5,822	529.3

	Percentage of harvest (known residence only)											Annual mean
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Local harvest	60.5%	62.8%	65.0%	70.1%	63.5%	67.1%	65.4%	65.5%	55.1%	67.5%	71.6%	65.0%
Nonlocal harvest	35.7%	34.2%	31.7%	26.5%	34.3%	30.8%	32.9%	31.7%	43.0%	29.6%	25.8%	32.2%
Unknown state resident	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%	0.2%	0.1%
Subtotal, all state residents	96.2%	97.0%	96.7%	96.6%	97.7%	97.9%	98.2%	97.2%	98.3%	97.2%	97.5%	97.3%
Nonresident harvest	3.8%	3.0%	3.3%	3.4%	2.3%	2.1%	1.8%	2.8%	1.7%	2.8%	2.5%	2.7%
Total harvest	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Notes These totals do not include harvests in nonsubsistence areas (GMUs 7, 14, 15, 16A, and a portion of 20) and any harvests in the small portion of Unit 15 that is outside the nonsubsistence area. Uniform coding units (UCUs) within GMU 20 that are within the Fairbanks Nonsubsistence Area were also excluded. However, due to limited time, harvests from the small portions of GMU 1 inside the Juneau and Ketchikan nonsubsistence areas were included although these harvests are unlikely to significantly affect the ANS options presented here.

ANS OPTIONS

Following are 4 options for BOG findings on the ANS for furbearers and fur animals, including a “no action” option.

1. **Take no action** on the present ANS findings. For all but selected populations of wolves for which ANS ranges have been established, taking no action would leave the ANS at 100% of the allowable harvest, meaning that all the available harvest is needed for subsistence uses and no other uses may be allowed [AS 16.05.258(b)(3)]. This “no action” option may require closing trapping of furbearers and hunting of fur animals to nonresidents, as proposed in proposals 14 and 19 and as amended by the BOG to apply statewide, outside nonsubsistence areas.
2. Adopt ANS amounts on a statewide level as a **percentage of the harvestable surplus** taken by Alaska residents. If conservation or allocation issues arise in the future, more specific findings can be made. The BOG has already found that all uses of furbearers and fur animals by Alaskans are subsistence uses. Therefore, the percentage of the harvestable surplus needed for subsistence is the percentage taken by Alaskans.
3. Adopt ANS ranges in **numbers of animals** for each species at statewide level. These ranges will likely need to be wide to accommodate annual fluctuations in harvests, as per earlier BOG findings. Because sealing record data are lacking for most species, this option can only be applied to selected species.
4. **Address each species at the GMU or some other more specific level.** This option will require additional data analysis, requiring additional staff time for preparation. Findings could be developed at regularly scheduled BOG meetings over the next regulatory cycle, or a special meeting of the BOG.

OPTION 2. ANS AS A PERCENTAGE OF TOTAL HARVESTS BY ALASKA RESIDENTS

Suboption 2A. ANS = the average statewide percentage of the total harvest of all furbearers and fur animals taken by Alaska residents over the 11-year period (2000–2010), rounded to the nearest 1%, other than 100%.

This percentage would pertain to every furbearer species. Under this suboption, the ANS finding would be “99% of the harvestable portion” (Table 9). The ANS finding could be either 1) for all furbearers and fur animals as a group, except for those populations for which specific ANS ranges have been established (presently just certain populations of wolves); or 2) each species of furbearers and fur animals listed separately, except for those populations for which specific ANS ranges have been established (presently just certain populations of wolves).

Table 9.—Reported numbers harvested and estimated percentage of harvest, by Alaska residents and nonresidents, of beavers, lynx, martens, river otters, wolves, and wolverines, 2000–2010.

	Alaska residents		Nonresidents	
	Number	Percentage	Number	Percentage
Beavers	15,098	98.6%	219	1.4%
Lynx	33,429	99.9%	39	0.1%
Martens	41,391	98.8%	495	1.2%
River otters	14,122	99.6%	62	0.4%
Wolves	7,027	90.9%	705	9.1%
Wolverines	5,663	97.3%	156	2.7%
All	116,730	98.6%	1,676	1.4%

Suboption 2B. ANS = the average statewide percentage of the total harvest taken by Alaska residents for each furbearer species over the 11 year period, rounded to the nearest 1%, other than 100%.

This percentage pertains to each furbearer species for which sealing is required (Table 2). For those furbearers for which sealing is not required, the average for the 6 species combined could be used (similar to Suboption A for these species).

The ANS findings would be as follows:

Beavers:	99% of harvestable portion
Lynx:	99% of harvestable portion
Martens:	99% of harvestable portion
River otters:	99% of harvestable portion
Wolves:	91% of harvestable portion (except those units with specific ANS ranges)
Wolverines:	97% of harvestable portion
Coyotes:	99% of harvestable portion
Foxes:	99% of harvestable portion
Marmots:	99% of harvestable portion
Mink:	99% of harvestable portion
Muskrats:	99% of harvestable portion
Squirrels:	99% of harvestable portion
Weasels:	99% of harvestable portion

OPTION 3. ESTABLISH A STATEWIDE ANS RANGE FOR EACH SPECIES

ANS = range of reported harvests by Alaska residents statewide over the 11-year period.

As summarized in Table 10, these reported ranges are as follows:

Beavers:	875–2,809 (the range does not include all units)
Lynx:	846–6,517
Martens:	2,665–5,271 (the range does not include all units)
River otters:	603–2,189
Wolves:	504–958 (based on units without specific ANS findings)
Wolverines:	415–605

Table 10.—Range of reported harvests of furbearers, and mean harvests, 2000–2010.

		Range		Mean	
		Low	High		
Beavers	All harvests	883	2,836	1,393	
	Residents only	875	2,809	1,373	
	Nonresidents only ^a	2 0.2%	41 3.7%	20 1.4%	
Lynx	All harvests	848	6,524	3,043	
	Residents only	846	6,517	3,039	
	Nonresidents only ^a	0 0.0%	7 0.3%	4 0.1%	
Martens	All harvests	2,677	5,470	3,808	
	Residents only	2,665	5,271	3,763	
	Nonresidents only ^a	0 0.0%	199 3.6%	45 1.2%	
River otters	All harvests	611	2,199	1,290	
	Residents only	603	2,189	1,284	
	Nonresidents only ^a	0 0.0%	10 1.3%	6 0.4%	
Wolves	All harvests	557	1,042	704	
	Residents only	504	958	639	
	Nonresidents only ^a	41 5.8%	84 13.7%	64 9.1%	
Wolverines	All harvests	429	626	529	
	Residents only	415	605	515	
	Nonresidents only ^a	8 1.7%	22 3.8%	14 2.7%	

Note Includes harvests in areas outside of nonsubsistence areas where sealing of harvests is required.

a. Percentage = portion of total reported harvest taken by nonresidents.

However, because the sealing program for beavers and martens does not include the entire state (see Table 2), sealing data alone cannot be used to develop statewide estimates of the number of these species harvested by Alaskans annually. For these species, further analysis of household survey data collected by the Division of Subsistence would need to occur to develop estimated ranges for the state. The same limitation applies to species without sealing programs. For these species, alternatives to Option 3 include: 1) using Option 2A or Option 2B; 2) taking no action (Option 1), which leaves the current ANS at 100% of the allowable harvest; or 3) making no ANS finding (repealing the current finding) until an estimate can be developed based on household surveys.

For the 4 species for which sealing record data can support developing a statewide range of harvests, the following ANS ranges would be established, rounding to the nearest 100 animals:

Lynx:	800–6,500
River otters:	600–2,200
Wolves:	500–1,000 (except where specific ranges have been established)
Wolverines:	400–600
All other species:	99% of the harvestable portion, OR 100% of the harvestable portion, OR No finding

OPTION 4. UNIT-BY-UNIT ANS RANGE

Until furbearer harvests can be estimated at this level using a combination of sealing data and household survey data, the department recommends not applying this option, except when conservation or allocation issues arise in the future, as has been the BOG's practice with wolves. This recommendation is consistent with the approach the BOG endorsed at its November 2000 meeting. Implementation of this option will require a substantial investment of staff time to develop harvest estimates for each furbearer population by unit, with the potential for up to about 390 separate ANS findings (21 GMUs outside nonsubsistence areas and 19 furbearer species, minus those wolf populations for which specific ANS ranges have been made). Combining GMUs and species would reduce the necessary number of ANS findings under this option.

REFERENCE CITED

Langdon, S. J. 1993. The Native people of Alaska. Third edition. Greatland Graphics, Anchorage.

**APPENDIX A: RC 16, ANS OPTIONS PRESENTED DURING
OCTOBER 1997 BOARD OF GAME MEETING**

Appendix A.—RC 16, Customary and traditional use findings of furbearers, options for the Board of Game, 1997, presented as RC 16.

Sep-26-97 11:08A

P.03

BOG Oct 1997 RC 16

**Customary and Traditional Use Findings of Furbearers
Options for the Board of Game, 1997**

The board has never made a formal finding regarding subsistence trapping of furbearers. State regulations for "trapping" are simply silent on the question of whether they are subsistence, general, or nonresident trapping regulations. This means that customary and traditional use findings are still pending for "furbearers" – animals subject to taking with a trapping license, including beaver, coyote, fox (arctic, red), lynx, marten, mink, weasel (least short-tailed), muskrat, land otter, squirrel (red, flying, ground), marmot (Alaska, hoary), woodchuck, wolverine, and in part, wolf (findings have been made for wolf in certain units) (see Table 1). The following are options for the Board of Game to address this situation.

Option 1. Status Quo With General Presumptions

Option 1 is for the Board of Game to do nothing, maintaining the "status quo" in regulation. The general presumption would be that current state regulations, though silent on the question of subsistence-general-nonresident trapping, do provide for subsistence trapping patterns in Alaska.

Option 2. Make C&T Findings for Furbearers With General Presumptions

Option 2 is for the Board of Game to make customary and traditional use findings for furbearers, with certain general presumptions. Under this option, the general presumptions would be that "subsistence trapping" (as well as "general trapping" and "nonresident trapping") exist with possibly some named exceptions. The Board would hear information from the department on trapping patterns as a whole in areas where there are state trapping regulations. The Board would then make findings that subsistence trapping, general trapping, and nonresident trapping exist and are provided for in regulation, with certain named exceptions. Exceptional wildlife populations/areas would be identified and addressed individually. Under this approach, time is spent on the exceptions, rather than on the whole.

The gaps in the C&T findings could be addressed with the following two motions directed toward areas outside the nonsubsistence areas listed in 5 AAC 99.015:

"There is a customary and traditional use of:

1. furbearers (excluding wolf) in CMUs 1 - 6, 8 - 13, 15C, 16B, 17-26, except for..."
2. wolf in CMUs 1, 3 - 5, except for..."

The Board would then make a finding that current trapping regulations are presumed to provide for subsistence uses, until proposals are received suggesting otherwise. Changes in regulation under this option would be the following:

1. Two columns would be created in 5 AAC 84.270. In areas with customary and traditional uses, the columns would be "Resident Open Season (Subsistence and General Trapping)" and "Nonresident Open Season". This parallels the structure used for game hunting, such as in 5 AAC 89.015. In nonsubsistence areas and areas without customary and traditional uses, the columns would be "Resident Open Season (General Trapping Only)" and "Nonresident Trapping".

2. Positive findings for "furbearers" would be listed in 5 AAC 99.025.

As part of the general findings above, the Board is required by statute to address the amount of furbearers reasonably necessary for subsistence uses. Furbearers pose particular complexities for establishing a single amount because there are four types of common subsistence uses of furbearers - food (certain furbearers are eaten), clothing, crafts that are sold, and sale of furs to fur buyers (an example of customary trade). It is difficult assigning a single amount necessary for subsistence uses given the multiple uses of furbearers. In this case, the board might consider making a general finding that the amount of furbearers reasonably necessary for subsistence uses substantially varies with fur prices. Amounts for specific uses will be established on a case by case basis when specific allocation issues between subsistence/general and nonresident trapping require it. This general finding would be consistent with the presumption that current regulations provide for subsistence trapping, until proposals are received suggesting otherwise.

Option 3. Make C&T Findings for Furbearers Without General Presumptions

Option 3 is for the Board of Game to make customary and traditional use findings for furbearers, without any general presumptions. Under this option, the board would examine furbearers on an area-by-area, population-by-population basis. The Board would hear information from the department on trapping patterns for distinct furbearer populations and areas and make separate findings for each. These deliberations could be scheduled several ways: (1) when each region comes up in the Board cycle, (2) when the area and population is raised by a trapping proposal, or (3) during a special session focused on customary and traditional uses of furbearers.

The gaps in the C&T findings could be addressed with the following set of motions directed toward the areas outside the nonsubsistence areas listed in 5 AAC 99.015:

"There is/is not a customary and traditional use of:

1. beaver in GMUs ...[e.g., 1 - 6, 8 - 13, 15C, 16B, 17-26]
2. coyote in GMUs ...[e.g., 1 - 6, 8 - 13, 15C, 16B, 17-26]
3. fox in GMUs ...[e.g., 1 - 6, 8 - 13, 15C, 16B, 17-26]
4. lynx in GMUs ...[e.g., 1 - 6, 8 - 13, 15C, 16B, 17-26]
5. marten in GMUs ...[e.g., 1 - 6, 8 - 13, 15C, 16B, 17-26]
6. mink in GMUs ...[e.g., 1 - 6, 8 - 13, 15C, 16B, 17-26]
7. weasel in GMUs ...[e.g., 1 - 6, 8 - 13, 15C, 16B, 17-26]
8. muskrat in GMUs ...[e.g., 1 - 6, 8 - 13, 15C, 16B, 17-26]
9. land otter in GMUs ...[e.g., 1 - 6, 8 - 13, 15C, 16B, 17-26]
10. squirrel in GMUs ...[e.g., 1 - 6, 8 - 13, 15C, 16B, 17-26]
11. marmot in GMUs ...[e.g., 1 - 6, 8 - 13, 15C, 16B, 17-26]
12. woodchuck in GMUs ...[e.g., 1 - 6, 8 - 13, 15C, 16B, 17-26]
13. wolverine in GMUs ...[e.g., 1 - 6, 8 - 13, 15C, 16B, 17-26]
14. wolf in GMUs 1, 3 - 5 "

The procedure for making changes in regulation and findings on reasonable opportunity would be similar to those listed above for Option 2.

TABLE 1. SUMMARY OF ALASKA BOARD OF GAME CUSTOMARY AND TRADITIONAL USE FINDINGS

Findings: Y = Positive, N = Negative; o = No Findings Made as Yet

Blank Cells Indicate That Species Is Not Present in the Unit or Subunit.

Cells With a Dash Blank Indicate the Unit's Wildlife Population Is in a Non-Subsistence Area.

	1A	1B	1C	1D	2	3	4	5	6A	6B	6C	6D	7	8	9A	9B	9C	9D	9E	10	11	12	13A	13B	13C	13D	13E	14A	14B	14C	15A	15B	15C	16A	16B
Bison													-							N															
Black Bear													Y	Y	Y	Y	-																		
Brown Bear													Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			
Caribou													-		Y	Y	Y	Y	Y	(1)	Y	Y	Y	Y	-	-	-	-	-	-	-	-			
Dall Sheep													-																						
Deer													Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
Elk													N																						
Goon													Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
Moose													Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		
Musk Oxen													-																						
Wolf													Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
Grouse													-																						
Prairie-Chicken													-																						
Ober-Snow Goose (2)													-																						
Fur-bearing (3)													-																						
Porcupine													-																						
Cormorant													-																						
Snowy Owl													-																						

(1) Natchna (40-mile herds), positive; Chisana herd, negative.

(2) Hares (snowshoe, arctic), ducks (except sea ducks), sea ducks and mergansers, geese (excluding Canada, other Canada, white-fronted, snow, brent, emperor), sandhill crane, and eiders

(3) Animals subject to tainting with a trapping license: beaver, coyote, fox (arctic, red), lynx, marten, mink, weasel (least, short-tailed), muskrat, land otter, squirrel (red, flying, ground), marmot (Alaska, hoary), woodchuck, wolf, and wolverine.

CTGAGT-JA92677

AIA - 26-97 11:00 P.M.

TABLE 1. SUMMARY OF ALASKA BOARD OF GAME CATEGORIAT AND TRADITIONAL USE PRIMICES

Cells with Dots indicate the units within which Population is in Non-Sustaining Area																																																																																																																																																																																																																																																																																																																																																																																												
Cells with N indicate The Species is not present in the Unit of Survey																																																																																																																																																																																																																																																																																																																																																																																												
Regions Y = Predator N = Nongame O = No Returns Listed in VRS																																																																																																																																																																																																																																																																																																																																																																																												
TABLE 1. SUMMARY OF ALASKA BOARD OF GAME CATEGORIAT AND TRADITIONAL USE PRIMICES																																																																																																																																																																																																																																																																																																																																																																																												
600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	

**APPENDIX B: CUSTOMARY AND TRADITIONAL USE
WORKSHEET, FURBEARERS, BOARD OF GAME JANUARY
2000 MEETING**

Appendix B.—Customary and traditional use worksheet, furbearers, prepared for the Board of Game for their January 2000 meeting.

EIGHT CRITERIA WORKSHEET: FURBEARERS

Prepared for the Alaska Board of Game by the Division of Subsistence,
Alaska Department of Fish and Game, January 2000

SPECIES: Furbearers, including beaver, coyote, fox (arctic, red), land otter, lynx, marmot (Alaska, hoary), marten, mink, muskrat, squirrel (red, flying, ground), weasel (least, short-tailed), wolf, and wolverine.

GMU/SUBUNIT: In the following units, outside of the nonsubsistence areas listed in 5 AAC 99.015:

(A) Beaver	Units 1-6, 8-9, 11-13, 15C, 16B, 17-26
(B) Coyote	Units 1-6, 9-13, 15C, 16B, 17-26
(C) Fox	Units 1-6, 8-13, 15C, 16B, 17-26
(D) Lynx	Units 1-6, 8-13, 15C, 16B, 17-26
(E) Marmot	Units 1-6, 8-13, 15C, 16B, 17-26
(F) Marten	Units 1-6, 8-9, 11-13, 15C, 16B, 17-26
(G) Mink	Units 1-6, 8-13, 15C, 16B, 17-26
(H) Muskrat	Units 1-6, 8-13, 15C, 16B, 17-26
(I) Land otter	Units 1-6, 8-13, 15C, 16B, 17-26
(J) Squirrel	Units 1-6, 8-13, 15C, 16B, 17-26
(K) Weasel	Units 1-6, 8-13, 15C, 16B, 17-26
(L) Wolf*	Units 1-6, 9-13, 15C, 16B, 17-26
(M) Wolverine	Units 1-6, 8-13, 15C, 16B, 17-26

*Note: The board has found customary and traditional uses of wolf in GMUs 2, 6, 9 - 13, 15C, 16B, 17-26 outside of nonsubsistence areas. Findings for wolf in other areas are pending.

BACKGROUND DEFINITIONS:

- In Alaska statutes, the definition of "subsistence uses" includes "clothing", "the making and selling of handicraft articles out of inedible by-products of fish and wildlife resources taken for personal or family consumption", and "customary trade", as well as "food", "shelter", "fuel", "tools", "transportation", "barter", and "sharing"(AS 16.05.940(32)).
- The sale of furs and furbearers is exempted from "minimal amounts" limits placed on "customary trade", which is defined as "the limited noncommercial exchange, for minimal amounts of cash, as restricted by the appropriate board, of fish or game resources; the terms of this paragraph do not restrict the money sales of furs and furbearers" (AS 16.05.940(8)).
- The sale of animal skins by a trapper or a hunter who has legally taken the animal, and the purchase of animal skins for one's own use, is not defined as "fur dealing", which means "engaging in the business of buying, selling, or trading in animal skins"(AS 16.05.940(17)).

1. Length and consistency of use (a long-term consistent pattern of noncommercial taking, use, and reliance on the game population that has been established over a reasonable period of time of not less than one generation, excluding interruption by circumstances beyond the user's control, such as unavailability of the game caused by migratory patterns)

Furbearers have been harvested for their furs, and in some cases for food, for hundreds of years in Alaska, continuing up to the present time. At historic contact, furs and skins were used for clothing and other crafted items within all indigenous cultural groups in Alaska. During the late

20th century, furs continue to be used, though primarily in handicraft specialty clothes for local use (including ruffs, hats, mitts, footwear, parkas, and trim), in handicraft items sold as arts and crafts, and as pelts sold to fur buyers. Certain furbearers are used for human food, including beaver and muskrat, and in some cases, lynx, ground squirrel, marmot, and mink, depending on the area. Carcasses also are used as dog food and trapping bait.

Alaska's fur resources drew Euroamerican trading companies to Alaska by the mid 1700s, including Russian, Spanish, British, and eventually American companies (Novak et al. 1987; Zagorskin 1967). In most areas, the post-contact fur trade was built upon traditions of harvesting and trading furs and handicraft items between indigenous groups that had existed for centuries before that (Clark 1981:586, 595; Murphy and Steward 1956). The volume of particular furs harvested has fluctuated over time depending on fur bearer population levels, local demand for furs and handicraft items, and fur prices on export markets. Under territorial and state jurisdictions, seasons have been generally open for fur bearer harvests in the areas they occur, with regulations allowing for local use and distribution of fur products through sharing, trade, and sale of handicrafts.

The records of the number and types of furs harvested in Alaska are incomplete, but they provide a general picture of harvest patterns. Table 2 presents a partial record of furs traded from Alaska, beginning with records in 1743 (Novak et al. 1987; IAFWA 1993). Eleven of the thirteen furbearers are part of the historic record (squirrel and marmot are missing). Tables 3 to 8 summarize the pelts of beaver, lynx, marten, land otter, wolf, and wolverine sealed as part of the state's sealing program from 1979-1998. Only some pelts require sealing; even with these, ADF&G staff estimate that as few as 10 percent of harvests in some areas of the state are sealed some years. Table 1 presents an estimate of the total annual fur bearer harvest by residents of rural areas, derived from household surveys conducted in selected communities and years during the mid-1980s to mid-1990s, expanded to unsurveyed places (ADF&G 1999). Based on household surveys, the annual harvest of furs by residents of rural areas during the past decade is estimated to be about 20,000 beaver, 400 coyote, 15,400 fox, 2,400 lynx, 40 marmot, 32,500 marten, 12,400 mink, 44,500 muskrat, 3,100 land otter, 8,600 squirrel, 1,000 weasel, 1,100 wolf, and 900 wolverine. The confidence limits around these estimates is about +/- 58 percent. Additional animals are harvested in nonsubsistence areas, according to fur sealing records from the past decade (800-1,400 beaver, 50-700 lynx, 500-800 marten, 150-300 land otter, 160-250 wolf, and 40-70 wolverine) (Tables 3-8). Harvests by community are presented in Table 9.

2. Seasonality (a pattern of taking or use recurring in specific seasons of each year)

The harvest season for furbearers commonly is linked to the uses made of the animal by the harvester. Furbearers are commonly harvested during winter and spring at times when pelts are considered prime by fur buyers, in order to increase their sale value. Furbearers are also commonly harvested at other times (including late fall and late spring/early summer) for local uses, such as for food and for making handcrafted items for local use and sale, when pelt primeness is less important. To illustrate local seasonal variation, Figure 1 presents harvest periods reported by residents of selected communities in several areas. For instance, harvest periods at Kwethluk in the western region were reported as follows: beaver (mid-August to mid-October, mid-November to early June), fox (late October to mid-April), land otter (late August to early April), muskrat (late August through December, mid-April to early June), and ground squirrel (mid-August to early October, late March to late-May). As shown in Figure 1, seasons in other areas show local variations.

3. Means and Methods of Harvest (a pattern of taking or use consisting of methods and means of harvest that are characterized by efficiency and economy of effort and cost)

At historic contact, depending on the species, furbearers were harvested with set facilities such as deadfall traps, snares, and basket traps, and also by hunting. Additional methods were introduced and adapted after historic contact, including the use of steel leg-hold and body traps, steel snares, wire screened basket traps, and rifles. Types of sets, bait, and traps vary by area and species. For instance, methods used along the Kuskokwim include pole sets of small leg-hold traps for marten; ground sets of larger traps for wolverine, fox, and lynx; drowning snares for beaver; combear, leg-hold, and basket traps for mink and otter; hole sets of small leg-hold traps for ground squirrel; and .22 caliber rifles for muskrat and marmot (Stokes 1985, Coffing 1991). Before historic contact, access to fur areas was by foot, boat, and dog traction, depending on the species, season, and area. During the late 20th century, other efficient means and methods were commonly used to access harvest areas, including snowmachines, ATVs, and boats, and less frequently, trucks and planes. Sleds commonly hold supplies and the catch.

4. Geographic Area (the area in which the noncommercial, long-term, and consistent pattern of taking, use, and reliance upon the game population has been established)

Furbearers are typically harvested in areas surrounding a harvester's residence. As examples, Figures 2, 3, and 4 illustrate trapping areas and lines for Hualapai in 1981-83, for the Western Susina Basin in 1984, and for Minto in 1960-84 (Marcotte 1986; Stanek 1987; Andrews 1988). In some cases, harvest areas are periodically accessed from the home community, while in other cases harvesters use camps and cabin sites outside the home community to check lines. In some regions, harvests of certain species (such as muskrat, ground squirrel, and marmot) occur at seasonal camps distant from the community. In some parts of Alaska, customary usufruct rights to trapping lines are negotiated, enforced, and transferred through local convention. In other places, exclusive access rights are not locally recognized and furbearers are harvested from common-use areas. Alaska has no legal registration system for traplines or trapping areas.

5. Means of Handling, Preparing, Preserving, and Storing (a means of handling, preparing, preserving, and storing of game that has been traditionally used by past generations, but not excluding recent technological advances where appropriate)

The pattern of handling furs during the late 20th century varied by the use of the fur. Some furs are processed locally by trappers for sale to fur buyers. Other furs are processed locally for handicraft items. Still others are sent to commercial tanning companies for processing for local use. Initial processing of furs involve skinning, fleshing, drying, and stretching on boards (Stokes 1985:196). After drying, imperfections are repaired by sewing and a second stretching commonly done. Pelts are commonly stored in cool, dry places, bundled by lots, and sold to fur buyers. Furs retained for local use are "tanned" using customary procedures that vary by place, but typically involve rubbing or working soap into the pelt, scraping, and breaking down fibers in the hide. Master patterns are used for cutting pieces for sewn articles. Styles of hats, ruffs, parkas, mitts, shoes, and other handicrafted items vary locally. Several different skins are commonly incorporated into items. Certain furbearers are prepared fresh or dried for food, including beaver and muskrat, and in some areas, lynx, ground squirrel, marmot, and mink.

6. Intergenerational Transmission (a pattern of taking or use that includes the handing down of knowledge of hunting skills, values, and lore from generation to generation)

Trapping is commonly learned by young boys accompanying relatives on trapping trips during periods of moderate weather (Stokes 1985:183; Andersen 1996). Many boys gain trapping experience setting and maintaining small lines with a few traps near the community, which are checked after school. Longer groomed trapping areas are commonly checked by partners or family members who learn from the main owner. Rights to use an established line are commonly

transferred across generations in a family or between partners. While trapping knowledge is typically learned through families, in some areas trapping associations have been established as local institutions for the development and promotion of trapping standards and values.

7. Distribution and Exchange (a pattern of taking, use, and reliance where the harvest effort or products of that harvest are distributed or shared, including customary trade, barter, and gift-giving)

Furs and other products from furbearers are commonly shared and exchanged. The percent of households using, harvesting, giving, and receiving furbearers are shown in Table 10, based on household surveys for selected communities and years. Harvesters commonly dispose of furbearer products through several channels - some are used by the harvesters' family, others are given and sold locally as pelts or finished products, and others are sold to fur buyers (Wolfe 1991). For example, surveyed households in Kwethluk sold somewhat less than a quarter of their furbearer harvests in 1986, with most furbearers used locally for clothing, crafts, and food (Coffing 1991:181), as follows:

	Sold	Not Sold	Eaten	Dog Food
Beaver	25%	75%	54%	27%
Mink	0%	100%	38%	56%
Otter	23%	77%	33%	23%
Muskrat	26%	74%	37%	63%
Red Fox	16%	84%	0%	0%

As a contrasting example, most furbearers were sold by surveyed households in Fort Yukon in 1987 (Sumida and Andersen 1990:37, 57), as follows:

	Sold	Not Sold	Eaten	Dog Food
Beaver	83%	17%	16%	32%
Mink	100%	0%	0%	-
Otter	100%	0%	0%	-
Muskrat	92%	8%	22%	4%
Red Fox	96%	4%	0%	-
Marten	97%	3%	0%	-
Lynx	100%	0%	3%	20%

Furs may be sold to itinerant fur dealers, local fur cooperatives, or shipped by mail to fur dealers. Markets for furs vary over time. In the early 1990s, the primary export market were as follows: beaver (U.S., Canada, Italy), lynx (U.S., Canada, Japan), marten (U.S., Japan, Italy), mink (Italy, Spain, China), muskrat (U.S., Canada), otter (China), red fox (U.S., Canada), wolf (most sold in Alaska), wolverine (most sold in Alaska) (Andersen 1993:32). Markets for some furs, such as wolf, ground squirrel, marmot, and wolverine, are primarily within Alaska.

8. Diversity and Economic, Cultural, Social, and Nutritional Elements (a pattern that includes taking, use, and reliance for subsistence purposes upon a wide diversity of fish and game resources and that provides substantial economic, cultural, social, and nutritional elements of the subsistence way of life)

Taking furbearers commonly is part of a diverse annual cycle of harvest activities in rural areas (Wolfe 1991). Furbearers are part of a larger mix of resources taken seasonally in communities supported by "mixed, subsistence-cash economies", where harvesting wild foods provides a major part of the community's food supply (Andersen 1993; Stanek 1987; Sumida and Andersen 1990; Wolfe 1991). Furbearers generally represent somewhat less than ten percent by weight of the wild foods consumed in a community. The furs taken are commonly used in clothing that enable persons to successfully survive in severe winter conditions. Some fur products are

considered superior to purchased substitutes. Furs commonly are taken winter and spring when major food harvest activities are relatively low. Local clothing styles and ceremonial regalia commonly incorporate furs as trim and other components, and are used to identify social and cultural groups. During winter, trapping occurs as part of multipurpose trips that produce furs, wood for heating and construction, and some fresh meat and fish for humans and dogs. Studies have shown that most trappers' net earnings were modest during the mid-1980s to mid-1990s (Andersen 1993; Stamek 1987; Sumida and Andersen 1990; Wolfe 1991) – on the order of hundreds of dollars per year. However, the additional income was commonly important for households with low annual incomes, and the income came at times of the year when seasonal employment was typically low.

SOURCES:

Alaska Department of Fish and Game
1999 Community Profile Database. Division of Subsistence, Alaska Department of Fish and Game, Juneau.

Andersen, David B.

1993 Trapping in Alaska and the European Economic Community Import Ban on Furs Taken With Leghold Traps. Technical Paper No. 223. Division of Subsistence, Alaska Department of Fish and Game, Juneau.

Andersen, David B.

1996 Alaska Village Trappers. Videotape. Alaska Department of Fish and Game, Division of Subsistence.

Andrews, Elizabeth

1988 The Harvest of Fish and Wildlife for Subsistence by Residents of Minto, Alaska. Technical Paper No. 137. Division of Subsistence, Alaska Department of Fish and Game, Juneau.

Clark, A. McFadyen

1981 Koyukon. In William C. Sturtevant, ed., Handbook of North American Indians, v. 6, Subarctic, p. 582-60, Smithsonian Institute, Washington.

Coffing, Michael W.

1991 Kwethluk Subsistence: Contemporary Land Use Patterns, Wild Resource Harvest and Use, and the Subsistence Economy of a Lower Kuskokwim River Area Community. Technical Paper No. 157. Division of Subsistence, Alaska Department of Fish and Game, Juneau.

International Association of Fish and Wildlife Agencies

1993 U.S. Fur Harvest (1970-1992) and Fur Value (1974-1992) Statistics by State and Region. Fur Resources Committee, International Association of Fish and Wildlife Agencies, Baton Rouge.

Marcotte, James R.

1986 Contemporary Resource Use Patterns in Hushia, Alaska, 1983. Technical Paper No. 133. Division of Subsistence, Alaska Department of Fish and Game, Fairbanks.

Murphy, Robert F., and Julian Steward

1956 Trappers and Trappers: Parallel Process in Acculturation. Economic Development and Cultural Change 4(4):335-355.

- Novak, Milan, Martyn E. Obbard, James G. Jones, Robert Newman, Annie Booth, Andrew J. Satterthwaite, and Greg Linscombe
1987 Furbearer Harvests in North America, 1600 – 1984. Supplement to Wild Furbearer Management and Conservation in North America. Ministry of Natural Resources, Ontario.
- Stanek, Ronald T.
1987 Historical and Contemporary Trapping in the Western Sustina Basin. Technical Paper No. 134. Division of Subsistence, Alaska Department of Fish and Game, Anchorage.
- Stokes, Jeff
1985 Natural Resource Utilization of Four Upper Kuskokwim Communities. Technical Paper No. 86. Division of Subsistence, Alaska Department of Fish and Game.
- Sumida, Valerie A. and David B. Andersen
1990 Patterns of Fish and Wildlife Use for Subsistence in Fort Yukon, Alaska. Technical Paper No. 179. Division of Subsistence, Alaska Department of Fish and Game, Fairbanks.
- Wolfe, Robert
1991 Trapping in Alaska Communities with Mixed, Subsistence-Cash Economies. Technical Paper No. 217. Division of Subsistence, Alaska Department of Fish and Game.
- Zagoskin, Lavrentii Alekseevich
1967 Lieutenant Zagoskin's Travels in Russian America, 1842-1844. Henry N. Michael, ed., Anthropology of the North: Translations from Russian Sources 7, Toronto, published for the Arctic Institute of North America by the University of Toronto Press.

**Fig. 1. Examples of Furbearer Harvest Periods
for Selected Alaska Communities**

Source: Key Respondent Interviews, Division of Subsistence, ADF&G

LEGEND: X (Harvesting Occurs), x (Harvesting Occasionally Occurs)

Minto, Interior Region, ca. 1980-84

	1	2	3	4	5	6	7	8	9	10	11	12
Beaver	Xxxxx	Xxxxx	Xxxxx	Xxxox	xx						Xxxxx	Xxxxx
Fox	xoooo	xoooo									xoooo	xoooo
Land otter	xoooo	xoooo	xoooo	xx.							xoooo	xoooo
Lynx	xoooo	xx.									xoooo	xoooo
Marten	Xxxxx	Xxxxx									Xxxxx	Xxxxx
Mink	xoooo	xoooo									xoooo	xoooo
Muskrat	xoooo	xoooo	xoooo	xoooo	xoooo	xx.					xoooo	xoooo
Wolf	xoooo	xoooo	xoooo								xoooo	xoooo

Source: Andrews (1988:66)

Nikolski, Interior Region, ca. 1983

	1	2	3	4	5	6	7	8	9	10	11	12
Beaver	xoooo	xoooo	xoooo	xoooo	xoooo	Xxxxx	xoooo	xoooo	xoooo	x		xx
Fox	xoooo	xoooo	xxx.								x	xoooo
Land otter	xoooo	xoooo									xooo	xoooo
Lynx	xoooo	xoooo	xxx.								xoo	xoooo
Marten	xoooo	xoooo									xxx	xoooo
Mink	xoooo	xoooo									xxx	xoooo
Muskrat					xx	xoooo	xoo					
Wolf	xoooo	xoooo	xoooo						x	xoooo	xoooo	xoooo

Source: Stokes (1988:77)

Fort Yukon, Interior Region, ca. 1987

	1	2	3	4	5	6	7	8	9	10	11	12
Beaver	xoooo	xoox	xoooo	xoooo							xx	xoooo
Muskrat		x	xoooo	xoooo	xoooo	xoooo						
Other furbearers	xoooo	xoooo	xoooo								xoooo	xoooo
Squirrel (ground)						xoooo	xoooo	xoooo	xoooo	xoooo		
Squirrel (red)	xoooo	xoooo	xoooo						x	xoooo	xoooo	

* Harvests in 1986-87 included lynx, marten, fox, mink, otter, weasel, wolf, and wolverine

Source: Sumida and Andersen (1990:24, 38)

Kwethluk, Western Region, ca 1980s

	1	2	3	4	5	6	7	8	9	10	11	12
Beaver	xoooo	xoooo	xoooo	xoooo	Xxxxx	x			x	xoooo	xoo	xoooo
Fox	Xxxxx	xoooo	xoooo	xoo						x	xoooo	xoooo
Land otter	xoooo	xoooo	xoooo	x					x	xoooo	xoo	xoooo
Mink	xoooo	xoooo	xoo							x	xoooo	xoooo
Muskrat				xXX	xoooo	x			xx	xoooo	xoo	xoooo
Squirrel (ground)			x	xoooo	xoo				XXX	xoooo	x	

* Other furbearers harvested included wolf, wolverine, lynx, marten, marmot, and weasel

Source: Coffing (1991:62, 178)

**Fig. 1. Examples of Furbearer Harvest Periods
for Selected Alaska Communities**

Source: Key Respondent Interviews, Division of Subsistence, ADF&G

LEGEND: X (Harvesting Occurs), x (Harvesting Occasionally Occurs)

Togiak, Southwest Region, ca. 1983												
Beaver	xxxx	xxxxx	xxxxx	xxxxx	xxxx		xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxx
Fox	xxxxx	xxxxx	xxxxx								xx	xxxxx
Land otter	xxxxx	xxxxx	xxxxx	xxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxxx	xxxxx	
Marmot	xxxx	xxxx	xxxx	xxxx								xx
Mink	xxxxx	xxxxx	xxxxx									
Muskrat	xxxxx	xxxxx	xxxxx	xxxxx	xx						xx	xxxxx
Squirrel (ground)					xxxxx	xxxxx	xx					
Weasel	xxxx	xxxx	xxxx	xxxx							xx	
Wolverine	xxxx	xxxx	xxxx	xxxx							xx	xxxx

Source: Wolfe et al (1984:327-328)

Yakutat, Southeast Region, ca. 1984												
Beaver	xxxxx	xxxxx	xxxxx	xxxxx	xxx						xxx	xxxx
Fox	xxxx	xx									xxx	xxxx
Land Otter	xxxx	xx									xxx	xxxx
Lynx	xxxx	xxxx	xxxx	xxxx	xx						xxx	xxxx
Marten	xxxx	xx									xxx	xxxx
Mink	xxxx	xx									xxx	xxxx
Wolf	xxxx	xxxx	xxxx	xxxx	xx						xxx	xxxx
Wolverine	xxxx	xx									xx	xxxx

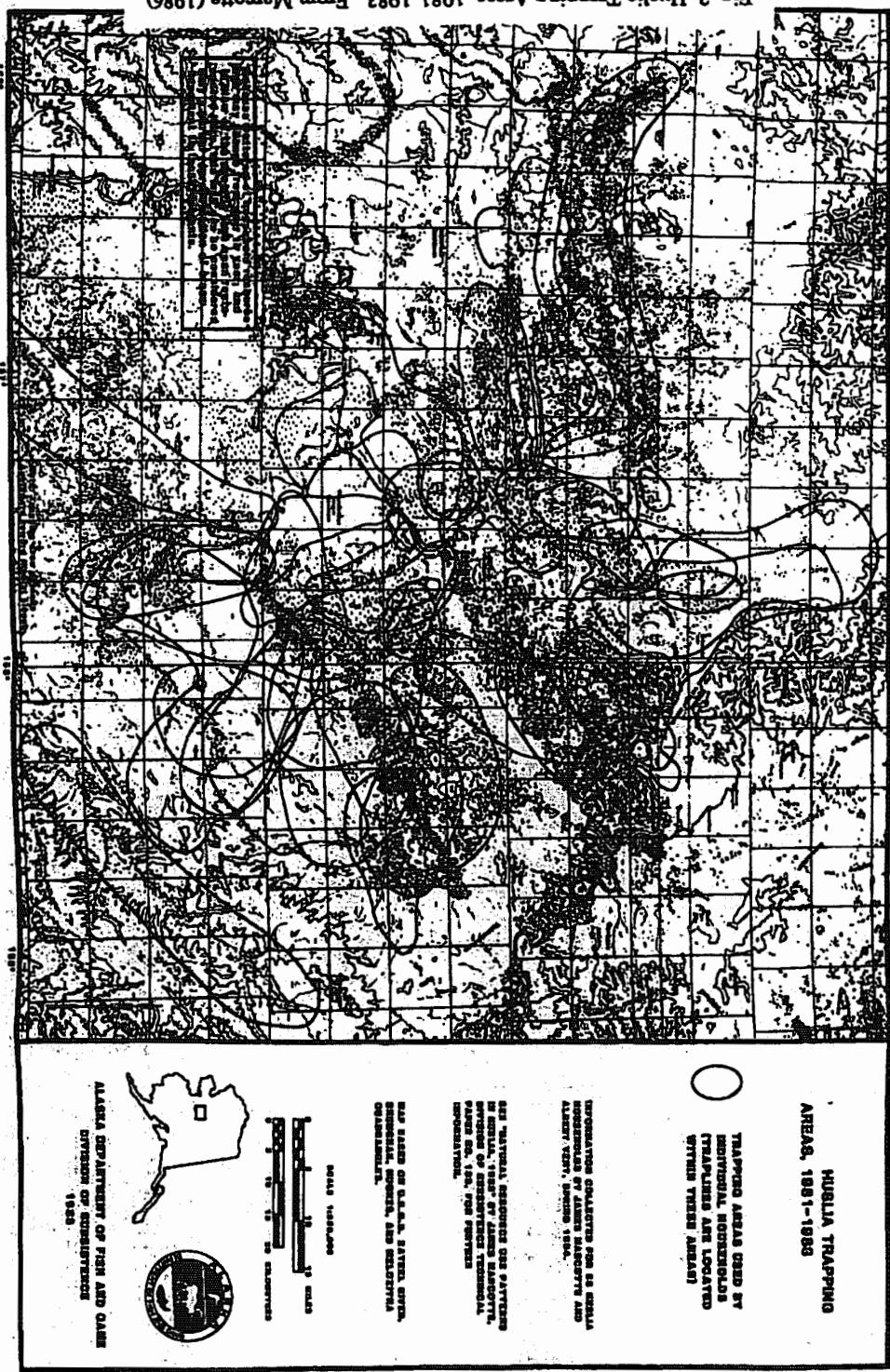
Source: Mills and Friman (1986:58)

Upper Yentna, Southcentral Region, ca. 1982												
Beaver	xxxxx	xxxxx	xxxxx	xxxxx	xxx	xxxx	xxxx	xxx			xxx	xxxxx
Coyote	xxxx										xxx	xxxx
Fox	xxxx	xxxx										
Land Otter	xxxx	xxxx									xxx	xxxx
Lynx	xxxx	xxxx	xx								xxx	xxxx
Marten	xxxx	xxxx	xxxx								xxx	xxxx
Mink	xxxx	xxxx									xxx	xxxx
Muskrat					xx	xxxxx	xxxxx	x				
Squirrel (flying)	xxxx	xxxx	xxxx								xxxx	xxxx
Squirrel (red)	xxxx	xxxx	xxxx								xxxx	xxxx
Weasel	xxxx	xxxx									xxx	xxxx
Wolf	xxxx	xxxx	xx								xx	xxxx
Wolverine	xxxx	xxxx									xxx	xxxx

Source: Fall, Foster, and Stanek (1983:22)

9

FIG. 2. Huslia Trapping Areas, 1981-1983. From Marcotte (1986).



Selected Traplines Used by Minto Trappers, 1960-84.

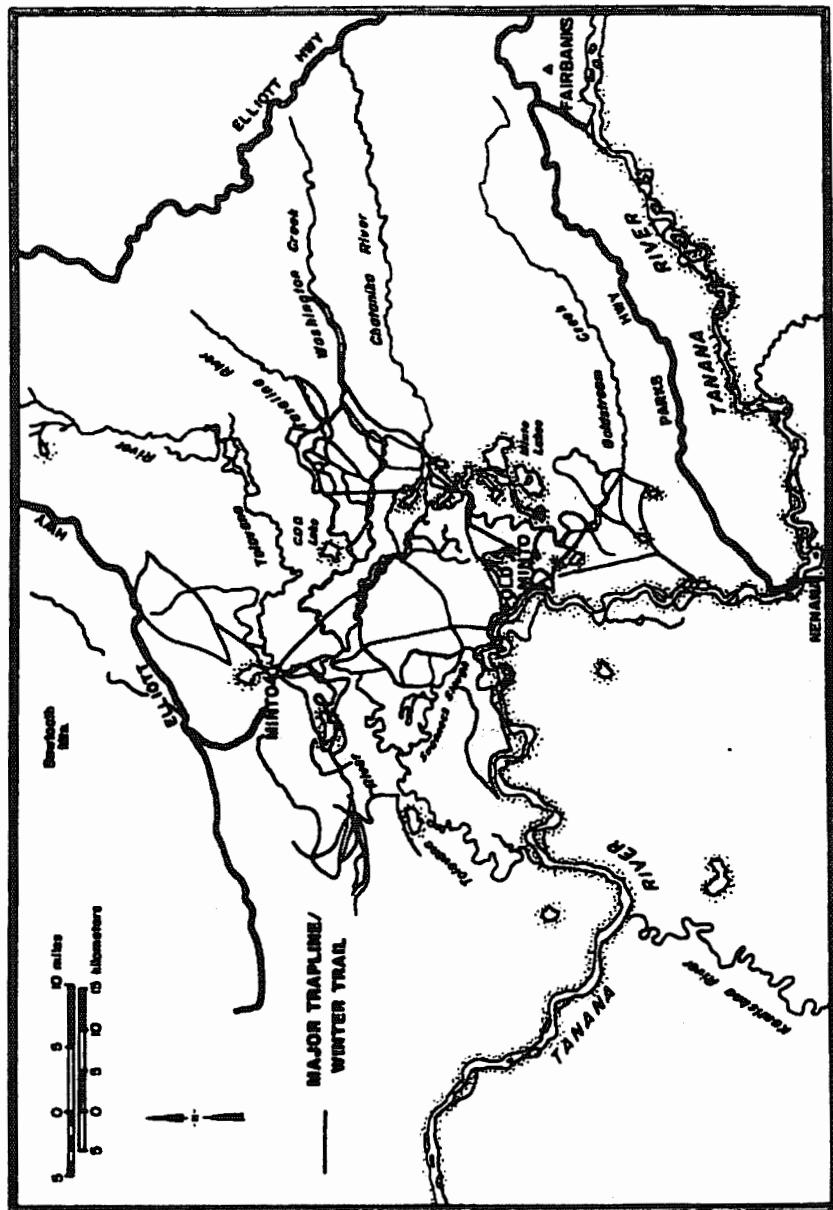


Fig. 3. Selected Traplines Used by Minto Trappers, 1960-84. From Andrews (1988).



Fig. 4. Contemporary Trapping Areas, Western Susitna Basin, 1984. Note that Small, Often Recreational Trapping Areas Commonly are Incorporated within the Boundaries of about 8 Large (> 100 sq. miles) Trapping Areas. (see text for explanation)

From Stanek (1987).

Table A. Furbearer Harvest Estimates by Source of Information

Source: Household Surveys in Subsistence Areas (mid-1980s to mid-1990s) (See Tables 1 and 9)													
	Beaver	Coyote	Fox	Lynx	Marmot	Marten	Mink	Muskrat	Otter, Land	Squirrel	Weasel	Wolf	Wolverine
Estimate	20,130	405	15,397	2,385	40	32,530	12,405	44,523	3,124	8,653	1,040	1,088	873
Low*	8,455	170	6,467	993	17	13,663	5,210	18,700	1,312	3,634	437	456	387
High*	31,805	640	24,328	3,737	63	51,397	19,801	70,346	4,938	13,672	1,843	1,715	1,380

* Low and high confidence range about the estimate (+/- 58%) due to potential household sampling error.

Source: Records of Pelts Exported from Alaska (1980-86) (See Table 2)													
	Beaver	Coyote	Fox	Lynx	Marmot	Marten	Mink	Muskrat	Otter, Land	Squirrel	Weasel	Wolf	Wolverine
Mean	7,864	213	5,531	2,084	—	22,051	11,186	13,159	1,686	—	415	1,046	572
Low*	3,570	83	963	574	—	5,424	2,794	898	1,127	—	248	682	389
High*	17,090	490	15,535	5,652	—	38,053	26,184	85,220	2,389	—	678	1,600	937

* Low and high years

Source: Records of Pelts Sealed by Residents of Subsistence Areas (See Tables 3-8)													
	Beaver (84-88)	Coyote	Fox	Lynx (79-88)	Marmot	Marten	Mink	Muskrat (79-88)	Otter, Land	Squirrel	Weasel (79-88)	Wolf (79-88)	Wolverine (79-88)
Mean	6,403	—	—	1,822	—	—	—	—	1,476	—	—	871	500
Low*	1,993	—	—	623	—	—	—	—	880	—	—	486	329
High*	15,111	—	—	5,604	—	—	—	—	2,210	—	—	1,269	777

* Low and high years

**Table 1. Furbearer Harvests in Alaska,
by Residents of Game Management Units with Subsistence Uses**
(Source: Household Survey Estimates, Division of Subsistence, ADF&G)

GMU	Beaver	Coyote	Fox	Lynx	Marmot	Marten	Mink	Muskrat	Land	Otter,	Squirrel	Weasel	Wolf	Wolverine
1	2	28	12	0	0	211	139	0	18	0	28	28	26	0
2	323	0	6	0	0	2,688	349	0	96	0	17	259	0	0
3	87	0	0	0	0	651	738	0	148	0	0	0	0	0
4	23	0	158	0	0	1,183	797	0	84	352	1	0	0	0
5	18	4	0	7	0	76	58	0	11	7	11	69	43	0
6	73	10	0	0	0	49	188	0	59	0	27	0	18	0
8	75	0	452	0	0	102	0	0	265	19	182	0	0	0
9	734	46	1,011	92	0	35	404	18	328	113	8	89	53	0
10	0	0	372	0	0	0	4	0	8	25	0	0	0	0
11	28	50	184	106	3	176	45	607	16	58	63	14	21	0
12	68	46	341	57	0	3,318	188	4,480	12	111	106	34	50	0
13	312	181	833	280	7	1,327	225	1,177	43	673	208	113	55	0
15	0	2	0	0	0	0	0	0	12	69	14	0	0	0
16	42	0	7	0	0	12	3	0	1	21	8	0	0	0
17	4,074	7	815	10	0	619	388	283	500	886	0	78	44	0
18	7,557	0	6,207	34	0	1,082	8,139	26,756	1,084	2,253	133	19	2	0
19	1,836	0	242	128	0	4,285	147	50	145	2	0	14	80	0
20	1,140	52	357	128	9	3,753	198	804	57	138	76	29	23	0
21	1,528	0	304	118	0	2,790	14	189	96	0	51	60	7	0
22	242	0	1,448	0	0	0	6	629	39	1,152	26	40	22	0
23	127	0	721	0	0	38	28	1,847	50	300	13	148	239	0
24	663	1	401	408	0	2,585	0	484	33	0	0	17	30	0
25	1,010	5	1,250	798	0	6,608	327	7,128	23	1,682	48	44	66	0
28	74	5	477	202	21	1,025	0	85	1	781	23	37	94	0
Total	20,130	405	15,397	2,385	40	32,630	12,405	44,523	3,124	8,653	1,040	1,088	873	0
Low*	8,455	170	6,467	993	17	13,663	5,210	18,700	1,312	3,634	437	456	387	0
High	31,805	640	24,328	3,737	63	51,397	19,801	70,348	4,936	13,872	1,843	1,715	1,380	0

* Low and high confidence range about the estimate (+/- 58%) due to potential household sampling error.

Table 2. Furs Traded from Alaska, 1743-1996

Sources: Novak et al (1987) Furbearer Harvests in North America, 1800-1984, ADF&G Records, and IAFWA (1983) U.S. Fur Harvest (1970-82) and Fur Value (1974-1992) Statistics by State and Region

Year	Beaver	Coyote	Fox	Lynx	Marten	Mink	Muskrat	Land Otter	Sea Otter	Weasel	Wolf	Wolverine
RUSSIAN PERIOD												
1743										600		
1744			2,000							600		
1745			2,000									
1746			2,240							1,870		
1747											320	
1748			3,001								362	
1749			2,760								1,098	
1750			1,080								522	
1751												
1752			1,800								820	
1753											1,920	
1754			7,044								790	
1755				1,304							3,250	
1756												
1757											7,890	
1758			2,869								2,978	
1759			1,813								5,852	
1760												
1761											2,444	
1762			3,538					18			5,057	
1763			186								4,119	
1764			582								3,036	
1765												
1766			2,892					70			2,360	
1767												
1768			4,695								1,855	
1769			1,045								1,440	
1770			3,081								6,835	
1772			4,367								1,416	
1773			1,187								2,701	
1774			1,130		19						2,460	
1776			4,886					86			1,904	
1777			1,861								3,857	
1778			1,127		39,500						444	
1779			6,215					155			5,352	
1780			1,584								936	
1781			5,417						1		3,700	
1782			310								270	
1784			609								965	
1785			8,815					640			5,272	
1786			8,940					147			5,413	
1787			183								1,388	
1788	138		7,819					1,385			7,725	
1789			4,850								61,420	
1790			4,989					852			4,502	
1793			946								760	
1795	280		5,389						1,115		4,582	
1797	175		482					8			555	5
1798	1,075		14,238	31	430	182		2,212			8,714	5
												10

Table 2. Furs Traded from Alaska, 1743-1996

Sources: Novak et al (1987) Furbearer Harvests In North America, 1800-1984, ADF&G Records, and IAFWA (1993) U.S. Fur Harvest (1970-92) and Fur Value (1974-1992) Statistics by State and Region

Year	Beaver	Coyote	Fox	Lynx	Marten	Mink	Mustel	Land Otter	Sea Otter	Weasel	Wolf	Wolverine
1789									1,200		5	
1800									2,000		5	
1801									2,000		5	
1802		8,295						223	1,479		5	
1803	7,985	18,726	513	7,230	470		3,784	20,277		5	229	
1808	8,589	85	300	138			1,342	5,289			5	
1807	2,943	6,003	72	354	48		430	2,893		5	168	
1808	84	2,247	867	2,308	124		814	2,789		5	112	
1809	90	80							1,486		5	
1810		7,855			29		521	6,198		5	1	
1811		2,858			7		84	90			5	
1812		6,827	83	452	32		26	6,096		5	102	
1813											46	
1814	5,272	4,901	34	1,397	122		354	6,118		5	12	
1815	2,732	7,851	38	1,287	85		1,901	5,854		5	186	
1816	220	2,333		40			147	2,120			5	
1817	1,980	1,185	25	1,348			571	1,017		5	46	
1818	5,888	9,632	237	857	892		1,775	2,185		5	118	
1819	2,014	3,315	4	215	1,365		707	3,108		5	142	
1820	4,300	1,873		160	1,300		550	602		5	37	
1821	4,483	12,039	368	824	488	214	654	2,532		9	63	
1822	1,860	5,285	62	281	714	214	1,371	828		9	20	
1823-40 avayr	7,365	7,117.5	191	712	714	214	1,371	1,129		9	74	
1841	12,000	7,117.5	191	712	714	214	1,371	1,129		9	74	
1842	7,499	7,117.5	191	609	714	214	1,371	1,129		9	74	
1843-62 avayr	7,499	6,243	337	609		313	3,455	1,295			1	

AMERICAN PERIOD

1834	430	42,714	723	4,868	57,858	133,312	3,897		14,278	757	279
1835	11,138	287	36,630	1,338	3,314	60,501	127,801	3,224	19,279	642	260
1836	25,046	1,098	39,601	2,421	1,306	44,018	163,772	3,235	11,012	904	290
1837	1,882	1,330	41,043	2,089	18,969	52,438	231,842	3,007	8,453	730	389
1838	30,889	1,355	34,160	2,130	9,237	39,868	291,140	2,882	9,755	640	248
1839	31,397	1,507	39,129	2,750	1,287	42,883	417,442	2,769	13,828	405	228
1840	14,630	2,080	24,035	1,698	9,826	43,702	453,300	2,804	9,895	444	326
1841	20,806	1,208	28,536	781	707	31,782	511,805	2,188	8,580	599	232
1842	12,071	480	21,280	639	240	53,060	267,356	2,821	11,280	484	161
1843	15,148	378	13,738	713	8,182	33,705	212,352	1,547	3,892	351	92
1844	8,518	787	15,433	990	13,352	61,038	142,530	2,772	5,508	418	87
1845	9,553	474	16,001	822	453	31,339	152,542	1,721	5,987	290	108
1846	18,929	389	12,308	601	2,670	84,837	137,658	3,354	6,629	288	157
1847	27,349	900	11,746	883	13,172	42,772	182,989	2,809	4,815	480	157
1848	16,363	173	3,819				139,456				
1849	23,394	355	5,665	854	14,141	39,348	142,843	2,287	8,801	477	369
1850	19,095	800	6,020	680	8,200	28,000	198,000	2,680	6,740	1,070	490
1851	17,506	600	5,006	800	9,500	22,000	281,000	2,400	8,000	782	500
1852	18,817	459	2,890	600	8,350	39,200	163,000	2,850	5,230	1,153	350
1853	15,163	410	3,205	900	5,500	25,000	138,000	2,340	3,000	585	400
1854	17,455	2,075	3,100	7,000	27,700	110,000	3,100		3,300		300
1855	16,140		1,130	2,800	4,200	11,100	45,000	2,300	3,000		350

Table 2. Furs Traded from Alaska, 1743-1996

Sources: Novak et al (1987) Furbearer Harvests In North America, 1600-1984, ADF&G Records, and IAFWA (1993) U.S. Fur Harvest (1970-92) and Fur Value (1974-1992) Statistics by State and Region

Year	Beaver	Coyote	Fox	Lynx	Marten	Mink	Muskrat	Land Otter	Sea Otter	Weasel	Wolf	Wolverine
1956	14,350	1,510	2,200	3,850	35,000	84,000	3,300		1,500	900	200	
1957	24,484	1,140	1,500	2,710	15,200	100,000	3,890		2,200	1,080	350	
1958	14,712	24	1,362	805	2,388	10,437	43,289	1,657	2,207	227	213	
1959	24,000		2,581	782	3,288	20,640	132,530	3,681	1,993	171	198	
1960	25,000		2,800	900	5,000	30,000	91,000	3,500	1,700	720	282	
1961	15,000	50	1,550	1,100	4,500	9,000	36,000	1,200	1,400	140	175	
1962	20,000	250	2,500	2,500	8,000	22,000	85,000	3,000		1,000	780	450
1963	14,046	69	2,200	4,700	8,200	23,000	49,000	2,300	1,500	800	250	
1964	9,200	200	2,998	3,957	8,888	15,823	33,000	2,781	945	780	500	
1965	11,326		3,630	8,180	7,500	15,200	27,100	3,960	1,240	1,360	680	
1966	12,000		2,000	3,000	8,000	15,000	25,000	4,000	1,200	1,880	700	
1967	13,285		3,760	1,580	7,180	12,100	48,600	3,380	2,270	1,700	240	
1968	9,500	300	4,500	2,000	6,000	10,000	40,000	2,000		1,000	1,045	250
1970	3,920		6,100	1,400	8,100	7,200	16,800	1,600	600	635		
1971	5,952		4,060	3,200	8,400	3,420	16,600	2,000	580	1,335	548	
1972	10,864		7,100	5,130	8,700	7,880	31,900	2,570	1,700	1,071	848	
1973	8,400		16,920	8,970	17,970	10,700	40,280	2,540	2,470	970	1,037	
1974	7,250		6,621	3,848	11,730	6,760	8,000	2,074	972	1,080	805	
1975										1,243	984	
1976	11,033		15,888	2,262	22,711	14,704	59,065	3,365	1,120	1,078	839	
1977	8,023	234	7,720	2,027	29,000	11,025	47,069	2,193	808	884	883	
1978	5,423	160	15,462	2,382	35,819	12,750	39,983	1,980	1,765	856	730	
1979	12,785	143	14,774	2,731	36,076	10,487	59,548	2,200	2,189	633	69	
1980	11,341	160	14,901	3,408	36,053	22,120	85,220	2,381	338	740	56	
1981	8,129	160	15,535	5,221	33,705	25,028	23,818	1,834	248	682	630	
1982	6,654	150	7,228	5,852	30,481	14,350	11,525	1,591	447	818	787	
1983	6,991	160	8,457	3,132	24,913	28,184	6,734	1,918	501	729	601	
1986	17,090	216	4,021	1,235	27,407	5,021	8,731	1,869	437	798	633	
1987	16,387	146	5,464	1,049	27,153	10,008	10,244	2,389	407	1,097	547	
1988	9,470	157	4,696	1,198	30,081	7,857	7,382	1,618	628	855	471	
1989	6,740	83	1,308	1,300	20,534	9,128	898	1,314	845	934	453	
1990	5,280			1,248						1,100	507	
1991	7,443	490	4,798	2,087	23,519	8,850	7,855	1,378	678	1,209	937	
1992	3,570	286	2,799	1,408	6,887	11,126	4,713	1,250	283	1,114	418	
1993	4,995	488	4,163	1,225	11,889	4,194	10,101	1,127	348	1,600	496	
1994	4,493	215	1,238	807	9,538	2,784	2,587	1,393	283	1,483	629	
1995	3,814	196	963	574	5,424	4,162	3,084	1,508	280	1,251	389	
1996	5,776	150	1,864	1,718	21,156	5,977	1,233	1,749	409	1,280	531	
Mean 80-96	7,884	213	5,531	2,084	22,051	11,188	13,159	1,686	415	1,048	572	
High	17,090	480	15,535	5,852	38,053	28,184	85,220	2,389	678	1,800	937	
Low	3,570	83	963	574	5,424	2,784	898	1,127	248	682	389	

Sources: Novak, Milan, Martyn E. Obbard, James G. Jones, Robert Newman, Annie Booth, Andrew J. Satterthwait Greg Linscombe (1987) Furbearer Harvests In North America, 1600-1984, Supplement to Wild Furbearer Management and Conservation in North America, Ministry of Natural Resources, Ontario.

U.S. Fur Harvest (1970-92) and Fur Value (1974-1992) Statistics by State and Region. International Association and Wildlife Agencies, 1993.

Table 3. Beaver Pelts Sealed In Alaska, 1984-1998
By Year and Game Management Unit
Source: Furbearer Sealing Records, ADF&G

Year	1AC	NONSUBSISTENCE AREAS										SUBSISTENCE AREAS										Non-Subsistence Areas Seals	Subsistence Areas Seals	TOTAL									
		1BD	2	3	4	5	6	8	9	10	11	12	13	16B	17	18	19	20CD EF	21	22	23	24	25	26									
1984	75	37	292	172	172	375	4	233	57	14	1	34	147	227	0	21	44	90	217	1,660	1,688	703	311	719	1	38	254	334	0	0	1,123	6,795	7,918
1985	42	57	469	185	263	1,141	39	379	64	4	6	61	243	322	0	56	6	216	198	2,624	1,598	703	1,843	5	34	648	482	0	0	2,147	11,037	13,184	
1986	160	78	368	134	269	994	122	411	67	5	8	103	96	598	0	46	55	330	379	2,618	4,165	1,598	902	1,842	8	58	913	528	0	0	2,001	15,111	17,112
1987	93	54	290	78	126	1,214	21	354	125	4	8	30	88	887	0	21	18	308	272	3,021	4,768	1,578	610	1,713	68	78	514	448	0	0	1,855	14,701	16,566
1988	29	10	218	41	157	711	21	103	36	5	3	2	35	249	0	24	15	183	221	970	3,247	1,061	370	1,121	19	30	318	313	0	0	1,166	8,344	8,510
1989	44	65	154	29	35	478	83	406	48	8	4	20	78	257	0	11	14	160	119	2,288	2,118	513	117	289	34	64	282	178	0	0	805	6,079	6,884
1990	22	69	155	67	87	372	2	172	25	4	3	66	57	211	0	17	19	135	109	1,097	1,135	376	341	442	11	37	388	180	0	0	752	4,837	5,589
1991	57	34	227	33	34	620	0	257	80	11	8	81	79	388	0	4	40	181	194	1,169	1,447	513	308	613	44	7	127	125	0	0	1,005	5,478	6,481
1992	21	38	258	94	21	369	0	64	37	0	1	23	65	289	0	5	38	227	89	463	817	139	105	249	16	8	108	72	0	0	801	2,762	3,563
1993	77	60	238	93	39	748	3	204	55	0	9	44	68	201	0	0	36	226	48	676	679	230	214	432	42	10	320	90	0	0	1,273	3,588	4,859
1994	29	56	182	32	21	611	2	161	25	8	0	48	29	187	0	12	20	274	45	1,050	478	188	228	417	17	28	147	133	0	0	911	3,495	4,408
1995	74	57	266	81	58	278	0	281	26	0	4	48	50	68	0	18	14	272	13	453	634	80	128	284	14	48	248	89	0	0	882	2,791	3,863
1996	41	102	280	107	68	772	43	291	44	0	1	91	38	122	0	24	27	233	88	877	1,246	421	293	613	64	40	654	197	0	0	1,400	5,407	6,807
1997	98	71	244	95	71	587	22	249	58	0	7	80	42	92	0	0	22	191	42	393	1,019	203	178	480	66	8	408	107	0	6	1,184	3,828	4,790
1998	27	67	142	65	35	482	0	117	35	2	3	31	43	85	0	1	1	181	38	436	321	54	148	267	27	3	151	54	0	7	818	1,993	2,811
Mean	59	60	252	87	97	650	24	245	52	4	4	49	77	279	0	17	25	214	137	1,187	1,788	608	330	742	28	32	365	228	0	1	1,206	6,403	7,608
High	160	102	469	185	269	1,214	122	411	125	14	9	103	243	887	0	56	55	330	379	3,021	4,768	1,598	902	1,843	84	79	913	528	0	7	2,147	15,111	17,112
Low	21	10	142	29	21	278	0	64	25	0	0	2	29	85	0	0	1	90	13	363	321	54	105	249	1	3	109	54	0	0	752	1,993	2,811
%Diff	87%	80%	70%	84%	82%	77%	100%	84%	80%	100%	88%	88%	80%	0%	100%	88%	73%	97%	88%	93%	97%	88%	88%	98%	96%	88%	80%	0%	100%	85%	87%	84%	

Table 4. Lynx Pelts Sealed in Alaska, 1979-1998
By Year and Game Management Unit
Source: Furbearer Sealing Records, ADF&G

Year	NONSUBSISTENCE AREAS												SUBSISTENCE AREAS												Non-Subsistence Areas	Subsistence Areas	TOTAL						
	1AC	7	14	15	16A	20AB	18D	2	3	4	5	6	8	9	10	11	12	13	16B	17	18	19	20CD EF	21	22	23	24	25	26	27			
1979	0	0	5	13	0	0	1	0	0	0	0	0	0	141	0	53	92	36	6	25	62	218	347	58	257	408	279	707	2	0	18	2,685	2,703
1980	0	0	2	3	0	0	0	0	0	1	0	0	0	118	0	57	138	40	1	40	48	171	382	118	86	299	427	1,068	4	2	5	2,996	3,001
1981	0	3	7	20	0	0	0	0	1	0	0	1	0	81	0	57	214	122	2	17	50	281	654	480	478	481	779	1,433	10	55	30	5,176	5,206
1982	0	4	21	44	0	0	39	0	0	0	5	0	0	98	0	138	211	205	6	25	65	144	924	357	807	281	893	1,576	9	23	68	5,604	5,673
1983	1	2	6	31	4	147	14	0	0	0	3	1	2	25	0	111	151	138	6	12	23	53	221	128	432	84	427	1,027	2	0	191	2,658	3,049
1984	1	2	15	28	0	97	1	0	0	0	0	1	0	52	0	78	63	48	1	28	23	30	127	124	154	28	162	621	3	0	143	1,684	1,707
1985	0	15	8	47	2	125	1	0	0	0	2	2	0	45	0	22	73	23	0	8	13	33	123	184	23	45	202	577	2	3	197	1,301	1,498
1986	0	23	6	53	0	90	1	0	0	0	0	7	0	51	0	18	80	9	6	13	11	27	124	68	18	17	127	488	0	0	172	1,062	1,234
1987	0	0	0	7	0	79	0	0	0	0	0	2	0	10	0	0	72	1	0	1	10	37	87	71	3	0	95	552	1	0	88	952	1,038
1988	0	1	0	4	0	111	0	0	0	0	10	0	0	12	0	1	70	0	0	1	17	23	128	34	4	0	78	708	0	0	116	1,082	1,198
1989	0	1	0	2	0	140	0	0	0	0	6	0	0	12	0	0	77	1	0	1	7	25	207	16	3	0	113	706	0	0	143	1,173	1,316
1990	0	0	13	1	0	107	0	0	0	0	0	0	0	15	0	38	134	111	0	2	4	18	179	17	2	0	138	491	4	0	121	1,153	1,274
1991	0	0	15	0	0	316	7	0	0	0	0	0	0	26	0	108	174	123	1	5	4	38	389	70	5	1	159	648	1	0	331	1,766	2,087
1992	1	1	11	2	2	187	27	0	0	0	0	4	0	47	0	57	232	130	1	18	18	32	271	26	10	0	111	216	3	0	204	1,263	1,407
1993	5	0	10	3	2	183	8	0	0	0	9	0	0	58	0	19	123	81	2	12	4	18	130	47	2	6	123	367	4	0	213	1,013	1,228
1994	1	0	0	4	0	68	0	0	0	0	5	0	0	47	0	16	87	78	0	28	8	49	38	22	4	1	35	253	3	0	74	725	789
1995	0	0	0	2	0	50	0	0	0	0	5	0	0	24	0	9	42	71	0	7	13	11	78	7	1	3	30	224	0	0	52	623	575
1996	0	18	3	34	0	146	4	0	0	0	2	1	0	36	0	37	170	200	0	7	47	23	167	38	5	0	25	806	0	0	201	1,584	1,785
1997	0	31	2	116	0	364	0	0	0	0	0	0	0	24	0	51	342	380	1	13	39	6	484	28	2	0	34	787	0	8	513	2,189	2,702
1998	0	21	4	130	0	583	0	0	0	0	0	0	0	38	0	86	308	241	1	9	28	9	382	28	7	0	40	887	12	2	738	1,884	2,802
Mean	0	6	6	27	1	140	5	0	0	2	1	0	47	0	48	144	102	2	14	25	62	273	85	115	83	204	694	3	5	181	1,822	2,103	
High	5	31	21	130	4	583	39	0	1	0	10	7	2	141	0	138	342	380	8	40	65	281	924	480	807	481	779	1,576	12	55	738	5,604	5,673
Low	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	42	0	0	1	4	8	76	7	1	0	25	218	0	0	5	523	575
%DFT	100%	100%	100%	100%	100%	100%	100%	0%	100%	0%	100%	100%	100%	93%	0%	100%	88%	100%	100%	88%	94%	97%	92%	99%	100%	97%	88%	100%	100%	98%	91%	90%	

Table 5. Land Otter Pelts Sealed In Alaska, 1979-1998
By Year and Game Management Unit
Source: Furbearer Sealing Records, ADF&G

Year	NONSUBSISTENCE AREAS										SUBSISTENCE AREAS										Unit	Non-Subsistence Areas Number	Subsistence Areas Number	TOTAL									
	1AC	7	14	15	16A	20AB	1BD	2	3	4	5	6	8	9	10	11	12	13	16B	17	18	19	20C DEF										
1979	0	5	19	28	0	0	185	225	54	172	2	117	347	157	3	4	8	23	64	140	303	61	69	57	14	18	54	10	0	3	52	2,080	2,132
1980	0	8	21	48	0	0	135	138	80	169	4	31	402	145	0	4	8	25	42	168	598	58	31	72	3	29	48	10	0	8	77	2,210	2,237
1981	0	5	33	41	0	0	91	108	77	184	4	45	281	151	0	3	8	18	48	184	387	55	29	61	7	9	11	10	0	14	79	1,813	1,892
1982	0	2	11	35	0	0	86	118	67	185	1	38	214	205	0	0	8	40	31	204	171	82	24	35	5	8	7	3	0	0	48	1,497	1,545
1983	98	7	32	45	7	24	20	180	44	117	4	38	148	120	0	5	4	68	20	185	598	58	24	100	12	8	31	7	0	0	211	1,744	1,955
1984	94	19	50	46	4	8	18	193	138	167	1	34	187	144	0	3	1	19	29	221	477	80	12	69	6	5	20	11	1	0	221	1,834	2,055
1985	106	11	38	53	20	33	15	141	51	146	2	58	248	87	0	4	2	29	21	107	258	77	19	54	10	5	13	15	0	0	260	1,341	1,601
1986	95	7	37	31	12	34	19	82	45	162	3	182	111	184	0	5	4	38	54	188	389	72	37	64	5	12	22	13	0	0	218	1,649	1,885
1987	140	8	11	27	14	38	58	188	103	188	1	188	142	220	0	3	10	18	33	268	582	80	19	67	1	18	25	8	0	0	239	2,198	2,435
1988	84	1	8	17	11	43	17	82	84	119	0	74	57	139	3	2	2	23	38	145	577	54	21	46	0	8	9	4	0	0	144	1,610	1,884
1989	112	12	24	16	8	22	21	184	70	149	0	37	68	78	1	4	1	5	14	117	321	45	9	29	2	4	9	3	1	0	192	1,171	1,333
1990	119	22	10	21	7	13	22	40	46	65	1	59	80	84	0	0	1	19	8	158	333	38	4	44	1	6	5	1	0	0	162	1,018	1,205
1991	89	12	26	22	5	28	3	43	69	131	1	89	144	151	0	1	8	23	17	103	285	43	12	47	2	3	11	6	0	0	182	1,180	1,372
1992	73	5	13	38	1	20	19	88	14	148	8	74	91	104	0	1	8	24	13	84	381	27	3	14	6	3	8	7	0	0	160	1,100	1,250
1993	120	21	35	51	2	32	24	108	82	63	7	43	68	85	0	0	0	42	29	55	128	34	11	35	9	0	19	1	0	0	261	880	1,121
1994	157	5	30	14	1	18	28	232	68	82	4	78	91	70	0	3	6	81	6	129	208	18	10	38	11	6	4	6	0	0	225	1,145	1,370
1995	80	16	35	53	12	42	6	198	23	187	2	103	139	73	0	12	4	58	4	83	318	6	7	40	1	0	18	9	0	0	239	1,269	1,527
1996	123	18	40	54	11	49	28	94	67	100	0	108	128	118	0	9	5	38	18	194	467	42	11	60	9	7	41	6	0	7	285	1,541	1,838
1997	137	2	39	38	17	25	37	168	47	226	10	76	147	74	0	0	1	27	7	83	397	18	11	24	8	10	21	2	0	0	258	1,410	1,688
1998	81	2	21	33	5	15	13	267	33	143	4	27	185	60	0	1	4	18	7	38	113	6	8	10	7	8	1	3	0	5	157	928	1,085
Mean	84	9	27	36	7	22	43	139	81	144	3	75	168	118	0	3	4	31	25	143	384	48	19	48	8	8	19	7	0	2	185	1,478	1,681
High	157	22	50	54	20	49	185	267	138	226	10	198	402	220	3	12	10	88	64	265	598	85	69	100	14	29	54	15	1	14	256	2,210	2,436
Low	0	1	8	14	0	0	3	40	14	63	0	27	88	60	0	0	0	5	4	38	118	6	3	10	0	0	1	1	0	0	48	880	1,085
%QDST	100%	85%	84%	74%	100%	100%	88%	0%	80%	0%	100%	88%	83%	73%	0%	100%	100%	93%	94%	88%	81%	83%	88%	90%	100%	100%	88%	83%	100%	100%	84%	81%	65%

Table 6. Wolf Pelts Sealed in Alaska, 1979-1998
By Year and Game Management Unit
Source: Furbearer Sealing Records, ADF&G

Year	NONSUBSISTENCE AREAS										SUBSISTENCE AREAS														Unt.	Non-Subsistence Areas	Subsistence Areas	TOTAL					
	1AC	7	14	15	16A	20AB	1BD	2	3	4	5	6	8	9	10	11	12	13	18B	17	18	19	20C DEF	21	22	23	24	25	26				
1979	0	6	4	35	0	0	34	10	16	0	10	0	0	19	0	6	34	57	42	25	0	44	77	79	1	16	49	61	15	3	45	588	643
1980	0	10	3	32	0	0	38	35	12	0	2	1	0	23	0	16	20	46	21	8	0	46	101	49	6	43	81	83	28	4	45	822	887
1981	0	12	7	50	0	0	28	22	14	0	6	1	0	18	1	8	27	52	20	18	1	50	140	43	4	18	33	69	39	5	69	817	888
1982	0	4	18	41	0	0	39	15	16	0	11	1	0	13	0	27	30	69	12	41	5	32	132	90	4	48	41	44	5	0	81	693	764
1983	45	11	13	45	0	41	10	27	17	0	10	2	0	18	0	33	23	116	12	7	0	41	69	54	5	48	45	47	6	0	155	590	745
1984	24	5	6	42	9	83	14	43	7	0	16	3	0	54	0	38	22	127	10	43	3	110	40	168	12	66	58	71	13	0	149	905	1,054
1985	28	13	10	53	0	81	22	18	10	0	6	1	0	24	6	9	45	70	2	13	1	40	53	45	5	16	29	61	18	0	183	488	669
1986	29	19	3	30	0	43	20	39	10	0	13	3	0	34	4	15	37	84	9	28	4	75	52	101	8	33	38	57	13	5	124	682	808
1987	31	3	3	22	0	54	19	55	9	0	8	10	0	37	2	27	21	110	5	79	11	142	70	130	24	93	67	49	20	0	113	688	1,101
1988	28	2	1	16	1	67	10	45	10	0	7	4	0	58	6	25	19	32	6	24	17	110	44	79	21	84	77	27	41	0	113	748	889
1989	44	3	2	19	4	68	25	32	22	0	13	6	0	38	1	24	18	84	6	30	4	134	57	118	43	64	32	38	25	0	138	802	940
1990	18	3	2	8	3	67	16	68	19	0	7	4	0	26	3	37	73	144	2	19	1	128	100	91	31	41	53	69	66	0	99	898	1,095
1991	38	2	3	7	2	124	10	68	51	0	12	6	0	91	3	30	31	117	3	38	4	112	61	68	54	82	83	71	41	0	174	1,034	1,208
1992	47	3	10	16	4	106	11	105	26	0	5	3	0	33	52	95	4	22	7	36	95	84	27	69	82	85	68	0	186	928	1,114		
1993	50	6	7	23	1	259	28	103	48	0	12	2	0	71	0	17	75	179	11	53	6	84	160	68	34	48	91	68	91	0	346	1,247	1,693
1994	47	7	22	13	2	116	18	89	64	0	19	0	0	29	0	35	27	160	28	121	6	156	84	89	32	53	88	83	70	0	207	1,269	1,476
1995	54	17	24	25	1	118	7	89	40	0	9	5	0	35	0	11	47	123	14	37	9	83	135	73	29	73	107	82	39	0	237	1,037	1,274
1996	24	9	19	21	5	146	12	131	59	0	28	12	0	39	0	19	38	139	21	52	40	115	128	108	23	63	89	43	0	224	1,217	1,441	
1997	34	7	16	17	2	90	12	79	41	0	3	5	0	78	0	11	38	135	15	80	31	82	85	68	20	14	55	38	9	0	186	898	1,061
1998	27	12	28	37	10	139	17	91	34	0	7	6	0	85	0	38	82	168	24	74	15	109	68	104	39	28	38	28	41	3	263	1,071	1,324
Mean	28	8	10	28	2	79	19	60	28	0	10	4	0	41	1	23	37	108	13	41	8	87	88	84	21	48	61	57	35	1	154	871	1,028
High	54	19	28	53	10	259	39	131	59	0	26	12	0	91	6	38	75	179	42	121	40	186	160	158	54	83	107	85	91	5	346	1,269	1,693
Low	0	2	1	6	0	0	7	10	7	0	2	0	0	13	0	6	18	32	2	7	0	32	40	43	1	14	29	28	5	0	45	468	643
%DEF	100%	89%	86%	89%	100%	100%	82%	0%	88%	0%	82%	100%	0%	88%	0%	84%	76%	82%	85%	94%	100%	83%	75%	78%	98%	85%	73%	89%	95%	100%	87%	82%	60%

Table 7. Wolverine Pelts Sealed In Alaska, 1979-1998
By Year and Game Management Unit

Source: Furbearer Sealing Records, ADF&G

Year	NONSUBSISTENCE AREAS										SUBSISTENCE AREAS														Non-Subsistence Areas	Subsistence Areas	TOTAL						
	1AC	7	14	15	18A	20AB	18D	2	3	4	5	6	8	9	10	11	12	13	16B	17	18	19	20C DEF	21	22	23	24	25	26	Unk.			
1979	0	17	17	8	0	0	20	0	1	0	3	13	0	64	1	23	18	81	55	47	13	58	57	37	20	25	30	77	8	1	43	681	694
1980	0	10	8	9	0	0	10	0	1	0	2	7	0	39	0	13	29	34	28	40	6	37	71	33	15	16	46	47	10	4	27	489	518
1981	0	8	14	5	0	0	17	0	1	0	3	7	0	72	0	16	11	80	36	38	8	63	52	41	9	48	25	58	17	2	27	579	606
1982	0	10	13	7	0	0	20	1	2	0	1	10	0	68	0	21	39	98	26	52	8	63	91	75	18	34	47	85	8	1	30	777	807
1983	5	8	12	8	0	24	21	0	1	0	2	8	0	51	0	27	21	50	38	14	3	58	33	32	34	44	36	55	14	0	57	540	597
1984	10	18	11	4	0	24	18	0	3	0	2	12	0	50	0	32	21	68	23	57	8	60	39	59	20	38	18	63	4	0	65	581	648
1985	9	8	16	5	0	33	5	0	5	0	0	6	0	36	0	10	23	33	12	26	3	40	35	57	38	39	38	45	14	0	71	485	536
1986	11	11	7	10	3	22	24	0	2	0	2	18	0	70	0	9	32	42	34	40	8	52	32	30	27	68	20	58	8	1	84	573	637
1987	9	14	8	8	0	20	15	0	1	0	1	7	0	74	0	11	18	27	23	44	8	70	25	34	30	39	22	44	20	0	59	511	570
1988	10	12	10	14	2	15	18	0	0	0	0	11	0	64	0	7	15	17	13	48	6	27	31	23	18	40	23	48	6	0	63	409	472
1989	8	7	8	12	4	7	16	0	0	0	0	8	0	76	0	12	10	25	9	30	3	44	33	24	21	17	22	54	10	0	46	414	490
1990	15	11	16	10	0	9	13	0	2	0	3	10	0	70	0	13	14	35	8	50	8	66	21	23	32	28	17	51	13	0	61	468	529
1991	9	18	8	3	2	23	8	0	2	0	0	10	0	92	0	10	27	38	19	63	8	68	39	30	31	38	30	54	5	0	61	544	605
1992	4	11	9	5	1	18	15	0	1	0	2	18	0	45	0	5	13	32	12	10	13	43	15	9	28	39	10	45	17	0	48	370	416
1993	3	9	13	8	0	29	7	0	0	0	2	18	0	58	0	7	22	34	12	26	4	32	25	43	24	19	29	50	24	0	52	434	496
1994	14	13	5	12	8	19	12	0	1	0	9	19	0	69	0	11	20	35	22	58	4	103	30	28	12	16	29	55	24	0	69	558	625
1995	13	13	10	17	2	7	11	0	1	0	4	19	0	27	0	4	7	31	8	34	7	37	12	15	10	30	27	22	23	0	52	329	381
1996	6	18	9	16	3	20	19	0	2	0	12	25	0	38	0	4	14	45	25	58	19	67	23	31	25	42	28	41	20	0	72	538	610
1997	6	10	13	9	1	17	11	0	3	0	3	15	0	52	0	24	15	34	12	49	20	37	32	14	31	16	20	23	18	2	58	431	489
1998	6	12	6	5	1	16	9	0	0	0	3	17	0	38	0	8	23	28	14	27	3	42	12	16	23	12	28	18	29	2	48	348	394
Mean	7	12	11	8	1	15	14	0	1	0	3	13	0	58	0	13	20	42	21	40	8	52	35	33	23	32	27	50	14	1	55	500	555
High	15	18	17	17	6	33	24	1	5	0	12	25	0	92	1	32	39	98	55	58	20	105	91	75	38	68	47	95	29	4	72	777	807
Low	0	7	5	3	0	0	5	0	0	0	0	8	0	27	0	4	7	17	8	10	3	27	12	8	9	12	10	18	4	0	27	329	391
%DEF	100%	81%	71%	82%	100%	100%	78%	0%	100%	76%	0%	71%	0%	88%	82%	83%	85%	83%	85%	74%	87%	89%	76%	82%	79%	81%	88%	100%	63%	65%	52%		

**Table 8. Marten Pelts Sealed in Alaska, 1991-1998
By Year and Game Management Unit**
Source: Furbearer Sealing Records, ADF&G

Year	NONSUBSISTENCE AREAS										SUBSISTENCE AREAS														Non-Subsistence Areas	Subsistence Areas	TOTAL						
	1AC	7	14	15	16A	20A B	1BD	2	3	4	5	6	8	9	10	11	12	13	18B	17	18	19	20C DEF	21	22	23	24	25	26	Unk.			
1991	654	24	0	2	0	0	78	700	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	680	807	1,487		
1992	186	32	6	0	14	0	51	575	72	494	20	0	0	0	0	0	0	23	118	0	0	0	0	0	0	0	0	0	248	1,351	1,599		
1993	100	33	12	0	13	0	188	658	177	407	41	0	0	0	0	0	0	12	80	0	0	0	0	0	0	0	1	0	0	0	158	1,582	1,740
1994	333	110	28	0	21	0	231	1,043	101	241	250	0	0	0	0	0	0	41	78	0	0	1	0	0	0	0	0	0	0	492	2,024	2,516	
1995	400	102	53	0	79	0	173	1,121	210	767	118	0	0	0	0	0	0	32	160	0	0	0	0	0	0	0	0	0	0	634	2,570	3,204	
1996	503	58	102	1	130	0	343	1,052	265	1,559	103	0	0	0	0	0	0	40	452	0	0	1	0	9	0	0	0	0	0	794	3,824	4,618	
1997	371	50	138	2	53	0	407	1,076	274	678	228	0	0	0	0	0	0	84	244	0	0	0	0	18	0	0	0	0	0	814	3,008	3,823	
1998	473	55	28	0	109	0	402	655	222	559	134	0	0	0	0	0	0	77	332	0	0	1	0	8	0	0	0	0	0	686	2,280	2,965	
Mean	379	58	46	1	52	0	235	847	165	692	117	0	0	0	0	0	0	39	183	0	0	0	0	4	0	0	0	0	0	538	2,182	2,718	
High	654	110	138	2	130	0	407	1,121	274	1,559	290	0	0	0	0	0	0	84	452	0	0	1	0	18	1	0	1	0	0	794	3,824	4,618	
Low	100	24	0	0	0	0	51	555	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	158	807	1,487	
%Diff	85%	78%	100%	100%	100%	0%	87%	50%	100%	88%	100%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	100%	0%	100%	100%	0%	0%	0%	80%	79%	88%		

* Note: Marten sealing required only in Units 1 - 7, 13E, and 14 - 16 (5 AAC 82.170)

**Table 9. Furbearer Harvests In Alaska,
by Game Management Unit and Community**
(Source: Household Survey Estimates, Division of Subsistence, ADF&G)

Place	Survey Year	GMU	Otter, Land Squirrel Weasel											Wolf Wolverine Assumptions
			Beaver	Coyote	Fox	Lynx	Marmot	Marten	Mink	Muskrat	Otter, Land	Squirrel	Weasel	
Gustavus	Est	1	0	0	0	0	0	10	3	0	0	0	0	Hoonah
Haines	96	1	0	17	8	0	0	119	76	0	8	0	17	17
Hyder	Est	1	2	0	0	0	0	13	14	0	3	0	0	Kake
Klukwan	96	1	0	0	0	0	0	0	0	0	0	0	0	0
Meyers Chuck	87	1	0	0	0	0	0	3	3	0	1	0	0	Kake
Skagway	Est	1	0	9	4	0	0	66	42	0	4	0	9	Haines
Total GMU		1	2	26	12	0	0	211	139	0	16	0	26	26
Coffman Cove	Est	2	13	0	0	0	0	182	18	0	3	0	0	Craig
Craig	97	2	112	0	4	0	0	1,813	165	0	28	0	0	84
Edna Bay	Est	2	0	0	0	0	0	8	8	0	5	0	0	Port Protection
Hollis	Est	2	10	0	0	0	0	147	14	0	3	0	0	Craig
Hydaburg	97	2	0	0	0	0	0	49	33	0	8	0	0	0
Kasean	Est	2	2	0	0	0	0	31	3	0	1	0	0	Craig
Klawock	97	2	148	0	0	0	0	97	63	0	34	0	17	129
Point Baker	96	2	0	0	0	0	0	0	0	0	0	0	0	0
Port Protection	96	2	0	0	0	0	0	8	8	0	5	0	0	0
Thorne Bay	Est	2	31	0	1	0	0	448	43	0	8	0	0	23
Whale Pass	Est	2	5	0	0	0	0	0	71	7	0	1	0	4
Total GMU		2	323	0	6	0	0	2,686	349	0	96	0	17	258
Kake	96	3	10	0	0	0	0	75	85	0	17	0	0	0
Petersburg	Est	3	44	0	0	0	0	328	371	0	74	0	0	Kake
Wrangell	Est	3	33	0	0	0	0	248	281	0	56	0	0	0
Total GMU		3	87	0	0	0	0	851	738	0	148	0	0	0
Angoon	96	4	0	0	0	0	0	0	0	0	7	0	0	0
Elfin Cove	Est	4	0	0	0	0	0	1	0	0	0	0	0	Hoonah
Game Creek CD	96	4	0	0	0	0	0	24	8	0	19	48	1	0
Hoonah	96	4	0	0	0	0	0	0	25	7	0	0	0	0
Pelican	Est	4	0	0	0	0	0	0	4	1	0	0	0	Hoonah
Port Alexander	Est	4	0	0	2	0	0	10	8	0	1	3	0	Sitka

**Table 9. Furbearer Harvests in Alaska,
by Game Management Unit and Community**
(Source: Household Survey Estimates, Division of Subsistence, ADF&G)

Place	Survey Year	Assumptions													
		GMU	Beaver	Coyote	Fox	Lynx	Marmot	Marten	Mink	Muskrat	Otter, Land	Squirrel	Weasel	Wolf	Wolverine
Sitka	86	4	23	0	156	0	0	927	736	0	57	301	0	0	0
Tenakee Spring	84	4	0	0	0	0	0	10	29	0	0	0	0	0	0
Whitestone Logging	96	4	0	0	0	0	0	182	7	0	0	0	0	0	0
Total GMU		4	23	0	158	0	0	1,163	797	0	84	352	1	0	0
Yakutat	84	5	18	4	0	7	0	76	58	0	11	7	11	69	43
Total GMU		5	18	4	0	7	0	76	58	0	11	7	11	69	43
Chenega Bay	92	6	0	0	0	0	0	0	1	0	3	0	0	0	0
Cordova	83	6	73	9	0	0	0	45	182	0	9	0	27	0	18
Tatitlek	88	6	0	1	0	0	0	4	5	0	47	0	0	0	0
Total GMU		6	73	10	0	0	0	49	188	0	59	0	27	0	18
Akhiok	89	8	0	0	8					0		0			
Chiniak	82	8	18		37					18		110			
Karluk	89	8	0		4					5		2			
Kodiak City	91	8	0		75			56		84		19			
Kodiak Road	91	8			137			46		31		31			
Larsen Bay	89	8	6		28					26		9			
Old Harbor	82	8	24		120					59		12			
Ouzinkie	88	8	9		18					27		18			
Port Lions	83	8	18		25					5		0			
Total GMU		8	75	0	452	0	0	102	0	0	285	19	182	0	0
Chignik Bay	89	9	0		3	0			1	0	3	0	2	0	0
Chignik Lagoon	84	9	5		49	0			14	0	8	0	0	0	1
Chignik Lake	89	9	0		5	0			7	0	1	0	0	8	5
Egegik	84	9	0		20	0			5	0	20	0	0	0	0
Igluigig	92	9	48	4	48	8			68	0	48	0	2	1	2
Ilamaa	91	9	25	3	21	0		0	3	0	12	13	20	0	
Ivanof Bay	84	9	0		10	0			0	0	0	0	0	0	
King Cove	92	9			67	0			19	8	0	0	0	0	4

Table 9. Furbearer Harvest in Alaska,
by Game Management Unit and Community
(Source: Household Survey Estimates, Division of Subsistence, ADF&G)

Place	Survey Year	GMU										Otter, Land	Squirrel	Weasel	Wolf	Wolverine	Assumptions
		Beaver	Coyotes	Fox	Lynx	Marmot	Marten	Mink	Muskrat	Otter,	Land						
King Salmon	83	9	45		176	11				45		37			9	6	
Kokhanok	92	9	73	4	27	11				22	2	9	82	4	0	12	
Lavelock	88	8	208	9	34	1		1	48	0	31	0	0	11	8		
Naknek	83	9	12		5	0			0		5			0	0	0	
Nelson Lagoon	Est	8	1	0	64	0	0	0	0	0	3	0	0	0	0	1	Port Heiden
Newhalen	91	9	78	25	62	4		11	97	14	23	0		36	5		
Nondalton	83	8	206		10	3		23	0		3	10		0	0		
Pedro Bay	96	9	0	1	0	0		0	0	0	0	0	0	0	0	1	
Perryville	84	9	0		22	0			68	0	5	0		0	0	0	
Pilot Point	87	9	24		141	26			3	0	86	7		2	4		
Port Alsworth	83	9	2		44	10		0	0	0	0	0		0	0	0	
Port Heiden	87	9	2		101	0			0	0	4	0		0	2		
Sand Point	92	9			10	0			0		0	0	0	0	0	0	
South Naknek	92	9	0	0	10	0			0	0	6	0	0	0	0	0	
Ugashik	87	9	5		84	18			5	0	8	1		0	0	4	
Total GMU		9	734	46	1,011	82	0	35	404	16	328	113	8	89	53		
Akutan	90	10	0		0				0	0							
Atka	94	10			5												
False Pass	88	10	0		105	0			4		6	25					
Nikolski	90	10	0		3			0	0								
Saint George	94	10			0												
Saint Paul	94	10			82												
Unalaska	94	10			197												
Total GMU		10	0	0	372	0	0	0	4	0	6	25	0	0	0	0	
Chitina	82	11	0	6	37	10	3	6	0	61	10	3	24	1	1		
McCarthy Road	87	11	7	19	3	0	0	44	7	36	2	50	21	1	4		
Nabesna Road	82	11	11	20	79	84	0	51	38	25	4	5	0	10	18		
Siana Homestead S	87	11	0	0	62	0	0	39	0	485	0	0	8	0	0		
South Wrangell	87	11	7	5	3	2	0	36	0	0	0	0	10	2	0		
Total GMU		11	25	50	184	106	3	176	45	607	16	58	63	14	21		

**Table 9. Furbearer Harvests in Alaska,
by Game Management Unit and Community**
(Source: Household Survey Estimates, Division of Subsistence, ADF&G)

Place	Survey Year	GMU	Beaver	Coyotes	Fox	Lynx	Marmot	Marten	Mink	Muskrat	Otter, Land	Squirrel	Weasel	Wolf	Wolverine	Assumptions
Chisana	87	12	0	3	30	2	0	26	0	0	0	0	0	4	4	4
Northway	87	12	0	0	108	32	0	676	160	3,484	12	2	0	0	0	0
Tanacross	87	12	5	4	14	0	0	303	1	13	0	0	0	4	0	0
Tetlin	87	12	8	0	6	0	0	41	10	507	0	0	0	0	0	0
Tok	87	12	53	39	183	23	0	2,273	27	486	0	109	108	26	46	46
Total GMU		12	66	46	341	57	0	3,319	188	4,490	12	111	108	34	50	
Centreville	82	13	7	0	31	7	0	1	1	13	0	0	0	2	7	
Chase	86	13	25	0	7	0	0	19	5	0	2	32	11	0	0	
Chitina	82	13	0	4	0	17	0	35	9	0	0	0	1	2	2	
Copper Center	87	13	4	1	13	0	0	11	0	0	0	33	24	0	0	
East Glenn-Lk L	82	13	0	9	0	217	0	35	9	22	0	247	0	0	0	
Gakona	87	13	23	36	60	0	0	311	24	17	2	5	38	17	1	
Glennallen	82	13	0	16	26	28	0	0	26	0	0	26	0	5	5	
Gold Creek	86	13	0	0	0	0	0	0	0	0	0	12	0	0	0	
Gulkana	87	13	8	6	6	6	0	32	11	132	2	0	8	6	6	
Hurricane-Broad Pa	86	13	9	0	14	0	0	27	12	0	0	0	6	2	3	
Kenny Lake	87	13	2	12	8	0	0	120	14	0	0	27	6	6	10	
Lake Louise	82	13	0	1	36	3	0	18	14	47	15	0	2	5	0	
Mentasta	82	13	25	4	7	4	1	15	15	72	1	29	3	1	4	
Mentasta Pass	87	13	4	0	11	0	0	74	6	0	1	0	1	9	7	
Paxson	87	13	94	4	114	0	0	67	12	40	10	0	9	2	0	
Sheep Mountain	82	13	0	0	0	0	0	144	0	11	0	42	0	0	0	
Slana	87	13	6	8	105	0	0	25	19	63	1	0	23	15	2	
Slana Homestead N	87	13	53	0	22	0	0	0	0	0	4	0	0	0	0	
Sourdough	87	13	2	4	9	0	0	2	0	2	0	0	3	7	0	
Tazlina	87	13	27	25	29	0	0	74	13	24	2	14	7	7	0	
Tonsina	87	13	12	15	25	0	6	167	27	5	3	0	14	24	6	
West Glenn Highwa	87	13	4	3	83	0	0	147	8	62	0	164	53	3	0	
Chickaloon	82	13	7	3	27	0	0	3	0	687	0	42	0	0	0	
Total GMU		13	312	151	633	280	7	1,327	225	1,177	43	673	209	113	55	

Table 9. Furbearer Harvest in Alaska,
by Game Management Unit and Community
(Source: Household Survey Estimates, Division of Subsistence, ADF&G)

Place	Survey Year	GMU	Beaver	Coyote	Fox	Lynx	Marmot	Marten	Mink	Mustard	Otter, Land	Squirrel	Weasel	Wolf	Wolverine	Assumptions
Nanwalek	93	15	0	0	0	0	0	0	0	0	0	9	0	0	0	
Port Graham	92	15	0	0	0	0	0	0	0	0	0	4	7	0	0	
Seldovia	93	15	0	2	0	0	0	0	0	0	12	56	7	0	0	
Total GMU		15	0	2	0	0	0	0	0	0	12	69	14	0	0	
Alexander Creek	Est	16	16	0	5	0	0	12	3	0	1	21	7	0	0	Chase
Tyonek	83	16	26	0	2	0	0	0	0	0	0	1	0	0	0	
Total GMU		16	42	0	7	0	0	12	3	0	1	21	8	0	0	
Aleknagik	89	17	145	6	84	0	0	179	46	0	32	83	0	10		
Clark's Point	89	17	50	1	17	0	0	0	0	0	13	0	0	0	0	
Dillingham	84	17	709		108	0		370	113	41	68	0	23	14		
Ekwok	87	17	343		29	0		10	9	1	17	0	0	0	0	
Koliganek	87	17	499		118	3		54	26	10	49	0	47	11		
Manokotak	85	17	484		128	2		58	59	52	246	1	2			
New Stuyahok	87	17	814		41	0		6	15	19	35	0	0	2		
Portage Creek	Est	17	16	0	5	0	0	0	2	2	3	9	0	0	0	Manokotak
Togiak	Est	17	939	0	259	4	0	0	117	119	168	488	0	2	4	Manokotak
Twin Hills	Est	17	95	0	26	0	0	0	12	12	17	50	0	0	0	Manokotak
Total GMU		17	4,074	7	615	10	0	819	388	283	500	888	0	73	44	
Aldachak	Est	18	606	0	226	0	0	0	100	278	82	358	0	0	0	Kwethluk
Aldak	Est	18	338	0	126	0	0	0	55	184	45	189	0	0	0	Kwethluk
Alakanuk	80	18	167		261			103	939	5,344	116					
Atmautuak	Est	18	202	0	20	0	0	0	651	54	7	0	0	0	0	Nunapchuk
Bethel	Est	18	385	0	136	0	0	0	60	167	49	215	0	0	0	1/16 Kwethluk
Chefornak	Est	18	72	0	92	0	0	0	42	35	3	0	8	0	0	Tusunak
Chevak	Est	18	126	0	162	0	0	0	74	61	4	0	13	0	0	Tusunak
Chuathbaluk	83	18	158		27	19		137	6	0	4			2	2	
Eek	Est	18	280	0	215	0	0	0	128	17	25	70	0	0	0	Qutnagak
Emmonak	80	18	39		239			0	189	2,533	11		1	0		

**Table 9. Furbearer Harvests in Alaska,
by Game Management Unit and Community**
(Source: Household Survey Estimates, Division of Subsistence, ADF&G)

Place	Survey Year	GMU										Otter, Land	Squirrel	Weasel	Wolf	Wolverine	Assumptions
		Beaver	Coyote	Fox	Lynx	Marmot	Marten	Mink	Muskrat	Otter, Land	Squirrel	Weasel	Wolf	Wolverine	Assumptions		
Goodnews Bay	Est	18	232	0	178	0	0	0	106	14	20	58	0	0	0	Quinhagak	
Hooper Bay	Est	18	176	0	227	0	0	0	104	85	6	0	19	0	0	Tununak	
Kasigluk	Est	18	370	0	36	0	0	0	1,183	100	13	0	0	0	0	Nunapitchuk	
Kipnuk	Est	18	94	0	121	0	0	0	58	45	3	0	10	0	0	Tununak	
Kongiganak	Est	18	59	0	76	0	0	0	35	28	2	0	6	0	0	Tununak	
Kotlik	80	18	100		1,092				0	848	5,504	82					
Kwethluk	88	18	715		266				117	327	96	421					
Kwigillingok	Est	18	55	0	71	0	0	0	32	27	2	0	6	0	0	Tununak	
Marshall (Fortuna L)	Est	18	14	0	86	0	0	0	86	807	4	0	0	0	0	Emmonak	
Mekoryuk	Est	18	33	0	42	0	0	0	19	18	1	0	3	0	0	Tununak	
Mountain Village	80	18	168		432				0	210	5,500	128					
Napakiak	Est	18	399	0	148	0	0	0	85	182	54	235	0	0	0	Kwethluk	
Napaskiak	Est	18	418	0	155	0	0	0	68	191	58	246	0	0	0	Kwethluk	
Newtok	Est	18	45	0	58	0	0	0	27	22	2	0	5	0	0	Tununak	
Nightmute	Est	18	38	0	48	0	0	0	22	18	1	0	4	0	0	Tununak	
Nunapitchuk	83	18	338		33				1,091	91	12						
Oscarville	Est	18	64	0	24	0	0	0	10	29	9	38	0	0	0	Kwethluk	
Pilot Station	Est	18	26	0	169	0	0	0	126	1,887	7	0	0	1	0	Emmonak	
Pitme Point	Est	18	7	0	43	0	0	0	34	456	2	0	0	0	0	Emmonak	
Platinum	Est	18	37	0	28	0	0	0	17	2	3	9	0	0	0	Quinhagak	
Quinhagak	82	18	555		425				253	33	49	139					
Russian Mission	Est	18	289	0	102	15	0	842	0	0	27	0	35	14	0	Holy Cross	
Saint Marys (Andrea)	Est	18	23	0	141	0	0	0	111	1,483	8	0	0	1	0	Emmonak	
Scammon Bay	Est	18	76	0	88	0	0	0	45	37	3	0	8	0	0	Tununak	
Sheldon Point	80	18	26		237				0	266	976	68					
Toksook Bay	Est	18	87	0	112	0	0	0	52	42	3	0	9	0	0	Tununak	
Tuluksak	Est	18	450	0	167	0	0	0	74	206	60	265	0	0	0	Kwethluk	
Tuntutuliak	Est	18	252	0	25	0	0	0	813	68	9	0	0	0	0	Nunapitchuk	
Tununak	86	18	66		72				33	27	2		8				
Total GMU		18	7,857	0	6,207	34	0	1,082	8,139	26,758	1,084	2,263	133	19	2		
Aniak	Est	19	172	0	29	21	0	148	7	0	4	0	0	2	2 1/4 Chuchibetuk		

**Table 9. Furbearer Harvest In Alaska,
by Game Management Unit and Community**
(Source: Household Survey Estimates, Division of Subsistence, ADF&G)

Place	Survey Year	Assumptions														
		GMU	Beaver	Coyote	Fox	Lynx	Marmot	Marten	Mark	Mustard	Otter, Land	Squirrel	Wassel	Wolf	Wolverine	
Crooked Creek	Est.	19	380	0	40	0	0	1,392	49	0	49	0	0	0	30	Steelmute
Lake Minchumna	Est.	19	21	0	1	3	0	43	0	5	1	0	0	0	0	Galena
Lime Village	Est.	19	51	0	2	1	0	6	0	0	1	2	0	0	0	Nondation
Lower Kalskag	Est.	19	342	0	59	41	0	297	13	0	9	0	0	4	4	Chushbeluk
McGrath	Est.	19	100	0	4	14	0	208	2	28	6	0	0	2	1	1/2 Galena
Nikolai	Est.	19	47	0	2	6	0	97	1	12	3	0	0	1	0	Galena
Red Devil	Est.	19	103	0	11	0	0	377	13	0	13	0	0	0	0	Steelmute
Steelmute	83	19	277		29	0		1,015	36	0	38				22	
Stony River	Est.	19	95	0	10	0	0	348	12	0	12	0	0	0	8	Steelmute
Takotna	Est.	19	26	0	1	4	0	55	1	7	2	0	0	1	0	Galena
Upper Kalskag	Est.	19	321	0	55	39	0	278	12	0	8	0	0	4	4	Chushbeluk
Total GMU		19	1,936	0	242	128	0	4,288	147	50	145	2	0	14	80	
Anderson	87	20	19	2	116	2	0	247	14	0	7	120	0	0	0	
Dot Lake	87	20	4	0	1	8	0	83	3	0	0	0	3	0	1	
Eagle	Est.	20	9	7	31	4	0	380	5	81	0	18	18	4	8	Tot
Healy	87	20	107	43	117	10	9	100	17	7	0	0	33	10	0	
Healy Lake	Est.	20	4	0	1	8	0	78	3	0	0	0	3	0	1	Dot Lake
Manley Hot Sprl	Est.	20	112	0	9	10	0	348	11	25	4	0	0	1	2	Tanana
McKinley Park Villag	87	20	55	0	8	17	0	38	0	21	4	0	0	4	1	
Minto	84	20	147		20	4		299	26	589	18		18	1	0	
Nenana	82	20	227		20	23		789	75		9		2	3		
Rampart	Est.	20	77	0	6	7	0	237	7	17	3	0	0	1	1	Tanana
Tanana	87	20	379		29	34		1,175	37	84	14		5	6		
Total GMU		20	1,140	62	357	128	9	3,753	198	804	57	138	78	29	23	
Anvik	91	21	271		153	4		123			12		11	20		
Galena	85	21	314		11	43		650	6	80	20		6	3		
Grayling	91	21	221		22	0		265			10		7	13		
Holy Cross	91	21	271		98	14		791			25		33	13		
Kaltag	Est.	21	114	0	4	16	0	238	2	29	7	0	0	2	1	Galena
Koyukuk	Est.	21	59	0	2	8	0	122	1	15	4	0	0	1	1	Galena

**Table 9. Furbearer Harvests in Alaska,
by Game Management Unit and Community**
(Source: Household Survey Estimates, Division of Subsistence, ADF&G)

Place	Survey Year	GMU	Beaver	Coyote	Fox	Lynx	Marmot	Marten	Mink	Mustelat	Otter, Land	Squirrel	Weasel	Wolf	Wolverine	Assumptions
Nulato	Est	21	161	0	6	22	0	333	3	41	10	0	0	3	2	Galena
Ruby	Est	21	83	0	3	13	0	182	2	24	6	0	0	2	1	Galena
Shageluk	91	21	25		7	0		78			2		0	0		
Total GMU		21	1,528	0	304	119	0	2,780	14	189	98	0	81	60	7	
Brevig Mission	89	22	0		0	0		0	0	3	0	8	0	0	6	
Diamond	Est	22	0	0	0	0	0	0	0	0	0	0	0	0	0	
Elm	Est	22	28	0	121	0	0	0	0	13	2	67	2	4	0	Golovin
Gambell	Est	22	0	0	0	0	0	0	0	0	0	0	0	0	0	
Golovin	89	22	12		56	0		0	0	6	1	31	1	2	0	
Koyuk	Est	22	25	0	117	0	0	0	0	13	2	65	2	4	0	Golovin
Nome	Est	22	78	0	385	0	0	0	0	39	7	202	7	13	0	1/4 Golovin
Saint Michael	Est	22	0	0	112	0	0	0	0	195	0	0	0	0	0	Stabbins
Savoonga	Est	22	0	0	0	0	0	0	0	0	0	0	0	0	0	
Shaktoolik	Est	22	18	0	89	0	0	0	0	10	2	49	2	3	0	Golovin
Shishmaref	95	22	0		31	0	0	0	6	12	18	485	8	0	9	
Stabbins	80	22	0		170			0	0	295	0					
Teller	Est	22	0	0	0	0	0	0	0	3	0	6	0	0	6	Brevig Mission
Unalakleet	Est	22	68	0	309	0	0	0	0	33	8	171	8	11	0	Golovin
Wales	93	22	0		4			0	0	0	0	29		0	1	
White Mountain	Est	22	16	0	74	0	0	0	0	8	1	41	1	3	0	Golovin
Total GMU		22	242	0	1,449	0	0	0	6	629	39	1,182	28	40	22	
Ambler	Est	23	7	0	39	0	0	3	1	121	3	14	1	3	5	Kotzebue
Buckland	Est	23	10	0	21	0	0	0	3	10	0	37	0	34	31	Deering
Deering	94	23	4		8				1	4	0	14		13	12	
Kiana	Est	23	9	0	24	0	0	0	2	3	2	12	0	10	26	Kotzebue
Kivalina	92	23			21	0			2	3	2	10	0	9	23	
Kobuk	Est	23	2	0	13	0	0	1	0	39	1	4	0	1	2	Kotzebue
Kotzebue	91	23	65		384	0		24	6	1,141	24	129	6	24	49	
Nostak	94	23	0		12				2	0	2	0	0	14	10	
Noorvik	Est	23	13	0	73	0	0	5	2	230	5	28	2	5	10	Kotzebue

Table 9. Furbearer Harvest in Alaska,
by Game Management Unit and Community

(Source: Household Survey Estimates, Division of Subsistence, ADF&G)

Place	Survey Year	Assumptions													
		GMU	Beaver	Coyote	Fox	Lynx	Marmot	Marten	Mink	Muskox	Otter, Land	Squirrel	Wassel	Wolf	Wolverine
Point Hope	Est	23	0	0	47	0	0	0	5	7	5	23	0	20	52
Selawik	Est	23	16	0	92	0	0	6	2	287	6	32	2	6	12
Shungnak	Est	23	0	0	8	0	0	0	1	0	1	0	0	9	6
Total GMU		23	127	0	721	0	0	38	28	1,847	50	300	13	148	239
Altakaket-Alatna	82	24	256		89	150		1,195		140	4		2	4	
Bettles-Evansville	82	24	14	1	25	36		193		16	0		0	9	
Hughes	82	24	113		47	63		470		47	5		0	7	
Huslia	83	24	275		222	143		644		278	24		15	7	
Wiseman	Est	24	5	0	8	12	0	63	0	5	0	0	0	0	3 Bettles-Evansville
Total GMU		24	683	1	401	406	0	2,565	0	484	23	0	0	17	30
Arctic Village	Est	25	107	0	119	78	0	573	31	579	3	168	4	5	6 Fort Yukon
Beaver	85	25	48		122	72		724	39	856	0	258	0	4	
Birch Creek	Est	25	13	0	34	20	0	203	11	240	0	72	0	0	1 Beaver
Central	Est	25	3	2	9	1	0	114	1	24	0	5	5	1	2 Tok
Chalkyitsik	Est	25	92	0	102	67	0	490	28	495	2	133	3	4	6 Fort Yukon
Circle	Est	25	4	3	13	2	0	161	2	34	0	8	8	2	3 Tok
Fort Yukon	87	25	507		562	369		2,709	145	2,736	12	735	18	22	28
Stevens Village	84	25	14		40	26		432	8	950	1		0	4	
Venetie	Est	25	225	0	249	163	0	1,200	64	1,212	5	328	6	10	12 Fort Yukon
Total GMU		25	1,010	5	1,250	798	0	6,808	327	7,126	23	1,692	46	44	66
Anaktuvuk Pass	Est	26	74	8	133	202	0	1,025	0	85	0	0	0	0	48 Bettles-Evansville
Atkasuk	Est	26	0	0	14	0	0	0	0	0	0	3	4	1	3 Wainwright
Barrow	89	26			50					0	17	0	0	1	
Kaktovik	82	26			47	21		0		0	133	0	3	9	
Nuiqsut	93	26			203	0		0		336	10	31	19		
Point Lay	87	26			0	0				286		0	2	7	
Wainwright	89	26			30					1	7	9	2	7	
Total GMU		26	74	5	477	202	21	1,025	0	85	1	781	23	37	84

**Table 10. Furbearer Sharing in Alaska:
Percent of Households Which
Used, Harvested, Received, or Gave Furbearers,
by Surveyed Community, Year, and GMU**
Source: Household Survey Estimates, Division of Subsistence, ADF&G

GMU	Year	Community	Used	Harvested	Received	Gave
01	1987	Gustavus	11.80	10.00	1.80	0.00
01	1988	Haines	21.80	18.40	3.40	2.70
01	1987	Haines	16.20	11.20	5.20	0.00
01	1988	Haines	6.50	5.40	1.10	1.10
01	1987	Hyder	15.20	15.20	0.00	0.00
01	1988	Klukwan	27.30	27.30	0.00	0.00
01	1987	Klukwan	4.80	0.00	4.80	0.00
01	1988	Klukwan	12.80	12.80	6.80	3.20
01	1987	Metlakatla	0.80	0.80	0.00	0.00
01	1987	Meyers Chuck	30.00	30.00	10.00	0.00
01	1987	Saxman	0.00	0.00	0.00	0.00
01	1987	Skagway	8.70	4.10	4.70	2.10
02	1987	Coffman Cove	8.20	8.20	0.00	0.00
02	1987	Craig	15.00	12.80	4.30	4.30
02	1987	Craig	6.40	5.20	1.70	2.90
02	1987	Edna Bay	40.00	40.00	0.00	18.00
02	1987	Holts	8.00	8.00	0.00	0.00
02	1987	Hydaburg	0.00	0.00	0.00	0.00
02	1987	Hydaburg	5.80	5.80	0.00	0.00
02	1987	Kasaan	7.10	7.10	7.10	7.10
02	1984	Klawock	5.80	5.80	0.00	0.00
02	1987	Klawock	2.20	2.20	0.00	0.00
02	1987	Klawock	4.70	4.70	0.00	1.90
02	1987	Point Baker	6.30	0.00	6.30	0.00
02	1986	Point Baker	6.30	0.00	6.30	0.00
02	1987	Port Protection	8.00	4.00	4.00	0.00
02	1986	Port Protection	12.00	4.00	8.00	0.00
02	1987	Thorne Bay	25.30	25.30	0.00	0.00
02	1987	Whale Pass	33.30	33.30	0.00	5.60
03	1987	Beecher Pass	20.00	20.00	0.00	0.00
03	1985	Kake	2.90	2.90	0.00	0.00
03	1987	Kake	0.00	0.00	0.00	0.00
03	1986	Kake	4.10	4.10	0.00	0.00
03	1987	Petersburg	6.40	6.40	0.00	0.00
03	1987	Wrangell	1.80	1.00	0.80	0.00
04	1984	Angoon	0.00	0.00	0.00	0.00
04	1987	Angoon	0.70	0.00	0.70	0.00
04	1986	Angoon	2.70	2.70	1.40	0.00
04	1987	Elli Cove	7.70	7.70	0.00	0.00
04	1986	Game Creek	41.70	41.70	8.30	8.30
04	1987	Hoonah	11.10	11.10	0.00	0.00
04	1986	Hoonah	2.60	2.60	0.00	0.00
04	1987	Pelican	10.00	10.00	0.00	1.20
04	1987	Port Alexander	20.50	17.80	5.70	2.70
04	1987	Sitka	2.70	2.70	0.00	0.00

**Table 10. Furbearer Sharing In Alaska:
Percent of Households Which
Used, Harvested, Received, or Gave Furbearers,
by Surveyed Community, Year, and GMU**
Source: Household Survey Estimates, Division of Subsistence, ADF&G

GMU	Year	Community	Used	Harvested	Received	Gave
04	1983	Sitka	4.30	3.20	1.50	1.20
04	1984	Tennakee Springs	4.20	4.20	0.00	0.00
04	1987	Tennakee Springs	16.10	16.10	0.00	0.00
04	1989	Whitestone	12.50	12.50	0.00	0.00
06	1984	Yakutat	16.00	16.00	2.00	2.00
06	1987	Yakutat	5.20	4.40	4.40	0.00
06	1984	Chenega Bay	26.00	12.50	18.80	6.30
06	1985	Chenega Bay	50.00	50.00	18.80	12.50
06	1989	Chenega Bay	5.80	0.00	5.80	0.00
06	1990	Chenega Bay	0.00	0.00	0.00	0.00
06	1991	Chenega Bay	5.80	5.80	0.00	5.80
06	1992	Chenega Bay	17.40	17.40	4.30	13.00
06	1993	Chenega Bay	13.00	13.00	0.00	8.70
06	1985	Cordova	31.80	31.80	9.70	7.80
06	1988	Cordova	26.00	21.30	4.80	3.80
06	1991	Cordova	22.80	18.80	5.00	5.80
06	1992	Cordova	14.60	12.20	2.40	4.80
06	1993	Cordova	22.10	17.30	7.70	6.70
06	1987	Tatitlek	26.30	26.30	5.30	0.00
06	1988	Tatitlek	18.00	14.30	4.80	4.80
06	1989	Tatitlek	8.10	4.80	4.50	4.80
06	1990	Tatitlek	11.80	11.80	0.00	5.80
06	1991	Tatitlek	5.30	5.30	0.00	0.00
06	1993	Tatitlek	10.00	10.00	0.00	0.00
06	1991	Valdez	12.00	10.00	4.00	3.00
06	1992	Valdez	12.00	9.00	3.00	2.00
06	1993	Valdez	8.60	2.90	8.60	0.00
06	1980	Whittier	3.40	3.40	1.10	2.80
06	1982	Aikhik	4.80	4.80		
06	1988	Aikhik	0.00	0.00	0.00	0.00
06	1989	Aikhik	20.00	20.00	0.00	0.00
06	1992	Aikhik	8.30	4.20	4.20	4.20
06	1982	Chiniak	35.30	29.40		
06	1982	Karluk	25.00	25.00		
06	1988	Karluk	10.50	10.50	0.00	0.00
06	1989	Karluk	14.30	14.30	0.00	0.00
06	1990	Karluk	17.60	17.60	0.00	0.00
06	1991	Karluk	15.40	15.40	0.00	15.40
06	1982	Kodiak City	24.60	18.10		
06	1991	Kodiak City	15.00	11.00	8.00	4.00
06	1992	Kodiak City	13.00	8.00	8.00	3.00
06	1983	Kodiak City	20.00	13.30	11.40	5.70
06	1991	Kodiak Road	18.40	18.40	3.90	5.30
06	1982	Larsen Bay	18.80	15.80		
06	1988	Larsen Bay	24.30	16.20	10.80	2.70

use99.xls12/03/1994:48 PM

33

**Table 10. Furbearer Sharing in Alaska:
Percent of Households Which
Used, Harvested, Received, or Gave Furbearers,
by Surveyed Community, Year, and GMU**
Source: Household Survey Estimates, Division of Subsistence, ADF&G

GMU	Year	Community	Used	Harvested	Received	Gave
08	1989	Larsen Bay	17.80	14.70	2.90	6.80
08	1990	Larsen Bay	8.60	8.60	5.70	6.60
08	1991	Larsen Bay	28.90	15.80	15.80	7.90
08	1992	Larsen Bay	24.30	16.20	10.80	5.40
08	1993	Larsen Bay	22.60	15.00	10.00	10.00
08	1994	Old Harbor	29.90	23.40		
08	1995	Old Harbor	18.20	13.60	8.10	4.50
08	1996	Old Harbor	8.30	6.30	4.20	2.10
08	1997	Old Harbor	19.00	9.50	11.90	9.50
08	1998	Ouzinkie	53.10	40.60		
08	1999	Ouzinkie	44.10	38.20	11.80	11.80
08	1990	Ouzinkie	8.60	5.70	2.90	2.90
08	1991	Ouzinkie	18.90	17.00	1.90	1.90
08	1992	Ouzinkie	15.80	12.60	3.10	6.30
08	1993	Ouzinkie	21.20	18.20	3.60	5.80
08	1994	Ouzinkie	18.00	8.80	8.80	8.80
08	1995	Port Lions	20.90	23.50		
08	1996	Port Lions	12.30	10.80	3.10	3.10
08	1997	Port Lions	16.70	11.10	5.60	8.30
08	1998	Port Lions	28.90	24.40	6.70	15.80
09	1984	Chignik Bay	10.50	10.50	0.00	0.00
09	1989	Chignik Bay	20.00	17.10	2.90	5.70
09	1991	Chignik Bay	6.70	3.80	3.30	0.00
09	1994	Chignik Lagoon	11.80	11.80	0.00	0.00
09	1989	Chignik Lagoon	13.30	13.30	0.00	0.00
09	1994	Chignik Lake	43.50	30.40	21.70	13.00
09	1989	Chignik Lake	33.30	29.60	19.00	14.30
09	1991	Chignik Lake	33.30	20.80	16.70	20.80
09	1984	Egagik	44.00	40.00	12.00	20.00
09	1993	Igiugig	100.00	100.00		
09	1992	Igiugig	80.00	60.00	20.00	30.00
09	1983	Ilamaa	25.00	25.00		
09	1991	Ilamaa	47.80	38.10	21.70	21.70
09	1984	Ivanof Bay	16.70	16.70	0.00	0.00
09	1989	Ivanof Bay	57.10	42.90	14.30	28.60
09	1992	King Cove	8.30	8.30	4.00	4.00
09	1988	King Salmon		23.80		
09	1983	Kotchanok	78.90	78.90	5.30	5.30
09	1992	Kotchanok	72.20	63.90	55.60	55.60
09	1988	Leveetok	66.70	48.10	40.70	40.70
09	1992	Leveetok	50.00	43.30	13.30	36.70
09	1983	Naknek		15.40	3.80	
09	1987	Nelson Lagoon	7.70	7.70	0.00	0.00
09	1983	Newhalen	63.60	63.60		
09	1991	Newhalen	80.80	69.20	46.20	36.50

**Table 10. Furbearer Sharing in Alaska:
Percent of Households Which
Used, Harvested, Received, or Gave Furbearers,
by Surveyed Community, Year, and GMU**

Source: Household Survey Estimates, Division of Subsistence, ADF&G

GMU	Year	Community	Used	Harvested	Received	Gave
09	1983	Nondalton	76.20	76.20	4.80	
09	1982	Pedro Bay	29.40	29.40	11.80	
09	1980	Pedro Bay	7.70	7.70	0.00	0.00
09	1984	Perryville	40.00	28.00	18.00	10.00
09	1989	Perryville	37.00	22.20	18.50	14.50
09	1987	Pilot Point	88.20	68.20	17.60	11.60
09	1983	Port Alsworth	46.20	46.20		
09	1987	Port Heiden	29.70	27.00	5.40	5.40
09	1982	Sand Point	23.10	15.40	7.70	2.90
09	1983	South Naknek		23.80	9.60	
09	1992	South Naknek	37.10	22.90	20.00	8.80
09	1987	Ugashik	80.00	80.00	0.00	20.00
10	1980	Akutan	12.00	8.00	4.00	4.00
10	1984	Atka	3.60	3.60	0.00	0.00
10	1988	Falsa Pass	18.00	18.00	0.00	5.00
10	1990	Nikolski	7.10	7.10	7.10	7.10
10	1994	Saint George	0.00	0.00	0.00	0.00
10	1994	Saint Paul	2.40	2.40	0.00	0.00
10	1984	Unalaska	3.70	3.50	0.30	0.80
11	1982	Chitina	72.70	72.70		
11	1987	Chitina	39.30	35.70	14.30	21.40
11	1982	McCarthy Road	61.50	61.50		
11	1987	McCarthy Road	64.70	68.80	11.80	11.80
11	1982	Nabesna Road	75.00	75.00		
11	1987	Nabesna Road	55.30	55.30	0.00	8.80
11	1987	Stana Homestead S.	52.90	47.10	11.80	28.40
11	1982	S.Wrangell Mt.	68.70	68.70		
11	1987	S.Wrangell Mt.	26.60	26.60	0.00	0.00
12	1987	Chitina	50.00	50.00	0.00	16.70
12	1982	N.Wrangell Mt.	100.00	100.00		
12	1987	Northway	91.10	84.40	22.20	31.10
12	1987	Tanacross	77.80	74.10	18.50	29.80
12	1987	Tetlin	89.70	79.30	25.50	44.10
12	1987	Tok	42.70	42.20	8.20	3.80
13	1982	Camwell	48.80	48.80		
13	1986	Chase	47.10	47.10	11.80	8.80
13	1982	Chitina	52.20	52.20		
13	1987	Chitina	50.00	44.40	5.60	5.60
13	1982	Copper Center	29.80	29.80		
13	1987	Copper Center	38.70	27.10	24.10	3.80
13	1982	East Glenn Hwy	60.00	60.00		
13	1987	East Glenn Hwy	14.80	14.80	3.40	3.40
13	1982	Gakona	52.20	52.20		
13	1987	Gakona	46.40	46.40	7.30	2.90
13	1982	Glennallen	27.60	25.60		

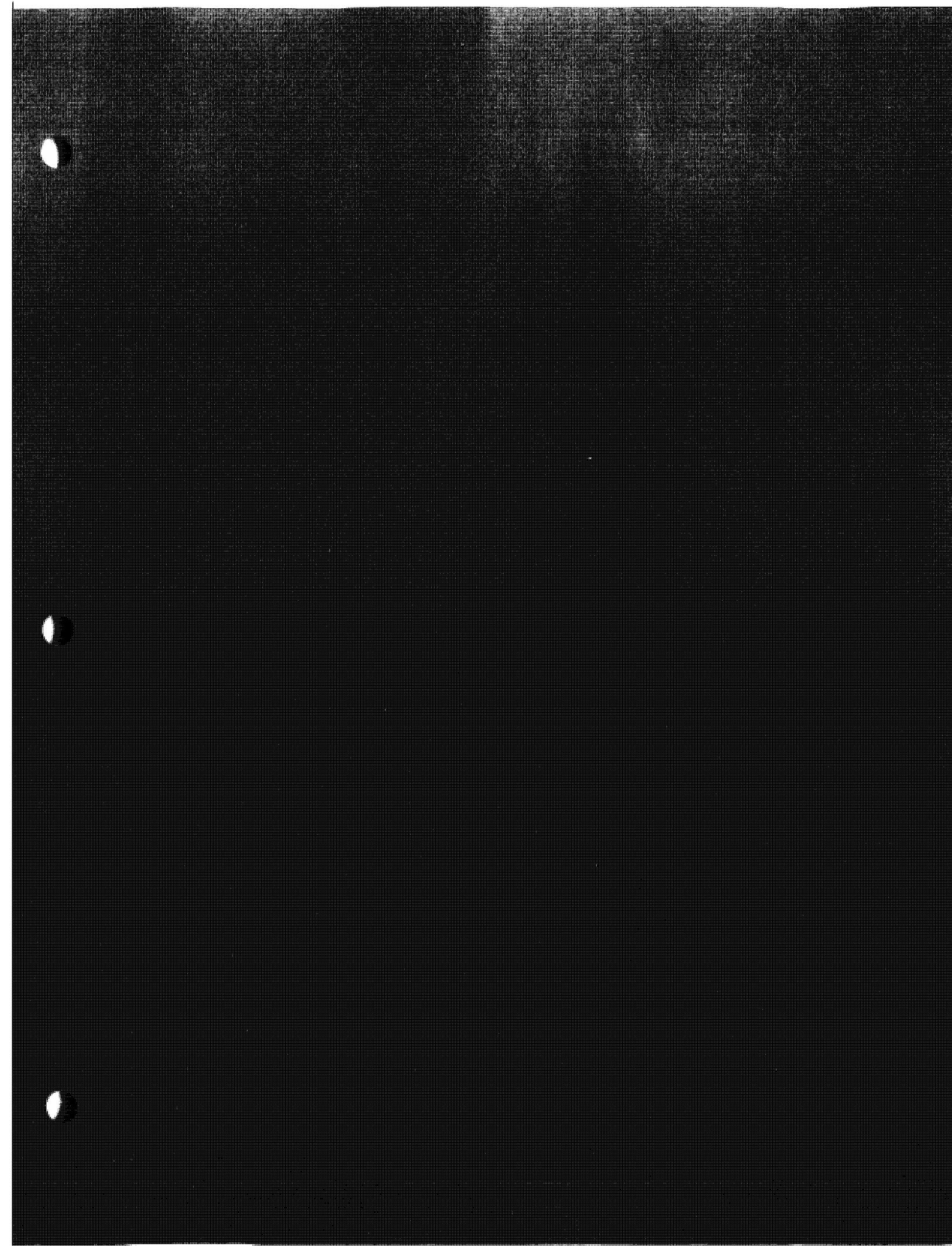
**Table 10. Furbearer Sharing in Alaska:
Percent of Households Which
Used, Harvested, Received, or Gave Furbearers,
by Surveyed Community, Year, and GMU**

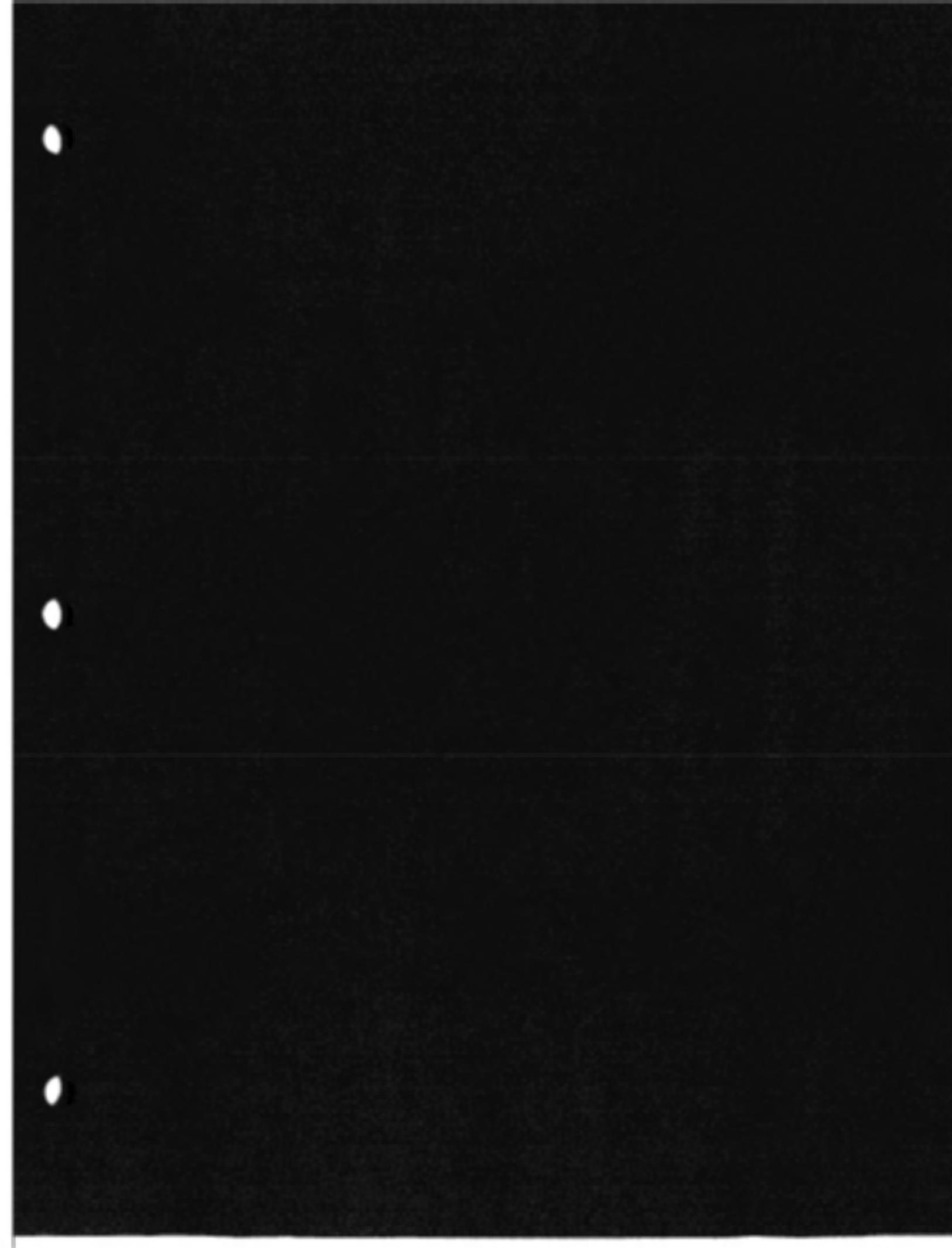
Source: Household Survey Estimates, Division of Subsistence, ADF&G

GMU	Year	Community	Used	Harvested	Received	Gave
13	1987	Glennallen	8.40	8.40	0.00	4.10
13	1988	Gold Creek	40.00	40.00	0.00	0.00
13	1982	Gulkana	41.70	38.10		
13	1987	Gulkana	55.00	50.00	15.00	10.00
13	1988	Hurricane-Brd Pass	25.00	25.00	12.60	0.00
13	1982	Kenny Lake	25.00	25.00		
13	1987	Kenny Lake	27.80	27.80	4.80	2.40
13	1982	Lake Louise	61.80	61.80		
13	1987	Lake Louise	11.80	11.80	0.00	0.00
13	1982	Lower Tonsina	87.50	87.50		
13	1982	Matanuska Glacier	26.70	26.70		
13	1982	Mentasta	63.20	63.20		
13	1987	Mentasta	58.30	54.20	12.50	29.20
13	1987	Mentasta Pass	60.00	60.00	0.00	10.00
13	1987	Paxson	57.10	57.10	0.00	14.30
13	1982	Paxson-Sourdough	40.00	40.00		
13	1982	Sheep Mountain	33.30	33.30		
13	1982	Siana	60.00	60.00		
13	1987	Siana	38.40	38.40	8.10	13.60
13	1987	Siana Homestead N	37.60	25.00	12.50	12.60
13	1987	Sourdough	44.40	44.40	0.00	11.10
13	1987	Tazlina	22.60	22.60	1.80	7.70
13	1982	Tonsina	46.70	40.00		
13	1987	Tonsina	39.80	39.80	1.00	17.70
13	1987	West Glenn Hwy	16.00	16.00	2.50	6.00
15	1987	Nanwalek	3.00	3.00	0.00	0.00
15	1989	Nanwalek	3.00	3.00	0.00	0.00
15	1990	Nanwalek	0.00	0.00	0.00	0.00
15	1991	Nanwalek	3.40	0.00	3.40	0.00
15	1992	Nanwalek	12.60	9.40	3.10	0.00
15	1993	Nanwalek	8.10	3.00	3.00	3.00
15	1987	Port Graham	3.70	3.70	0.00	1.90
15	1989	Port Graham	2.10	2.10	0.00	0.00
15	1990	Port Graham	2.20	2.20	0.00	0.00
15	1991	Port Graham	10.20	4.10	8.10	2.00
15	1992	Port Graham	4.20	2.10	2.10	0.00
15	1993	Port Graham	2.00	0.00	2.00	0.00
15	1992	Seldovia		2.80	100.00	
15	1991	Seldovia	4.50	4.50	0.00	1.50
15	1992	Seldovia	4.80	4.80	0.00	0.00
15	1993	Seldovia	4.80	4.80	0.00	3.10
16	1983	Tyonek		20.00	12.50	7.50
17	1989	Aleknagik	78.80	57.90	42.10	52.60
17	1989	Clark's Point	64.70	47.10	29.40	29.40
17	1984	Dillingham	34.80	18.60	24.30	6.60

**Table 10. Furbearer Sharing in Alaska:
Percent of Households Which
Used, Harvested, Received, or Gave Furbearers,
by Surveyed Community, Year, and GMU**
Source: Household Survey Estimates, Division of Subsistence, ADF&G

GMU	Year	Community	Used	Harvested	Received	Gave
17	1987	Ekwok	79.30	68.60	41.40	34.50
17	1987	Koliganek	82.90	71.40	50.00	50.00
17	1988	Manokotak	68.30	67.00	59.30	68.70
17	1987	New Stuyahok	82.60	72.80	57.50	48.00
18	1988	Kurehuk		67.50	57.50	48.10
18	1988	Tumutak	83.80	81.50	48.50	30.30
20	1987	Anderson	20.50	20.50	0.00	1.10
20	1987	Dot Lake	73.30	63.30	20.00	13.30
20	1987	Husky	34.40	33.20	5.80	7.40
20	1987	McKinley Park	6.30	6.30	3.10	1.60
20	1984	Minto		54.40		
20	1987	Tanana	79.50	41.00	52.20	32.00
21	1988	Gakona	63.50	46.80	38.10	16.20
22	1984	Brevig Mission	76.00	64.30	21.40	35.70
22	1989	Brevig Mission	33.30	28.70	6.70	13.30
22	1982	Golovin	80.00	55.00	45.00	35.00
22	1989	Golovin	80.60	51.60	27.30	18.20
22	1989	Shishmaref	42.80	23.80	23.80	14.30
22	1986	Shishmaref	31.10	31.10	6.70	20.00
22	1989	Walcott	19.00	18.00	0.00	8.50
23	1984	Dilling	37.50	29.70	18.80	16.20
23	1992	Kivalina	43.60	35.60	21.00	28.80
23	1988	Kotzebue	48.00	17.20	31.80	9.80
23	1991	Kotzebue	28.00	17.00	16.00	8.00
23	1994	Nestak	20.80	11.60	8.80	10.30
24	1983	Altarakeet/Alatna		73.30		
24	1984	Altarakeet/Alatna		62.50		
24	1983	Bettles/Evansville		28.80		
24	1984	Bettles/Evansville		34.40		
24	1983	Huslia		78.60	17.90	19.50
25	1985	Beaver		83.80	45.20	48.40
25	1987	Fort Yukon	87.50	67.70	62.00	52.90
25	1984	Stevens Village		73.30		
26	1985	Kaltidvik	59.60	52.40	23.80	31.00
26	1986	Kaltidvik	46.80	40.40	28.80	19.10
26	1992	Kaltidvik	46.80	38.30	18.10	21.30
26	1985	Nuligut	65.00	57.80	12.50	22.50
26	1993	Nuligut	53.20	41.80	17.70	27.40
26	1987	Point Lay	34.80	29.20	17.80	20.20







Crossbow Overview

- Definition: A weapon with a gun-type stock and a bow fixed across it, incorporating a mechanism that holds the bowstring at full draw in a "cocked" position, without the shooter's muscle power. The crossbow fires a bolt.
- Learning the Crossbow
 - Shooting a crossbow can be mastered quickly
 - Primary challenge is to ensure crossbow is cocked properly
 - Crossbow can remain in "cocked" position for duration of hunt
 - Crossbows maintain a flatter trajectory than traditional and compound bows due to faster bolt speeds
 - Crossbows kill in the same manner as archery equipment



Crossbow and Traditional Archery Equipment

- Traditional and compound bows require physical strength and training to remain proficient
- An archer must draw, hold, aim and shoot in fairly quick succession
- Crossbows are inherently more accurate for the average shooter
- Cranks or levers are available to assist in the "cocking" of the crossbow
- Crossbows can be held in a "cocked" indefinitely; archers with a traditional or compound bow are limited
- Accuracy with a crossbow is further enhanced by the use of a scope (typically 4X)



Penetration Data

Kinetic Energy

velocity x velocity x total arrow weight (in grains) divided by 450,240

- “Energy” in a bolt as a result of its velocity and overall weight
- One of the major determining factors when it comes to penetration
- < 25 ft #s = Small Game
- 25-41 ft #s = Medium Game (Deer, Antelope)
- 42-65 ft #s = Large Game (Moose, Elk)
- >65 ft #s – Toughest Large Game (Cape Buffalo, etc.)



Crossbow – Compound bow

	100 # Crossbow	50# Compound	150# Crossbow	70# Compound
Velocity @	244.8	223 FPS	275 FPS	270 FPS
Kinetic Energy (ft lbs)	53	41	84	62.7
Velocity @ 20 yards	240.06	213.4	264.21	265
Kinetic Energy @ 20 yards (ft lbs)	51	40.3	62	50.8
Velocity @ 30 yards	235.4	209.9	258.98	259.3
Kinetic Energy @ 30 yards (ft lbs)	49	40.3	60	59
Velocity @ 40 yards	230.51	206.6	253.84	254.1
Kinetic Energy @ 40 yards (ft lbs)	47	39	57	59
Velocity @ 50 yards	225.88	203.3	248.8	250.23
Kinetic Energy @ 50 yards (ft lbs)	45	37.8	55	57.3

* Data derived from informal testing by ADF&G personnel at Rabbit Creek Shooting Park, 2009-10.



Crossbows across the lower 48

- Legal in General Seasons only (11 states)
 - Alaska
 - Colorado
 - California
 - Idaho
 - Kansas
 - Kentucky
 - Maine
 - Missouri
 - Montana
 - Nevada
 - New Hampshire



Crossbows across the lower 48

- 25 states allow crossbows in all archery and general season hunts
- 19 states allow crossbows for handicapped hunters in "archery only" seasons (includes Alaska)
- Older hunters with crossbows allowed in archery seasons
 - Illinois 62+ Iowa 70+ Wisconsin 65+
- Only two states DO NOT currently allow crossbow hunting
 - North Dakota Oregon



Why the Growth of Crossbows?

- Used as a recruitment tool in lower 48
- More hunters in the field in state's with too many deer
- Considered a safe weapon for urban areas
- Easy crossover from rifle hunters to crossbows
- Ease of use and little practice to stay proficient
- Ability of those with physical limitations to hunt
- Opportunity for older hunters in certain states
- Can be used as a separate management tool for wildlife managers

Proposal 41

Review the regulation for permits to take game
for cultural purposes

- Recommendation: No Recommendation
- Department Proposal (requesting clarification
of intent)

5 AAC 02.034 - Permit to take game for cultural purposes

The commissioner may issue a permit for the taking of game for the teaching and preservation of historic or traditional Alaskan cultural practices, knowledge, and values, only under the terms of a permit issued by the department upon application. A permit may not be issued if the taking of the game can be reasonably accommodated under existing regulations. For purposes of this section, "game" includes

- (1) deer;
- (2) moose;
- (3) caribou;
- (4) black bear;
- (5) mountain goat;
- (6) small game;
- (7) furbearers; and
- (8) any migratory bird for which a federal permit has been issued.

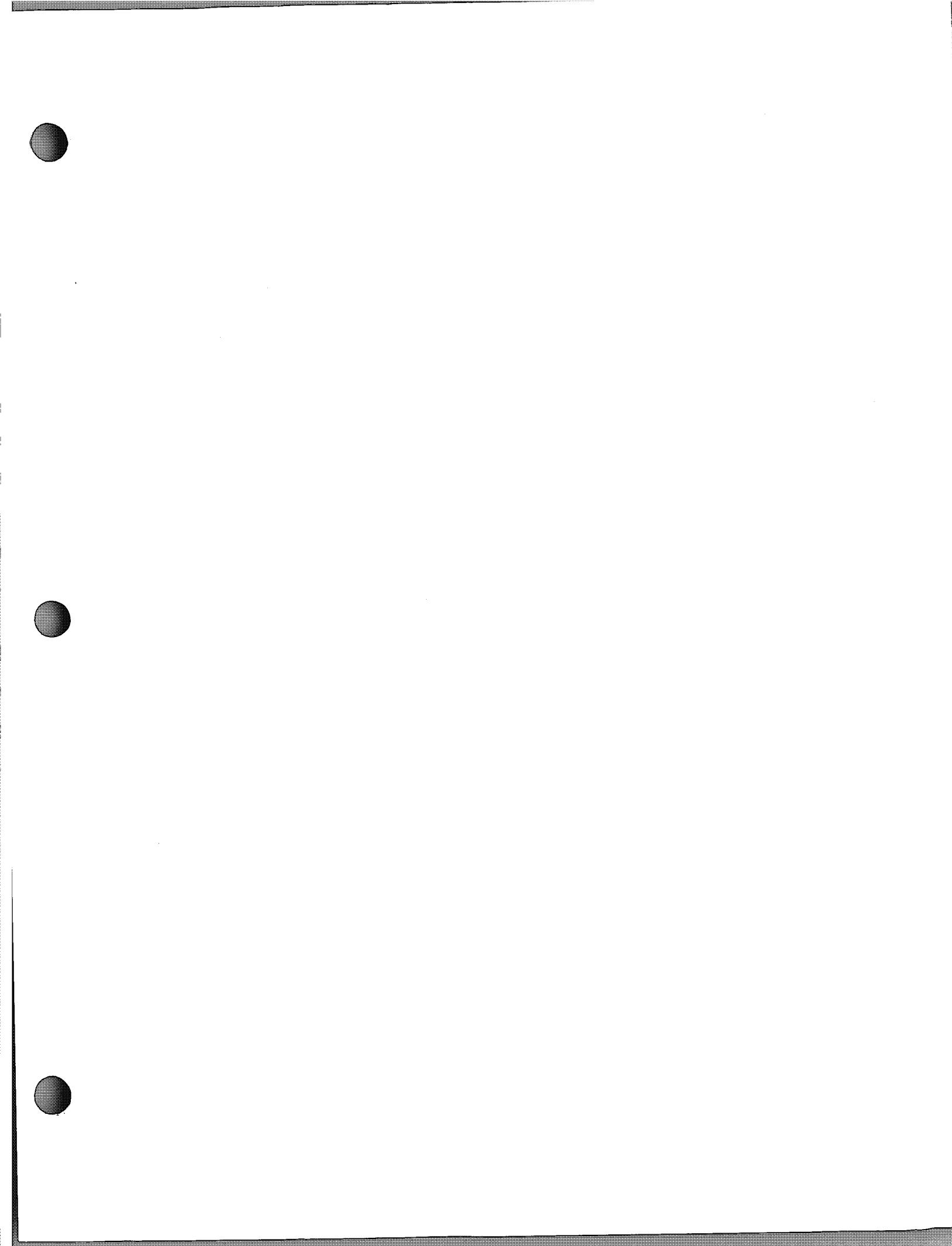
Summary of Cultural Education permits issued, 2010-2011

Year	Permits			Species		
	Issued	Moose	Orcas	Citizen	Other	
2010	23	24	8	0	3	
2011	18	16	7	1	5	
Total						
Year	Uses			Species		
	Youth/Camp	Festival	Other	Apple	Orca	
2010	21	2	0	78	11	
2011	15	1	2	87	11	

a)Includes 10 permits for AK Traditional Association to obtain permits to conduct a ceremony at Kukokkuk Museum.

b)Includes moose used at ceremony for opening of new building at Kukokkuk Museum.

c)The table only includes data since 2010 because prior to 2010 there were no permits for customary and traditional Native American religious ceremonies now authorized under SAACT 92-019.



Background

- Dept. of Law has advised that the current language leaves open questions as to limits on how many animals can be harvested; types of functions that are considered cultural; or where cultural event occur (in Alaska or elsewhere)
- At this point the department does not consider that there are any conservation concerns originating from issuing these permits
- Department is seeking clarification of any limitations the Board intends relative to issuing Cultural and Educational Permits

Proposal 43

- Review and modify nuisance beaver permits to allow for beaver flow devices
 - **Public Proposal**

Department Recommendation
Do Not Adopt

Review of Regulation

5 AAC 92.041. Permit to Take Beavers to Control Damage to Property

No person may take a beaver to control damage to property or resources outside of the seasons and bag limits established in 5 AAC 84 without first obtaining a permit from the department, issued under the following conditions:

Proposal 43

Review of Regulation

- (1) the commissioner or the commissioner's designee may limit the area, time period, method and means, and number of beavers to be taken;
- (2) a permit may only be issued at a time when, and for a place where, the commissioner has determined beavers are creating significant problems and that trapping otherwise authorized in 5 AAC 84 is unlikely to alleviate the problem;
- (3) a person taking a beaver under this section shall submit the skin for sealing in accordance with 5 AAC 92.170.

Proposal 43

Suggested Regulatory Change

- (1) the commissioner or the commissioner's designee may limit the area, time period, method and means, and number of beavers to be taken;
- (2) a permit may only be issued at a time when, and for a place where, the commissioner has determined beavers are creating significant problems and that trapping otherwise authorized in 5 AAC 84 or beaver flow devices are [is] unlikely to alleviate the problem;
- (3) a person taking a beaver under this section shall submit the skin for sealing in accordance with 5 AAC 92.170.

Proposal 43

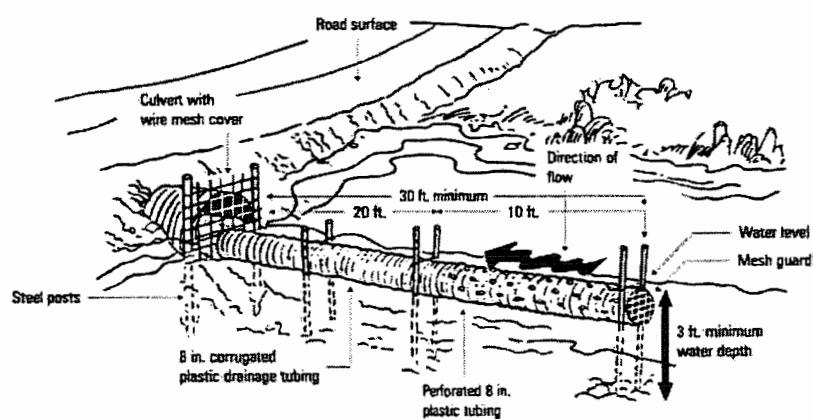
Discussion

Affect of this proposal....

- Department biologists would 1st have to do their best to determine if a flow device would be successful.
- Then, if so, a device would have to be installed which would require expense, time, and effort.
- Flexibility in the regulation would be lost resulting in substantial burden to department.

Proposal 43

Beaver Flow Device



Proposal 43

Discussion

Authors reasoning for proposal:

- *5 AAC 92.041 is based on outdated information*
- *Recent data reveals the value of beavers to healthy ecosystems.*
- *New methods of thwarting beavers can replace lethal removal.*
- *Cost savings to the department.*

Proposal 43

Discussion

- Department realizes the value of beavers and is aware of technological advances in mitigating beaver flooding.
- Present regulation allows department biologists to recommend beaver flow devices.
- In select areas these devices are being used and are successful.
- The cost and effort of installing these devices is often far beyond the scope of the problem.

Proposal 43

Conclusion

- Department biologists across the state prefer to see this regulation remain unchanged and consider it effective.
- The cost and maintenance of flow devices is an unnecessary burden in most cases.
- Lethal removal often solves problem, while providing opportunity to trappers.
- Cost of present program in time and/or \$ is fairly minor for most department offices.

Proposal 43

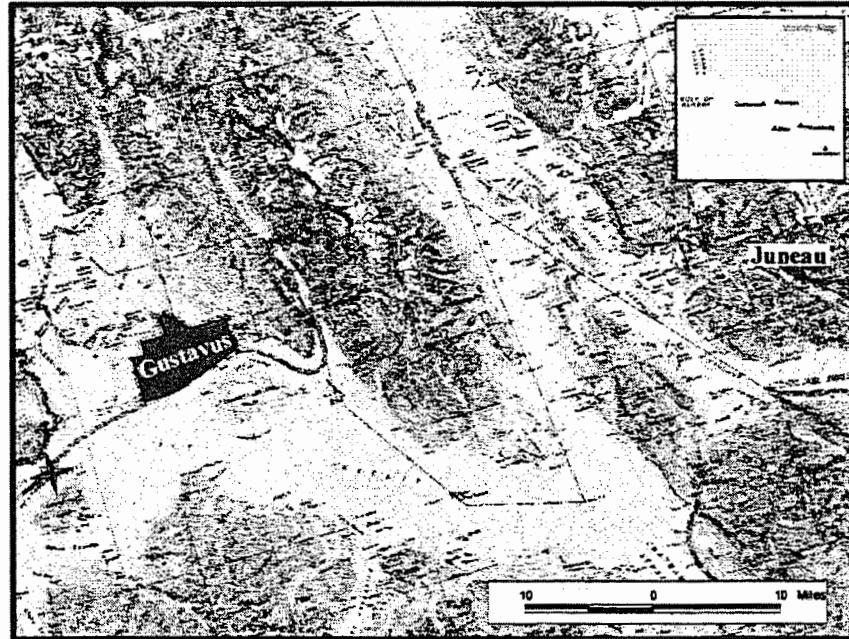
Proposal 257

Amend 5 AAC 92.095(a)(16)(A) to allow the use of larger snares for trapping wolves at Gustavus provided the snare is designed with a breakaway system and a diverter wire.

•Department Proposal

**Department Recommendation
Adopt**

Location of Gustavus



Discussion

- This proposal was submitted through an agenda change request to reinstate snaring opportunity for wolves at Gustavus that was provided by a board decision at the fall 2010 SE board meeting.
- Concerns with statewide implications from this decision led the board to redact this change at the November 2011 board meeting in Barrow.
- The board then asked the department to draft modified language that would pertain to snaring at Gustavus only.

Proposal 257

Suggested Language

5 AAC 92.095. Unlawful methods of taking furbearers; exceptions. (a) The following methods and means of taking furbearers under a trapping license are prohibited, in addition to the prohibitions in 5 AAC 92.080:

... (16) in Unit 1C, that portion west of Excursion Inlet and north of Icy Passage, by using...

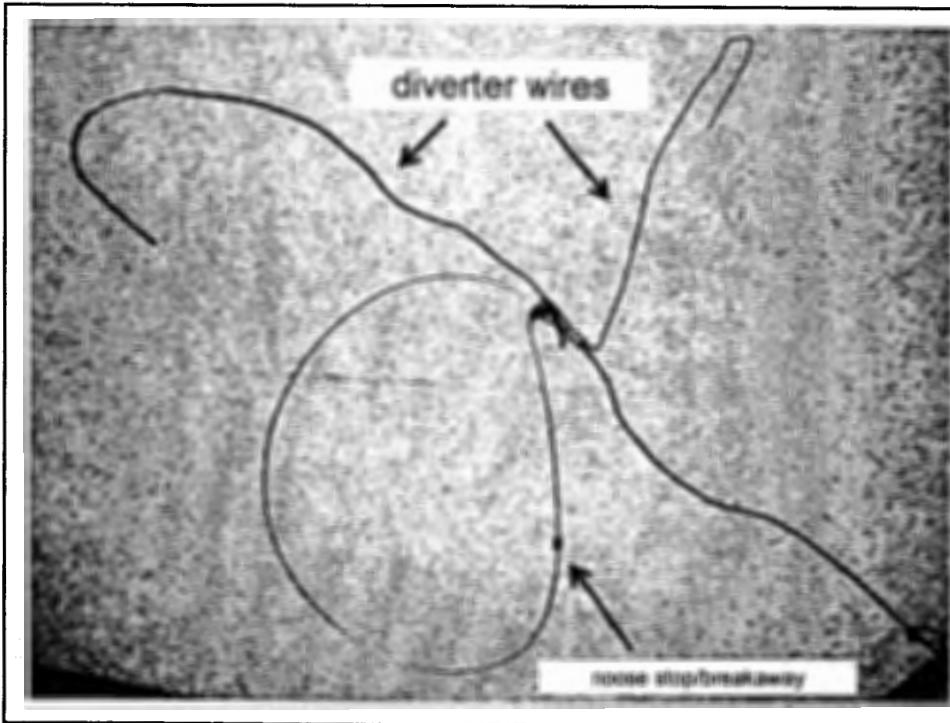
Proposal 257

Discussion

(A) a snare with a cable diameter of 1/32 inch or larger that is set out of water, unless the snare cable is severed at a point that is 10.0 inches to 10.5 inches from the cable end stop and then reattached with a double ferrule, and the snare has a wire designed to divert non-target species that is attached to the snare so that the diverter wire extends at least 28 inches from the snare loop and is perpendicular to the loop;

- This language would be specific to Gustavus.

Proposal 257



Conclusion

- Good support for the proposal based on research and evaluation of the snare design by the department and trappers.
- The department hosted a well received trapping clinic focused on the design and use of breakaway snares with diverter wires.
- Trappers are currently using these types of snares to pursue wolves in Gustavus.
- Without this proposed method, trappers in Gustavus will no longer be able to snare wolves as of July 1, 2012.

Proposal 257

Proposal 46

Allow the sale of big game trophies

- Recommendation: No Recommendation
- Public Proposal

5 AAC 92.200 - Purchase and sale of game

- (b) Except as provided in 5 AAC 92.031, a person may not purchase, sell, barter, advertise, or otherwise offer for sale or barter:
- (1) any part of a brown bear, except an article of handicraft made from the fur of a brown bear;
 - (2) a big game trophy, or a black bear trophy of any kind;**
 - (3) a big game animal skull, except the skull of a wolf or wolverine, or a horn or antler that is still attached to any part of the skull;

Trophy – means a mount of a big game animal, including the skin of the head (cape) or the entire skin, in a lifelike representation of the animal, including a lifelike representation made from any part of a big game animal; “trophy” also includes a “European mount” in which the horns or antlers and the skull or a portion of the skull are mounted for display

Background

- Proponents feel that big game trophies should be treated as private property
- No expected conservation concerns from allowing sale of trophies
 - Many Western states allow sale of trophies
 - May be some enforcement concerns

Proposal 47

Allow the sale of big game trophies acquired through legal action such as divorces

- Recommendation: No Recommendation
- Public Proposal

Background

- Proposal requests that sale of big game trophies be allowed in specific circumstance (i.e. divorce, death, or other civil actions)
- The department currently issues permits (5 AAC 93.031) for the sale of big game trophies in the following circumstances:
 - Unclaimed mount from taxidermy businesses
 - Settling an estate
 - Bankruptcy

Proposal 48

Prohibit the sale of bear parts harvested on National Park Service lands

- Recommendation: Take No Action
- Public Proposal

Background

- The focus of this request is the sale of bear meat.
- There are no regulations that currently allow for the sale of bear meat, so there is nothing to prohibit.
- During the Board of Game meeting in January 2010, the Board adopted a dual classification for black bears. They are now classified as big game, subject to taking with a hunting license, and a furbearer, subject to taking under a trapping license.
- At this time, the Board has not adopted any black bear trapping regulations, so no black bear trapping is currently allowed in the state. The use of snares is allowed under specific control permits, but that is not general trapping.

Background

- The sale of big game meat is currently prohibited, so the sale of the meat of a black bear taken under hunting regulations with a hunting license is not allowed.
- The sale of furbearer meat is not prohibited, so the meat of a black bear taken under trapping regulations with a trapping license would be allowed. Because there are no seasons at this time, no black bears can be taken under trapping and no black bear meat is allowed to be sold.

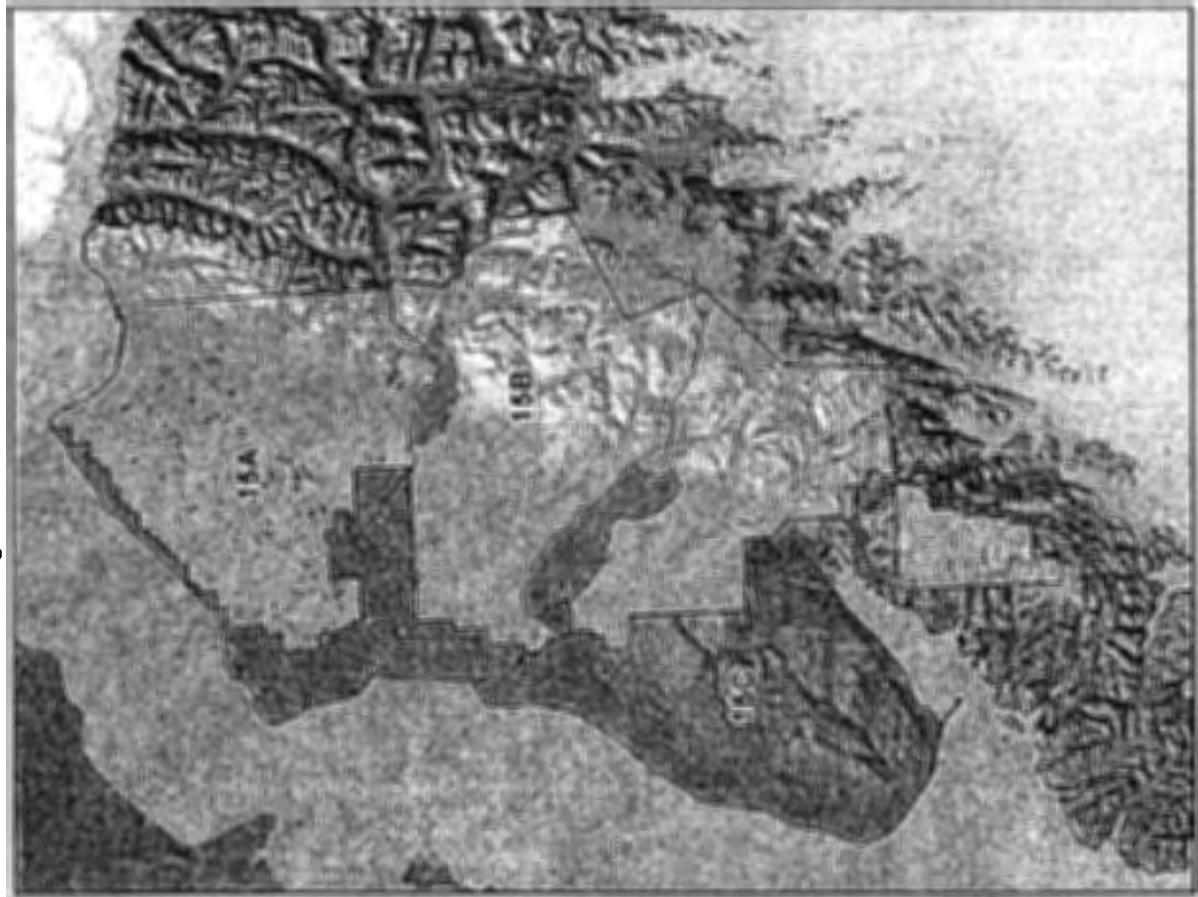
Proposal 35

Effect : Intensive Management plan for moose in Unit 15A

Concern : Low moose population

Department position : adopt

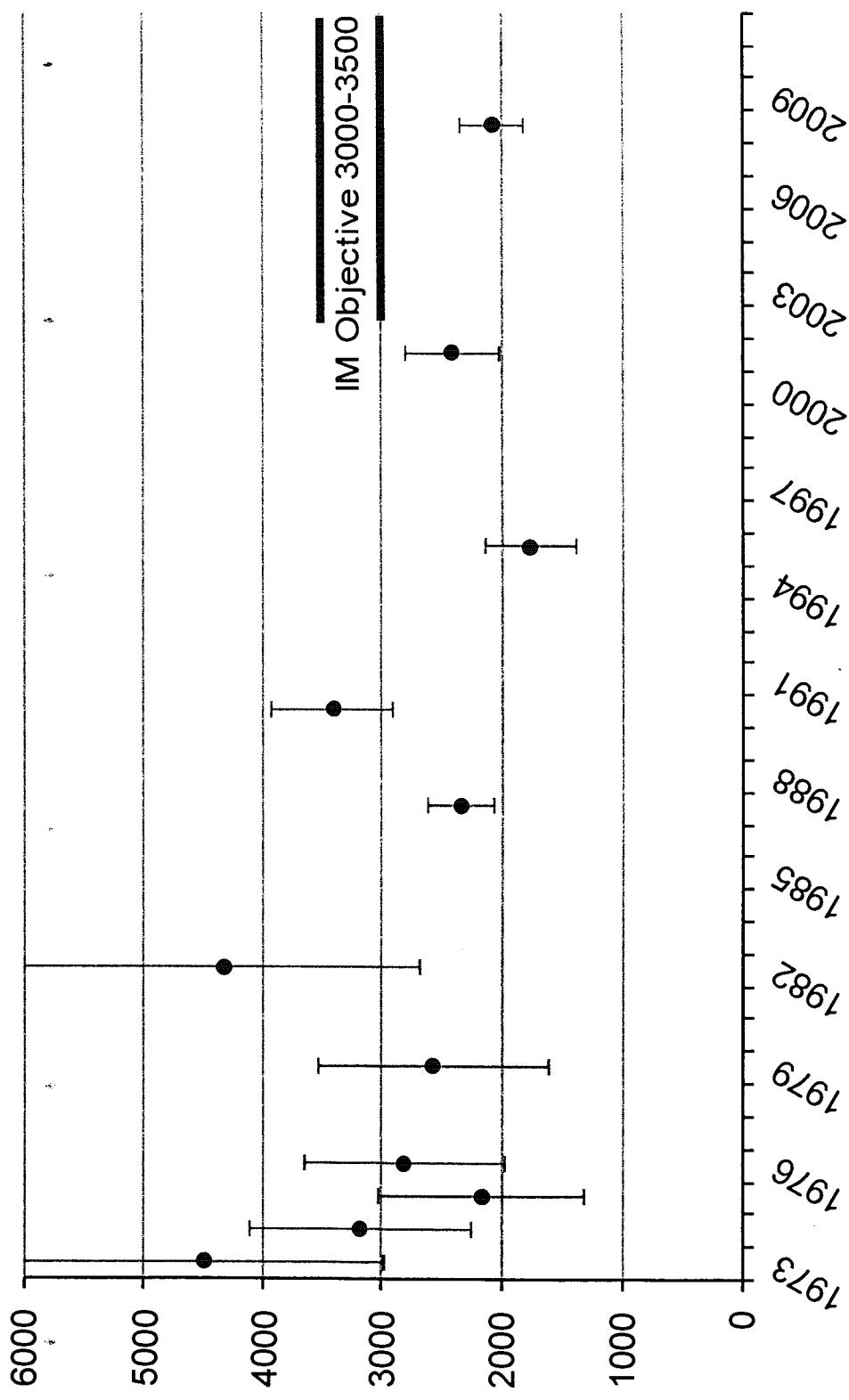
Proposal 35



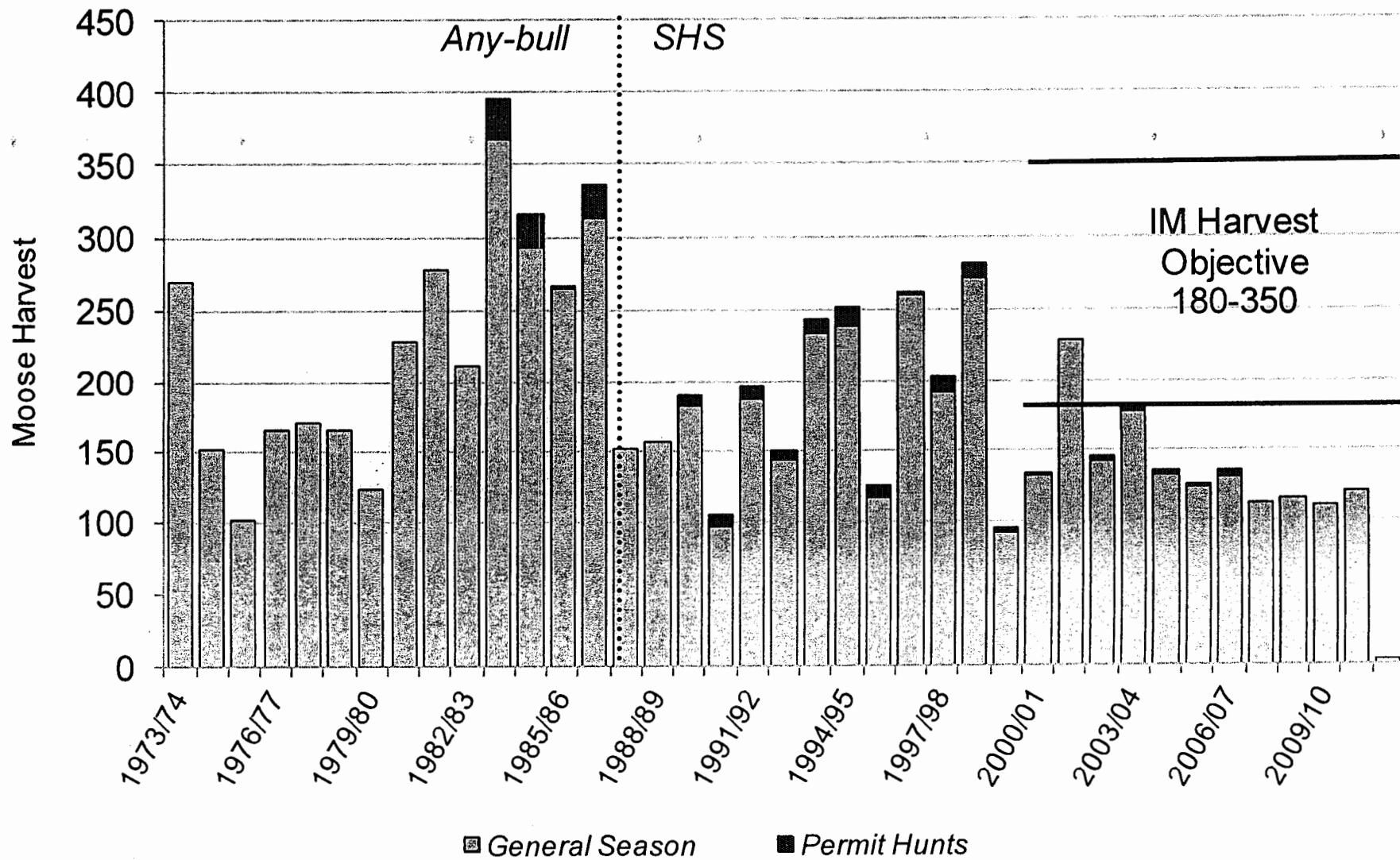
Fires from 1971-2010



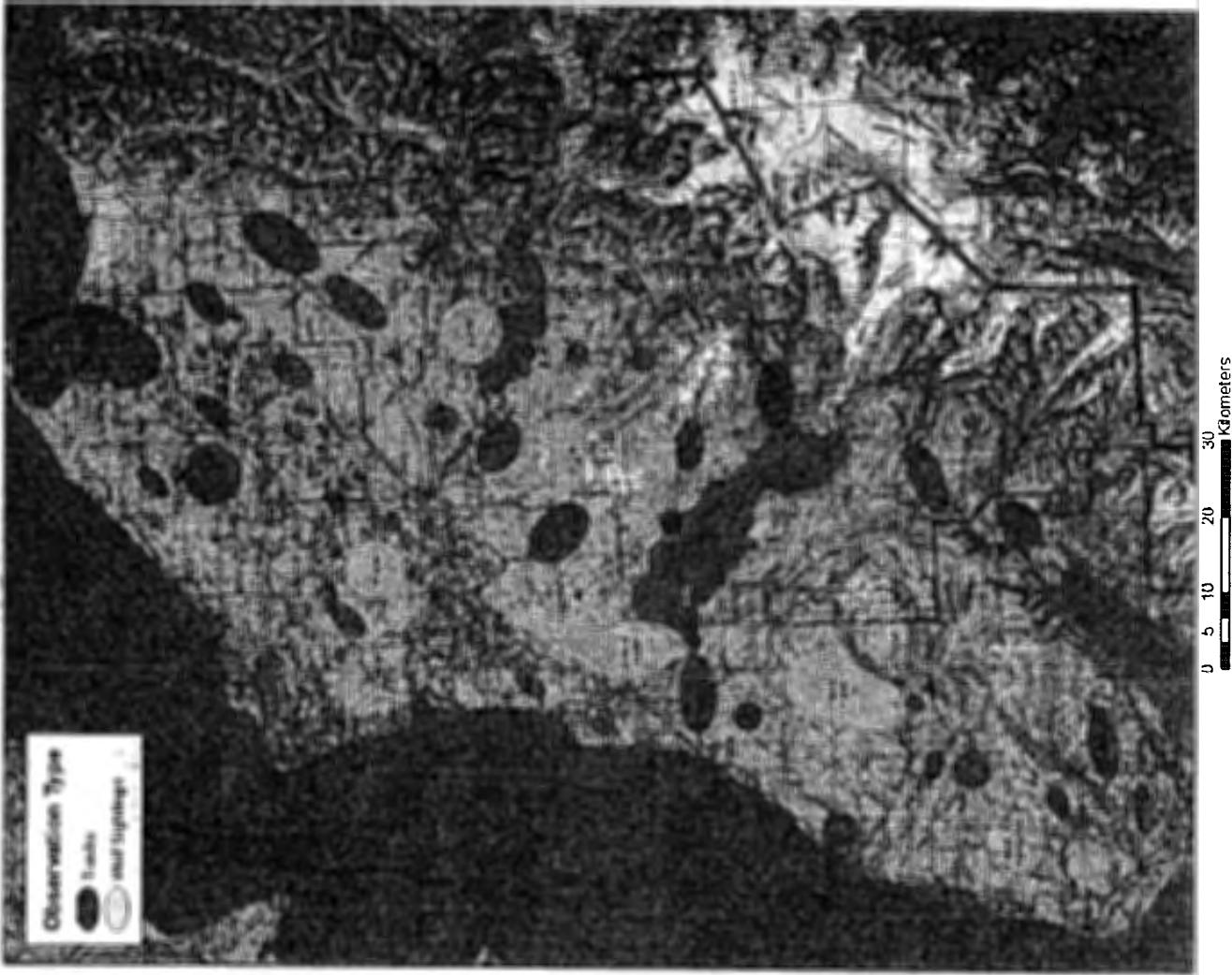
15A Moose Population Size



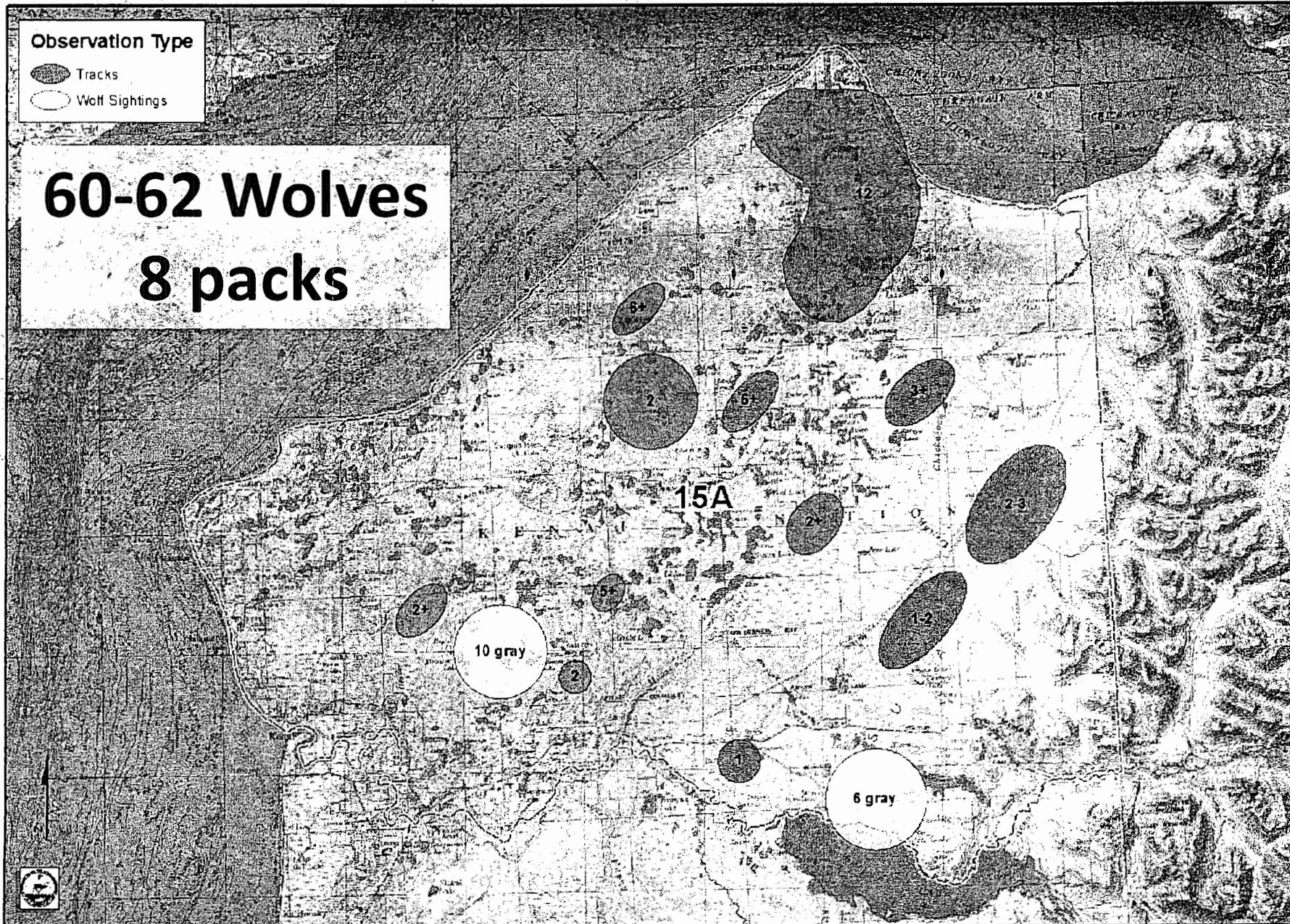
15A Moose Harvest



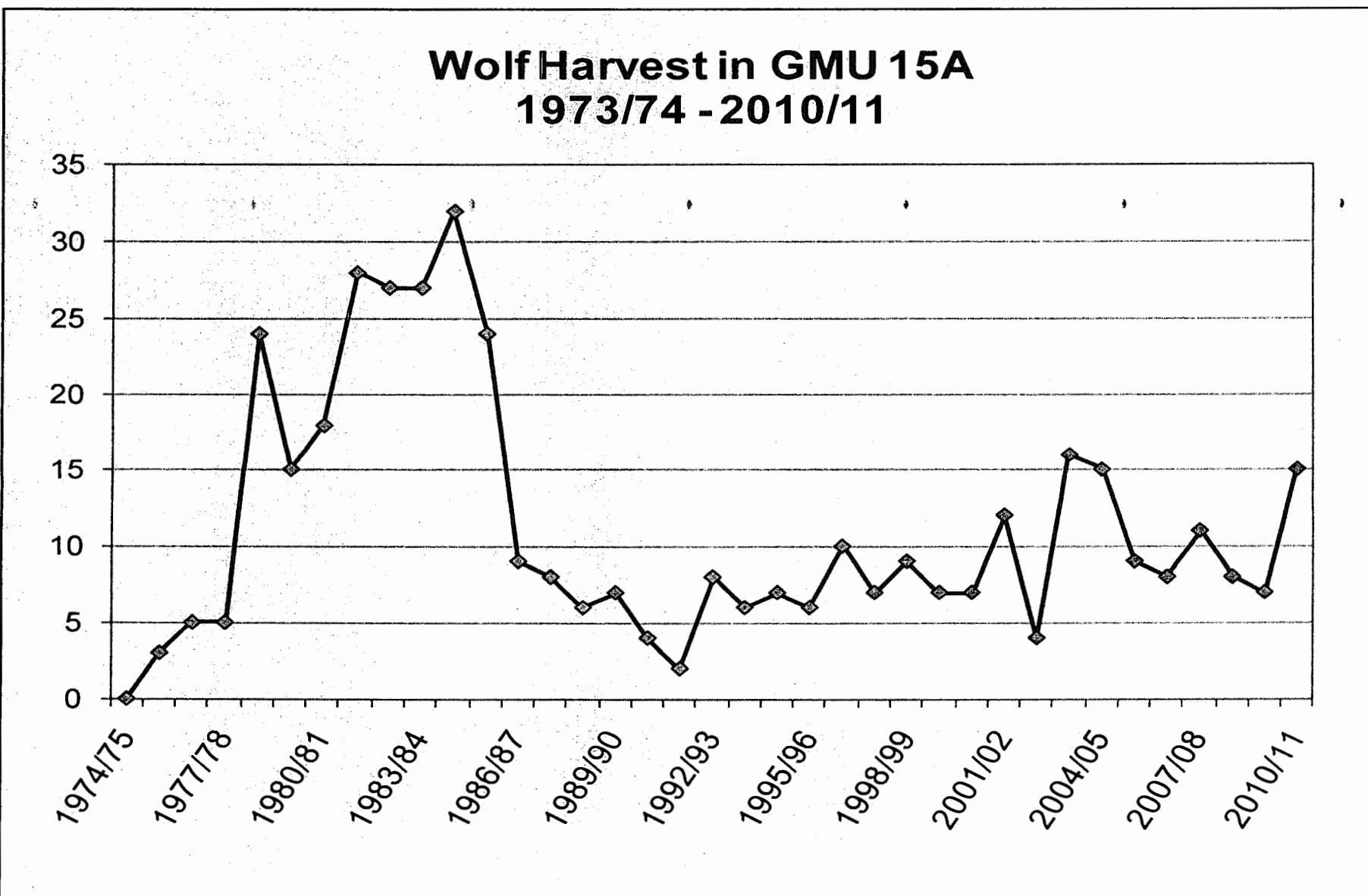
GMU 15 Wolf Count November 17-21, 2011



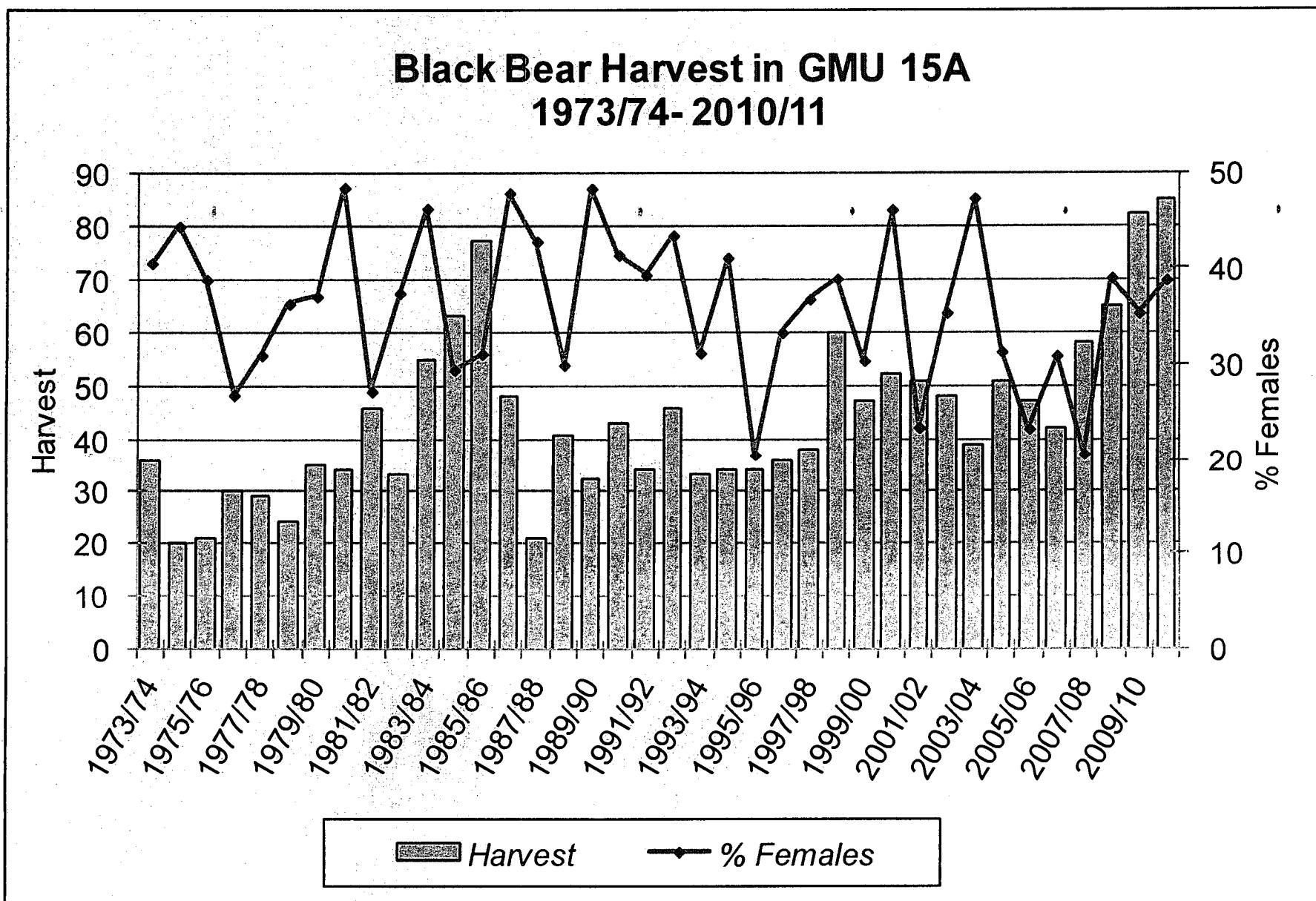
GMU 15A Wolf Count: November 17-21, 2011



Unit 15A wolves

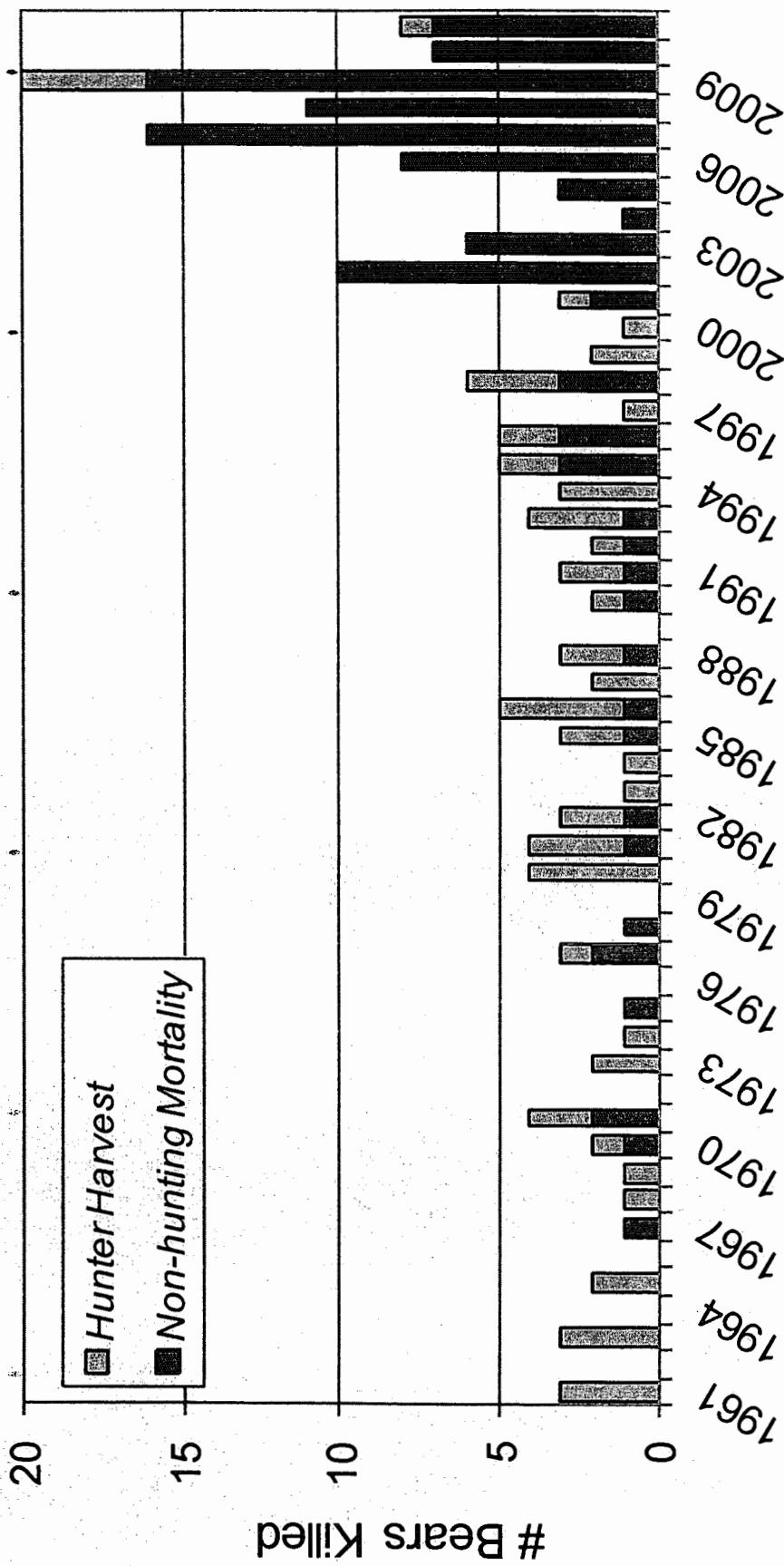


Unit 15A black bears

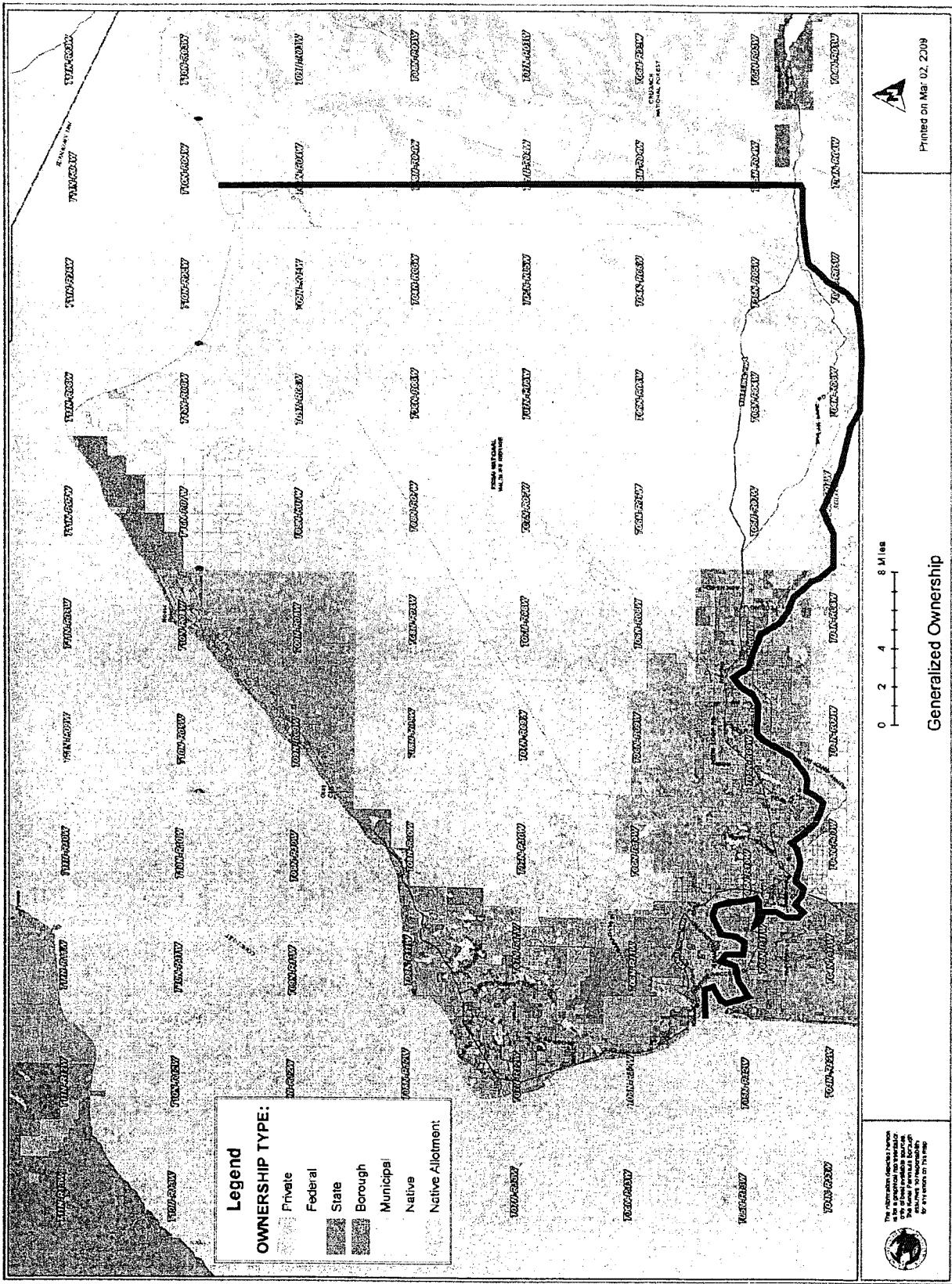


Unit 15A brown bears

Brown Bear Mortality in GMU 15A
1961-2011



Unit 15A Land Ownership



Proposal 35: Unit 15A

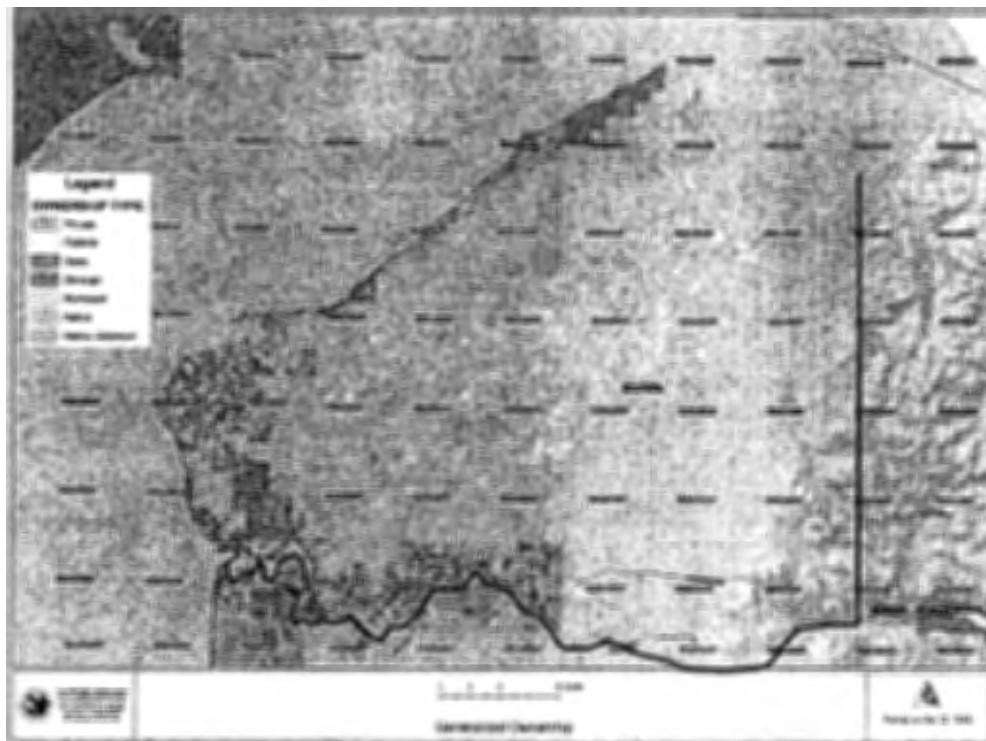
Feasibility assessment

- Land ownership and current poor condition of the habitat are constraints
- Successful wolf control alone will not return the moose population or harvest back to IM objective levels
- Wolf removal may allow for a reallocation of moose from wolves to harvest

Proposal 35: Unit 15A

Operational Plan (IM areas)

- Aerial wolf control on available state land and native land (pending approval)



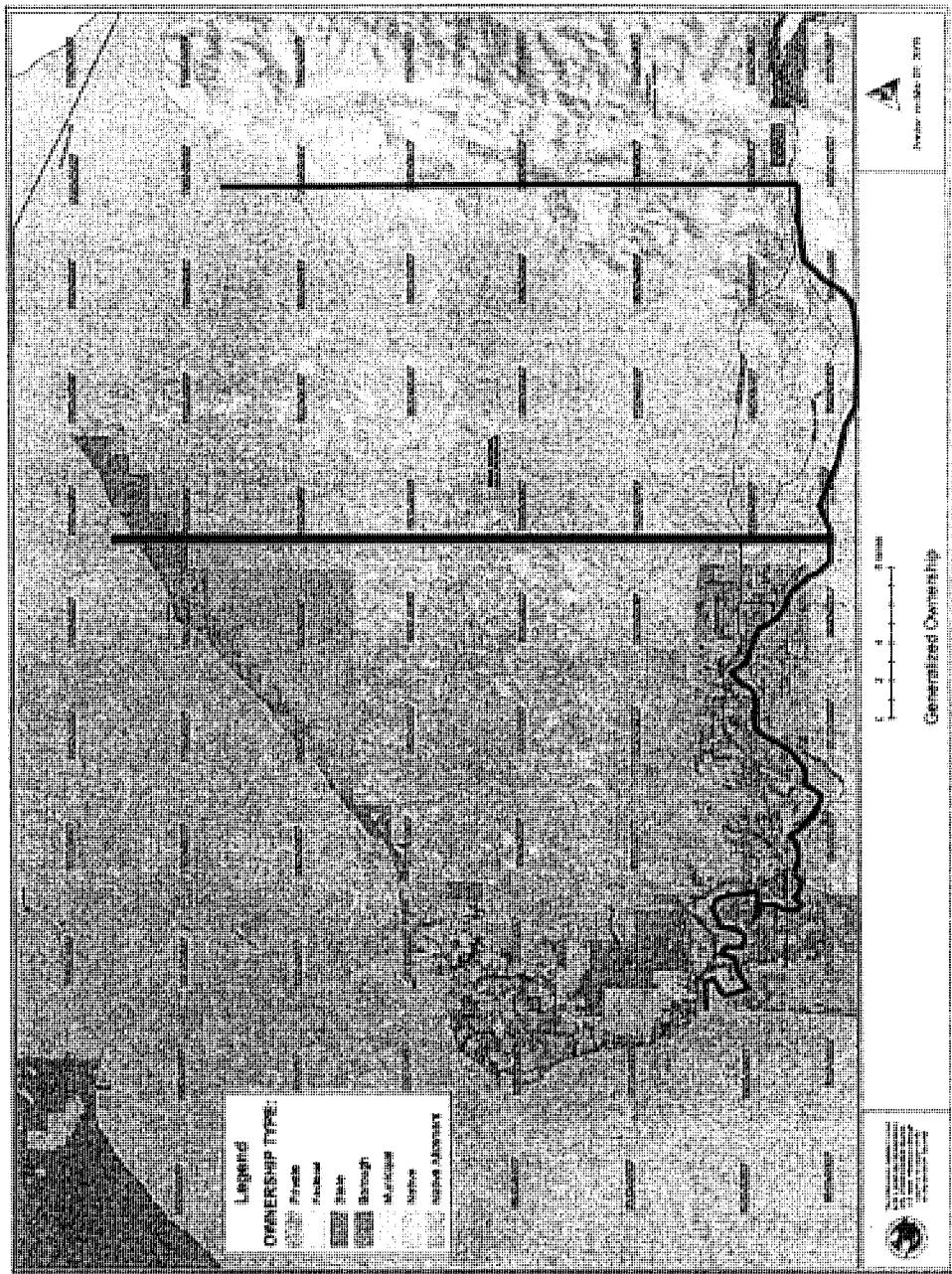
Proposal 35: Unit 15A

Operational Plan (response metrics)

- Size and distribution of wolf population and harvest
- Moose population size and harvest
- Moose composition ratios (calf:cow)
- Nutritional indices
- Habitat enhancement

Proposal 35: Unit 15A

Operational Plan (study design)



Proposal 35: Unit 15A

Operational Plan (decision thresholds for suspending program)

1. If there is no detectable difference in calf:cow ratios or % calves after 3 years
2. If after 3 years, any measure consistent with significant levels of nutritional stress are identified
3. If the Unit 15A wolf population falls below 15 wolves at any time during the program

Proposal 35

Department position:

Adopt intensive management
Plan for unit 15A

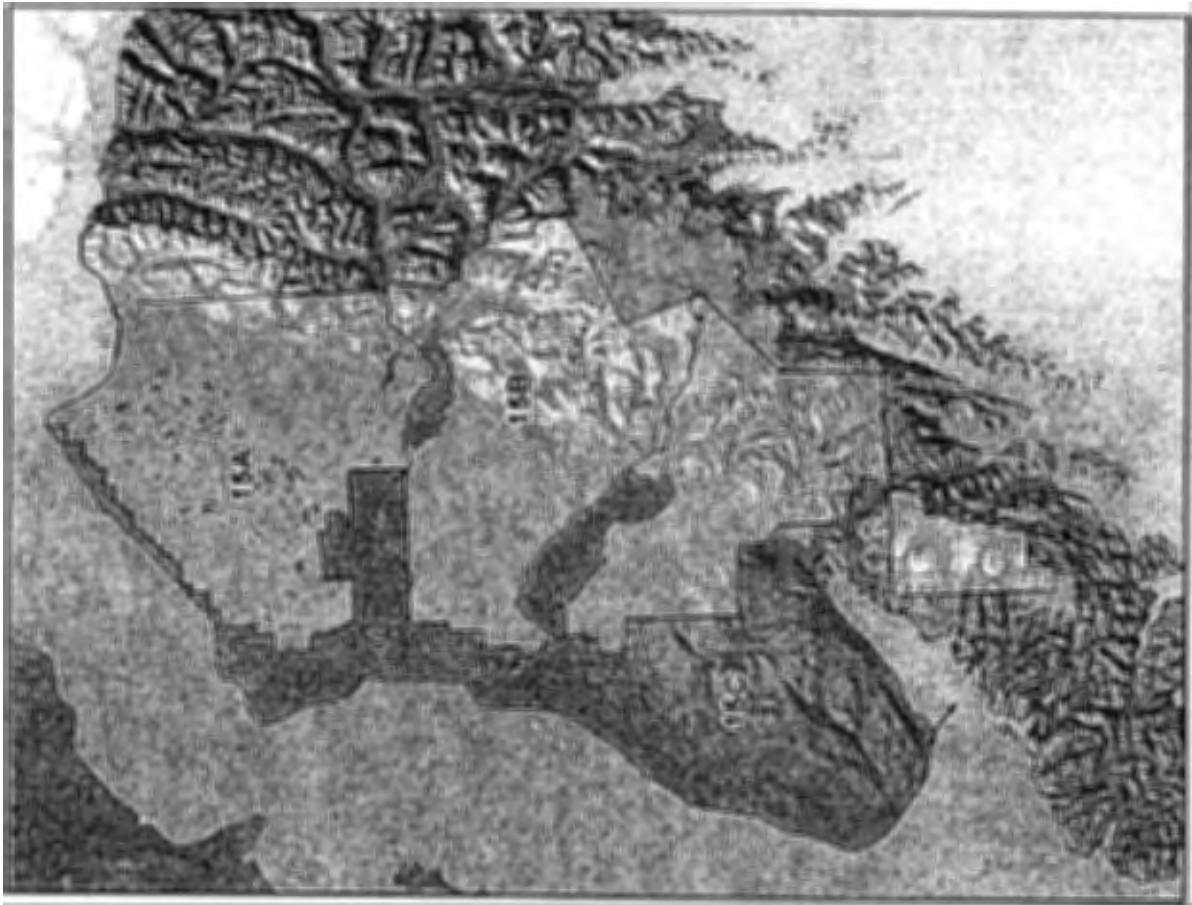
Proposal 36

Effect : Intensive Management plan for moose in Unit 15C

Concern : Declining bull:cow ratios, low calf survival

Department position : adopt

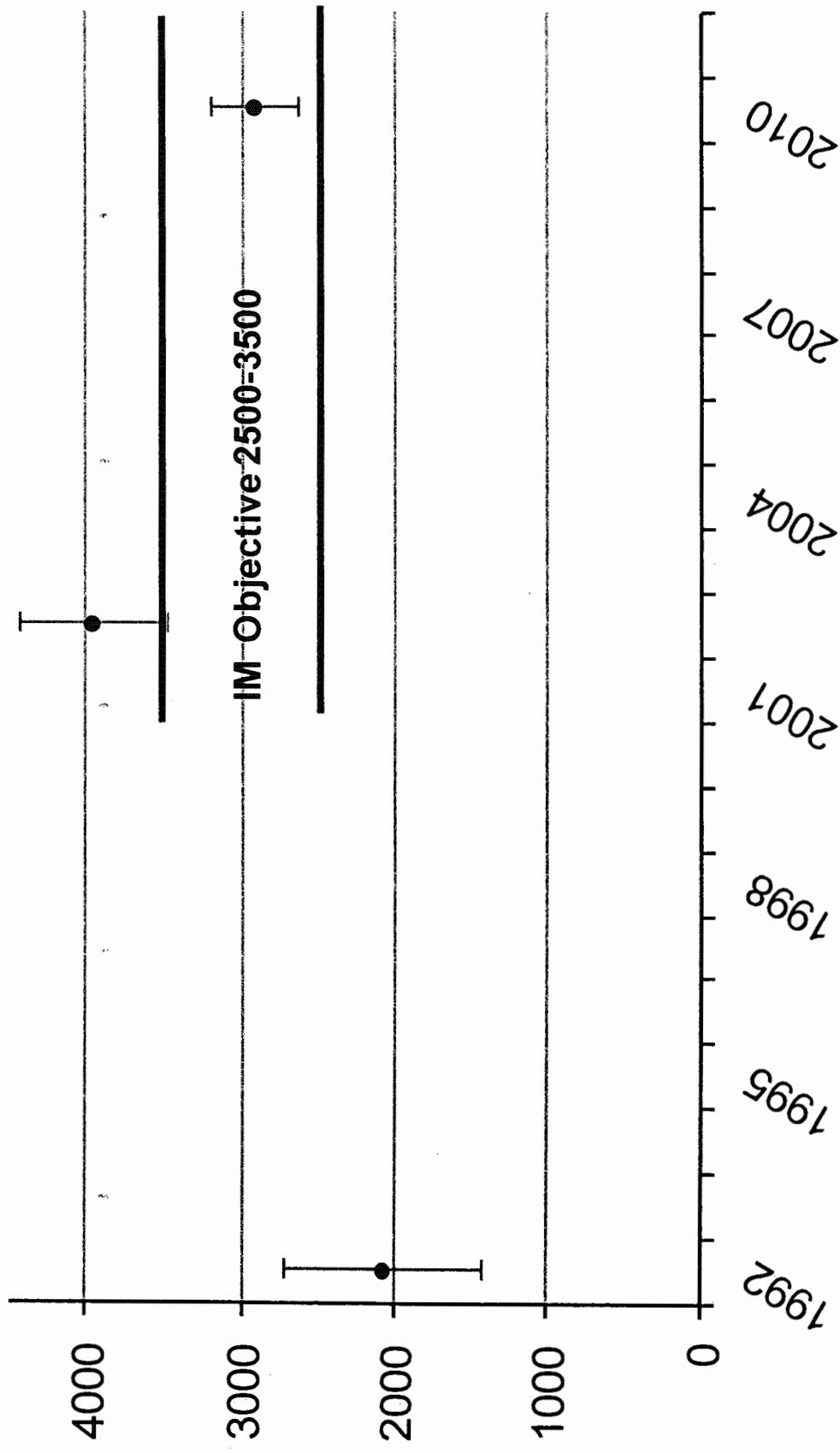
Proposal 36



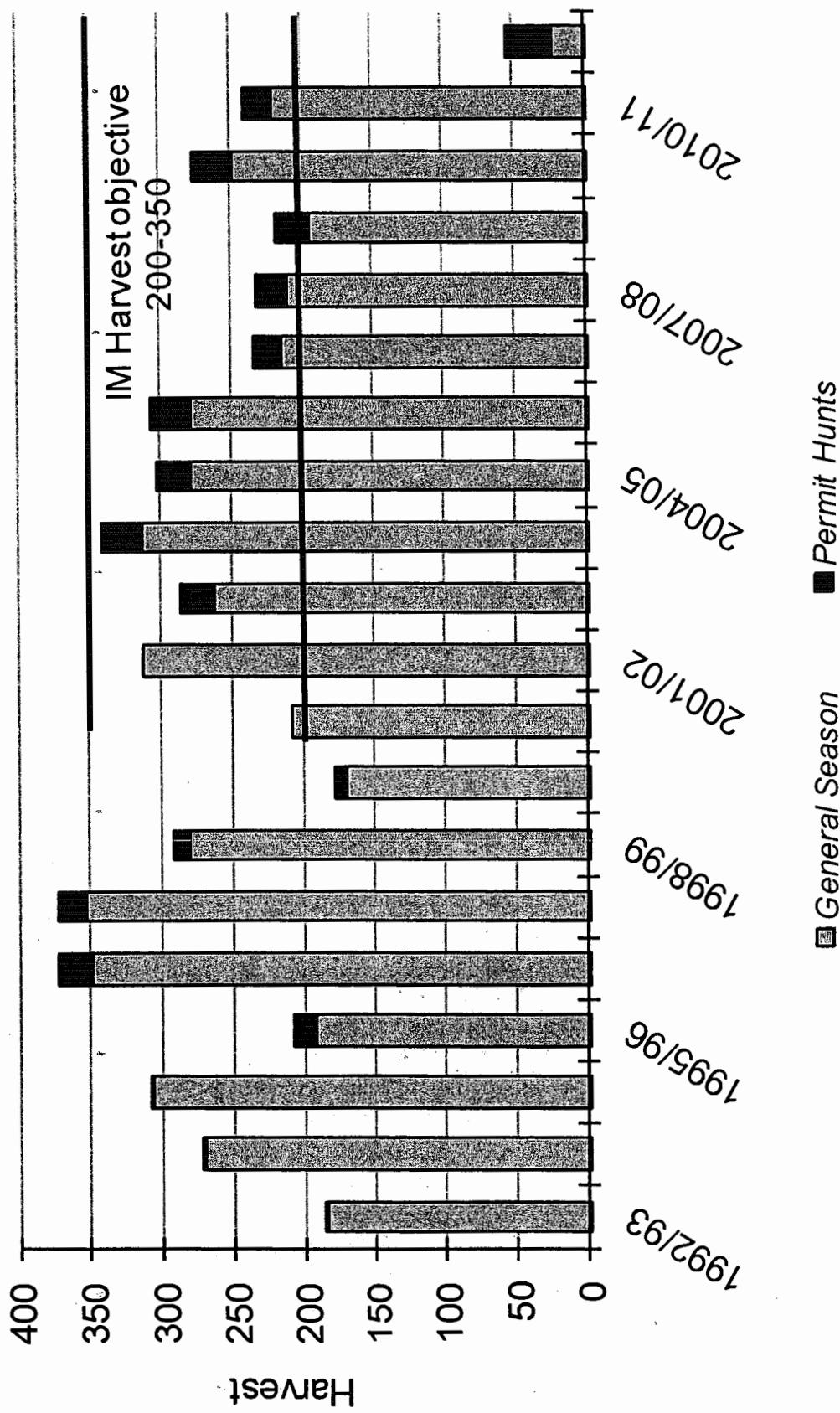
Proposal 36



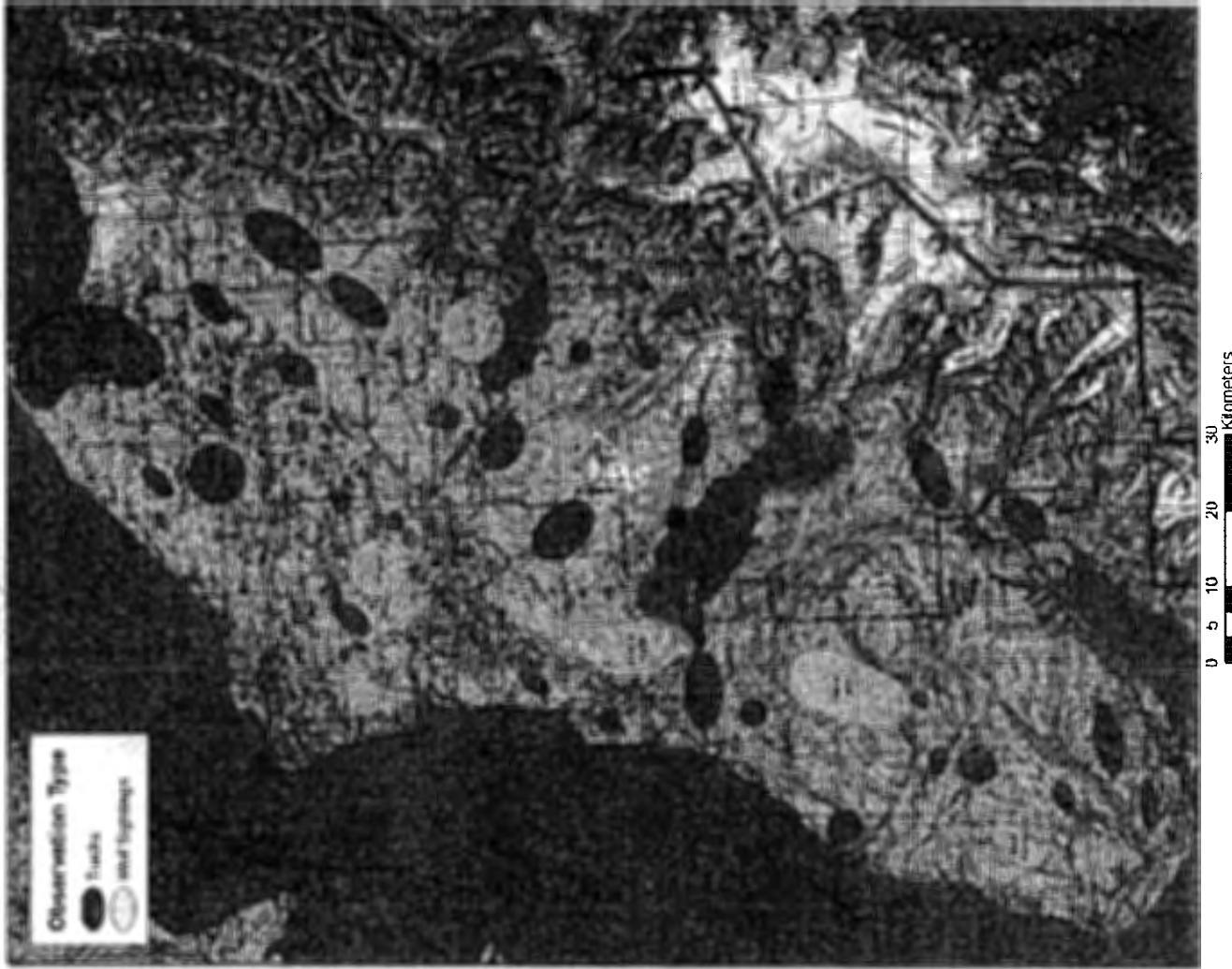
15C Moose Population Size



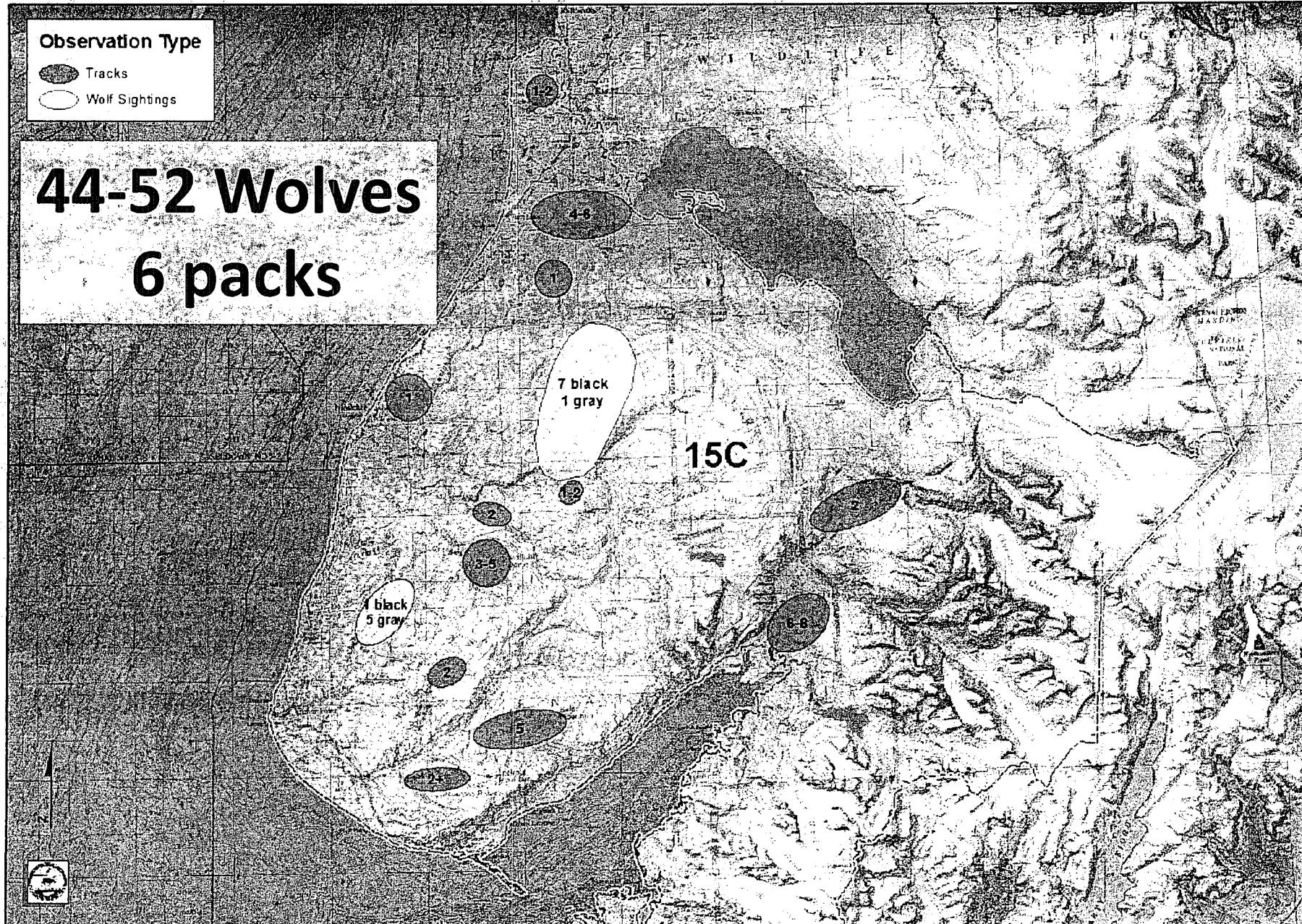
15C Moose Harvest



GML 15 Wolf Count, November 17-21, 2011

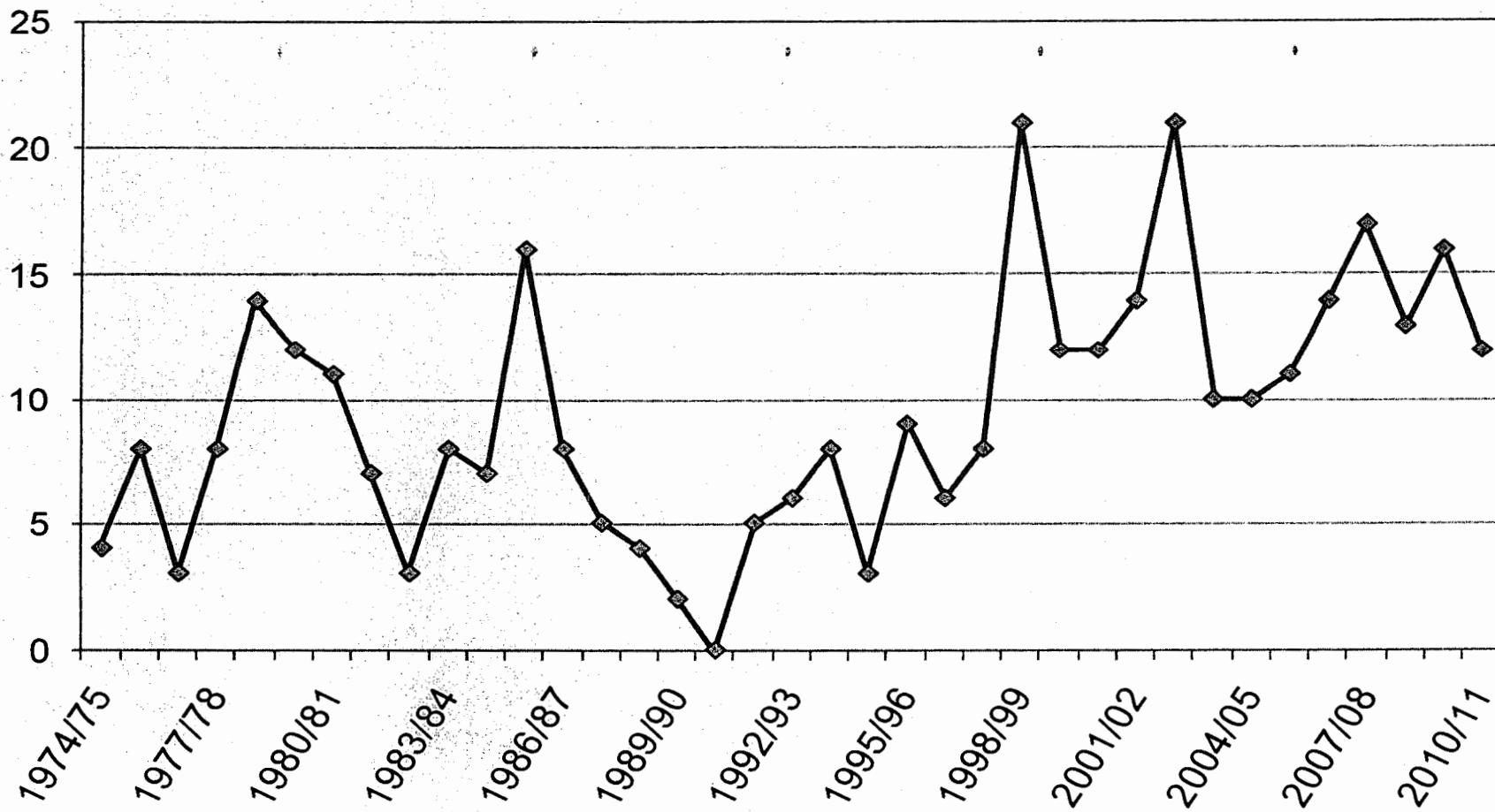


GMU 15C Wolf Count November 17-21, 2011



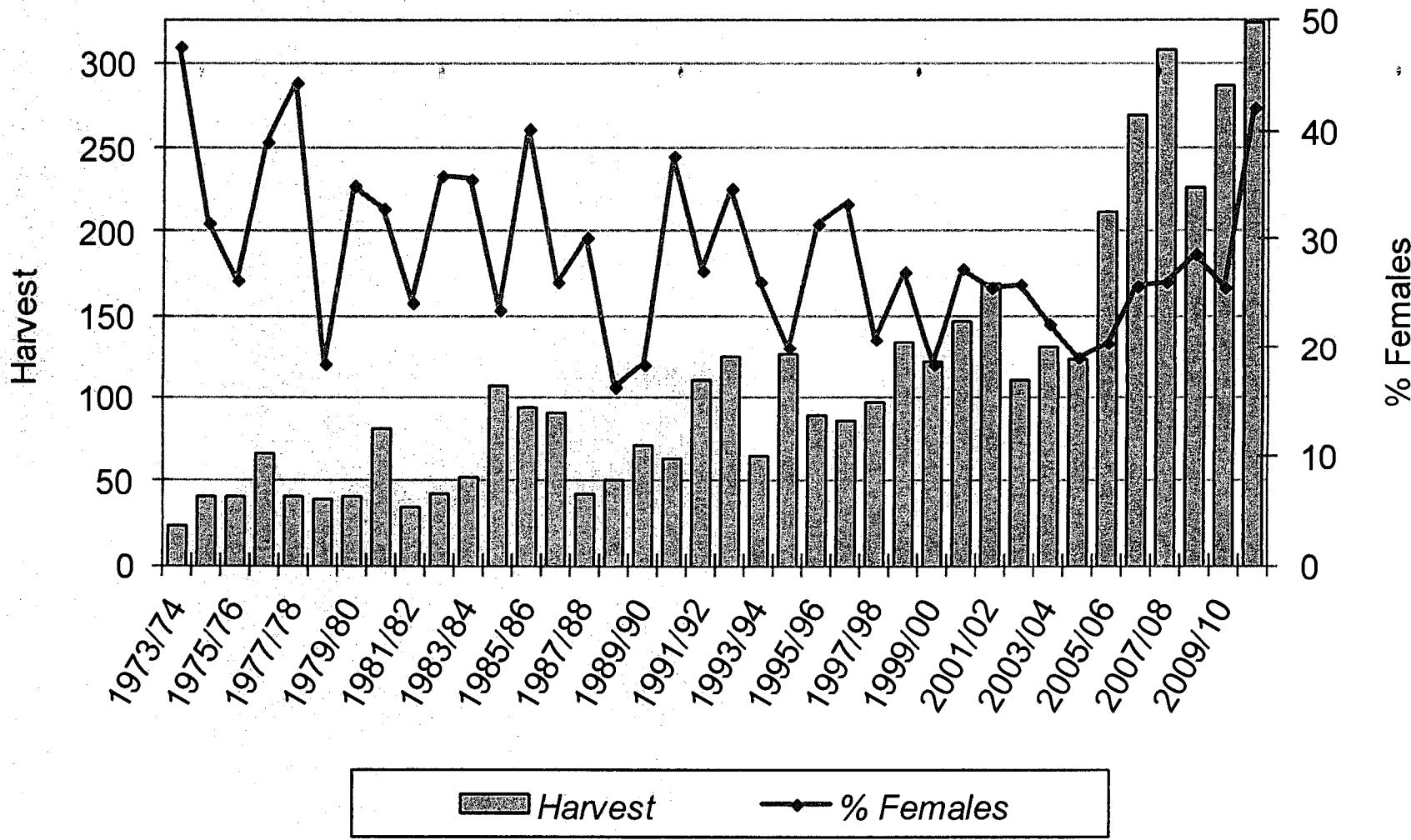
Unit 15C wolves

**Wolf Harvest in GMU 15C
1973/74 - 2010/11**



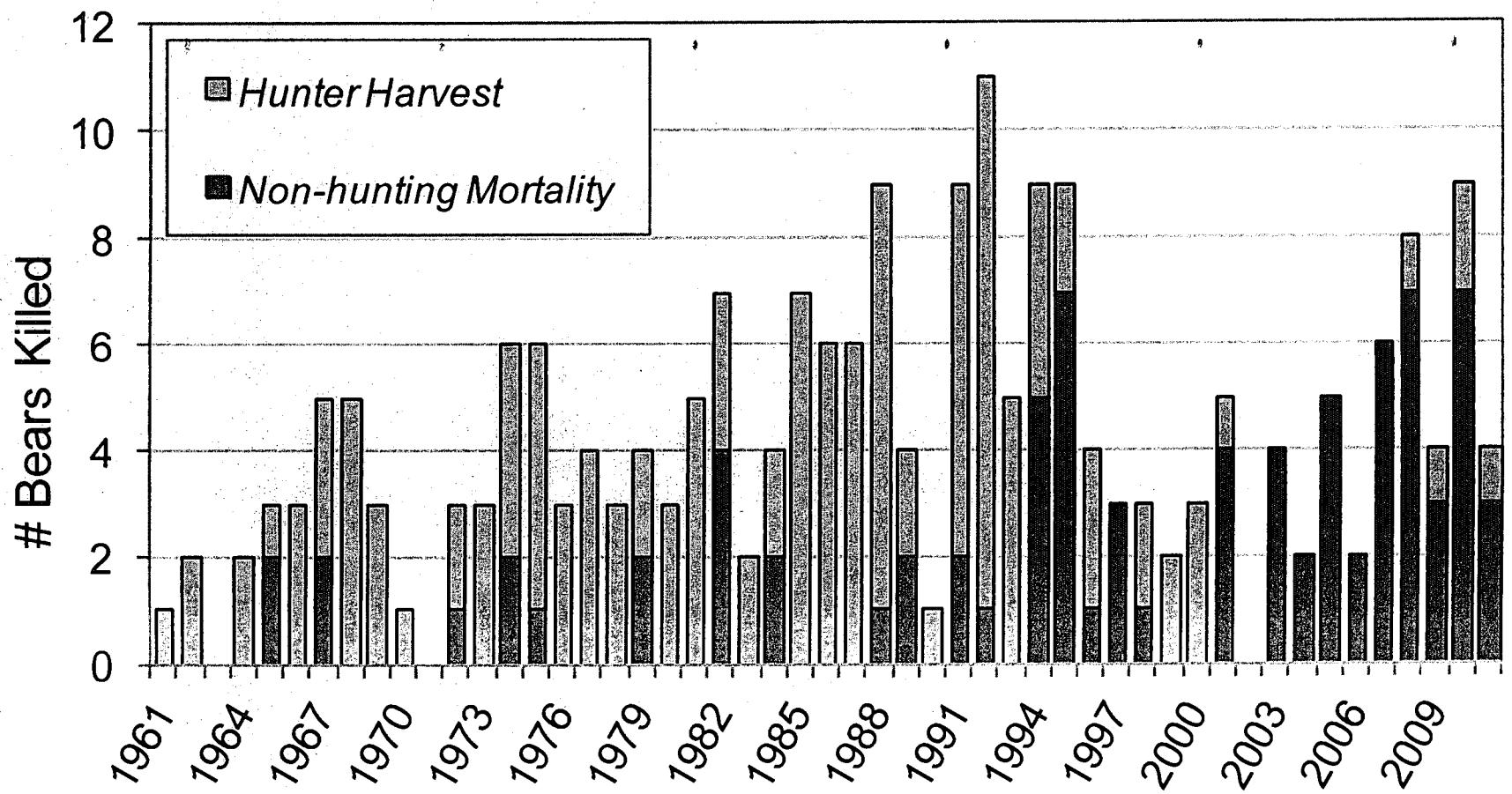
Unit 15C black bears

Black Bear Harvest in GMU 15C
1973/74- 2010/11



Unit 15C brown bears

Brown Bear Mortality in GMU 15C
1961-2011

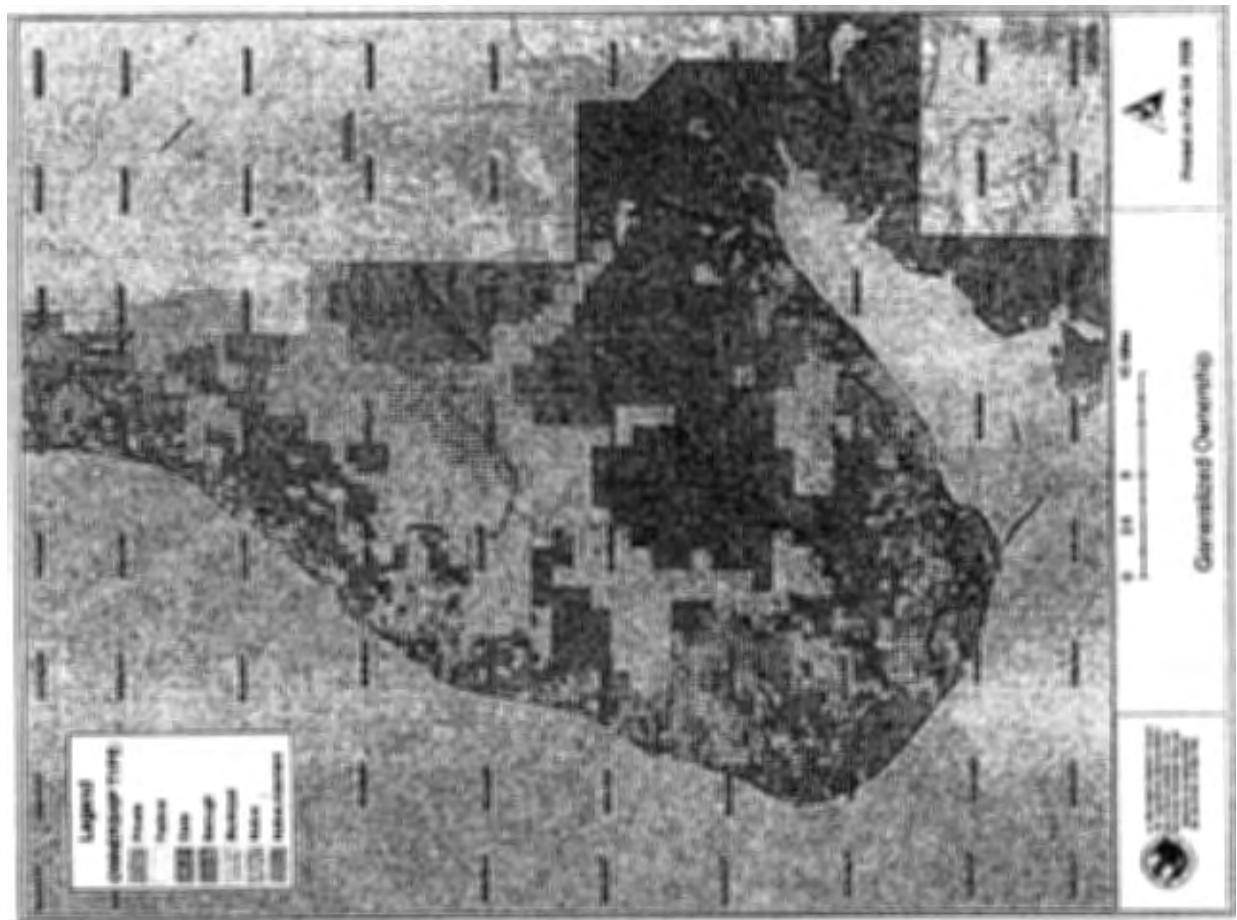


Proposal 36: Unit 15C

5AAC 92.106 (5)(B)

- For purposes of implementing AS 16.05255(e)-(g), the Board will not consider as significant any reduction in taking that is intended or expected to be of a short-term and temporary nature and is necessary for the conservation of the population
- While the previous bull harvest was unsustainable, (cause for low b:c ratios) the 2013 harvest may not be within IM objectives
- IM actions would be needed for the harvest to reach the upper end of the IM objectives

Unit 15C Land Ownership



Proposal 36: Unit 15C

Feasibility assessment

- Moose population is within IM objectives
- 5AAC 92.106(5)(B)
- Considering relatively high moose densities, wolf control may allow for a reallocation of moose from wolves to harvest
- Successful wolf control may allow a harvest at upper IM objective levels

Proposal 36: Unit 15C

Operational Plan (IM areas)

- Aerial wolf control on available state land and native land (pending approval)



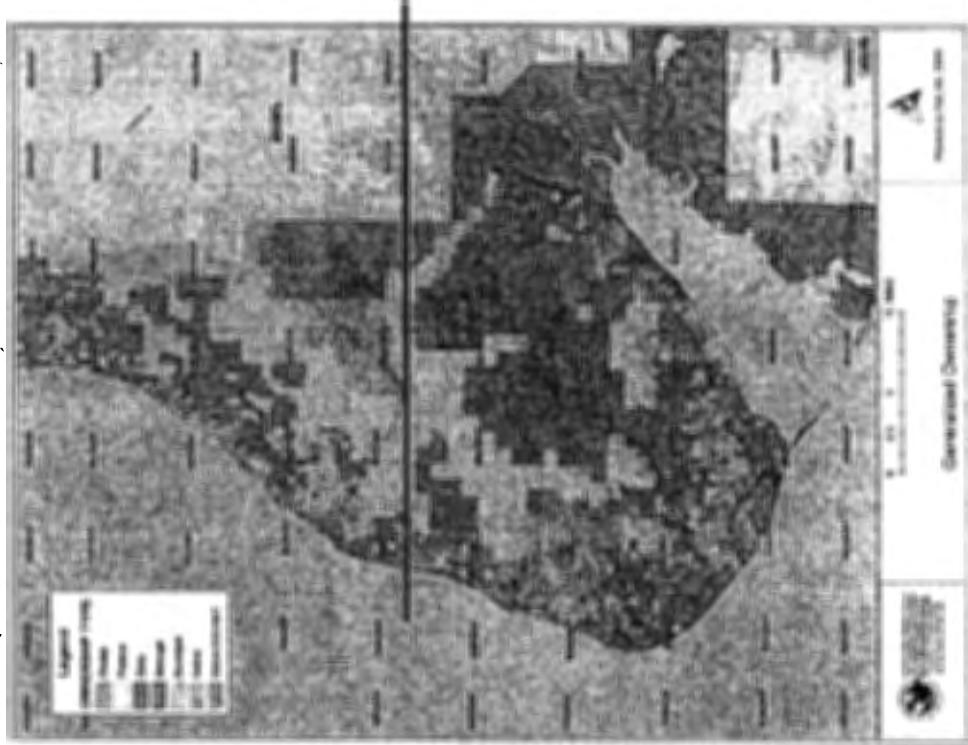
Proposal 36: Unit 15C

Operational Plan (response metrics)

- Size and distribution of wolf population and harvest
- Moose population size and harvest
- Moose composition ratios (calf:cow)
- Calf survival (indirect measures)
- Nutritional indices

Proposal 36: Unit 15C

Operational Plan (study design)



Proposal 36: Unit 15C

Operational Plan (decision thresholds for suspending program)

1. If the moose population exceeds 3.0 moose/mile²
2. If after 3 years, any measure consistent with significant levels of nutritional stress are identified
3. If the wolf population falls below 15 wolves at any time during the program

Proposal 36

Department position:
Adopt intensive management Plan
for unit 15C

**Draft Operational Plan for Intensive Management of
Moose in Game Management Unit 15A
During Regulatory Years 2012-2017**

Prepared by the Division of Wildlife Conservation

January 2012



This document provides information about how the department of Fish and Game (department) plans to implement the Intensive Management (IM) plan if passed by the Board of Game (Board). The elements of this plan are based on the enabling regulation (5 AAC 92.125), but as an internal department plan it is subject to change without Board action. This plan, and subsequent modifications, will be the basis of annuals reports to the Board as required by regulation. The department welcomes comments from the public about proposed actions and methodologies and the department may modify the plan though time based on additional input.

Summary of supporting information

This operational plan has been prepared by the Alaska department of Fish and Game (ADF&G) to provide supporting information on the Intensive Management (IM) plan for moose in Unit 15A during 2012-2017. The IM Plan is found in Title 5, Alaska Administrative Code, Section 92, Part 125 (abbreviated as 5 AAC 92.125). Based on the biological and management information for this area (Appendix A), this operational plan describes rationale for evidence of limiting factors; choice of indices for evaluating treatment response; and decision frameworks for predation control, habitat enhancement, and prey harvest strategies. *Agency Protocol For Intensive Management Of Big Game In Alaska* (2011) describes the administrative procedures and the factors and strategies in adaptive management of predator-prey systems to produce and sustain elevated harvests of caribou, deer, or moose in selected areas of Alaska. The IM Plan for moose in Unit 15A has been developed based on the request of the Alaska Board of Game (Board). The IM plan and this operational plan include information and recommendations from a Feasibility Assessment prepared by the department and the recommendations by the Board following public comment at the March 2011 Region II meeting.

Background

The moose population in Unit 15A has been at relatively low densities since the early 1990s. Habitat quality appears to be a major cause of the decline in moose to the current levels. Dating back to the 1880s, the rise and fall of the Unit 15A moose population correlates well with fire history. Moose densities peaked 15-20 years post-fire and by 40 years post-fire densities returned to pre-fire levels. There has not been a major fire in Unit 15A for over 40 years.

The IM objectives for Unit 15A were established in 2000 with a population objective of 3000–3500 moose and a harvest objective of 180–350. The moose population in Unit 15A was below IM population objectives well before the objective was established and has never met objectives to date. The reported harvest in Unit 15A has been below the IM objective in 10 of the 11 years since the objective was established.

The last moose census in Unit 15A conduced in 2008 estimated 2,088 moose (95% CI: ± 264 , assumed sightability correction factor [scf] of 1.25; Figure 3). The current estimate equates to a density of 1.6 moose/mi². The last three density estimates (1995, 2001, and 2008) have not shown statistical differences. However, there was a 40% decline in the estimates between 1990 and 2008.

A wolf survey conducted in November 2011 estimated the wolf population between 60-62 wolves. Based on this estimate, the recent harvest of wolves (5-year average of 10/year) equates

to about a 20% harvest rate, well below maximum sustainable limits. There has not been a black bear estimate calculated in the unit since the mid-1980s. Extrapolating these >20-year-old estimates to the entire unit produces a range of 700-900 black bears. The 5-year average black bear harvest is 62 bears/year (a 7-9% harvest rate), which is less than half of the maximum sustainable limits. Brown bear densities are unknown but the department believes the population is increasing. The annual finite rate of increase of brown bears across the peninsula is 1.8% from 1995-2008. The average reported human-caused mortality of brown bears in the unit averages about 12 bears/year.

Due to widespread declines in the bull:cow ratio throughout the Kenai Peninsula, in March 2011, the Board restricted the legal bag limit of moose from the spike-fork, 50" or 3 brow tine regulation (SHS) to a bull with 50" antlers or 4 or more brow tines. This reduced the harvest in Unit 15A by >75%. IM harvest objectives were not being met before this restriction and will be well below objectives with the restriction. The department predicts that the antler restrictions will get the bull:cow ratio back to objectives in most areas within 2 regulatory years.

With the decline in the bull:cow ratio under the SHS regulation, it is evident that the past level of bull harvest, at least the yearling portion, is not sustainable without a significant increase in survival. However, increasing the moose population above current densities would add to the current nutritional stress in the population. One of the many challenges in implementing an IM plan for this area is the poor condition of the habitat and its impact it has on the nutritional stress of moose. A spring 2011 calf survey estimated 16% of parturient females with twins, pregnancy rate of adult cows in 2006 was 73%, preferred browse species show heavy use, and there are cases of late winter and spring mortality due to malnutrition even in mild winters. Based on these conditions the sustained overall population should not be increased and any increase in moose resulting from aerial wolf control should be allocated to harvest. This IM plan includes maintaining current population densities until habitat improves and it sets biological triggers for suspension of wolf control and implementation of antlerless harvest.

This IM plan contains several components tailored to biological circumstances specific to Unit 15A.

- 1) The plan focuses on wolf control. Bear management actions, beyond liberal hunting seasons, are not included at this time.
- 2) Given the decline in the bull:cow ratio, the department will initially focus research on productivity changes in response to the recent antler restrictions. This research will assist the Department in developing a long-term management strategy post-SHS regulations. This will also provide baseline data for managing the IM program.
- 3) Assessing the effectiveness of the plan will be based on measurable changes over time and by comparing the treatment area to a control area. Though specific areas for comparison will be identified as the plan is implemented, initial considerations are to divide the units into an eastern and western portion, because of land ownership patterns.
- 4) The plan is to maintain current moose densities by increasing human harvest as predation declines.

5) The plan will include working with the Kenai National Wildlife Refuge (KNWR) to develop and implement habitat management plans to improve the quality of the moose range.

Figure 1. Intensive management area for moose in Game Management Unit 15A in the northwest of the Kenai Peninsula, Alaska. Highlighted lighter area shows the Kenai National Wildlife Refuge boundaries.

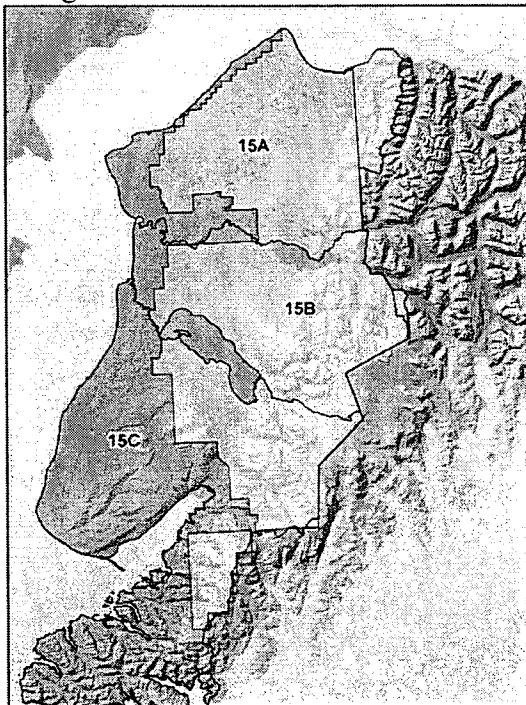


Figure 2. Land ownership in Unit 15A, Kenai Peninsula, Alaska. State land is limited to approximately 15.6 mi² in the southwest corner of the unit.

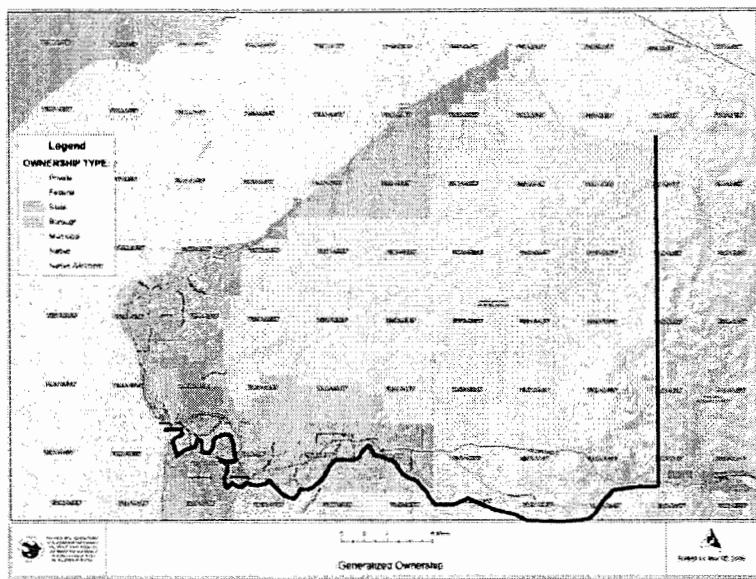


Figure 3. Unit 15A moose population size estimates. Estimates from 1973-1982 were through quadrat sampling; estimates in 1987-1995 were Gassaway surveys; estimates in 2001 and 2008 were GSPE surveys. Sightability correction factors were assumed to be 1.25 in 2001 and 2008. Intensive Management population objectives, created in 2000, are shown.

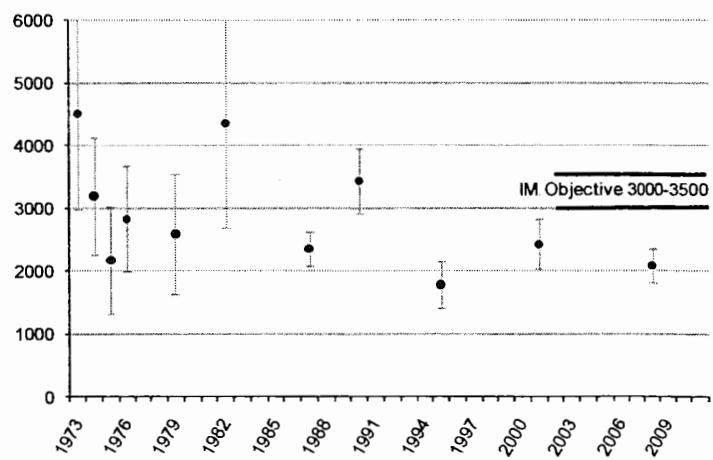
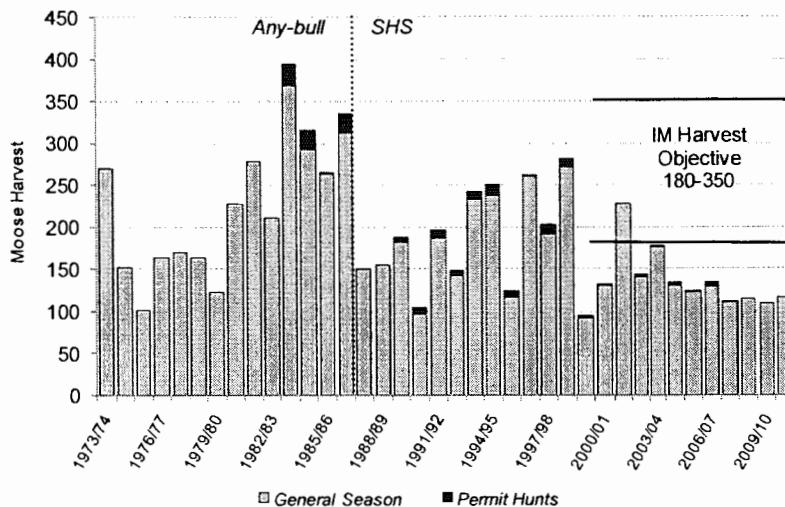


Figure 4. Unit 15A moose harvest from 1973-2010. Intensive Management harvest objectives, created in 2000, are shown. The SHS started in 1987 as is shown with the vertical dotted line.



Adaptive Management Framework

Any section of this framework may be modified as new information comes to light in the study area or the scientific literature. Lack of an anticipated response may require evaluation of additional criteria or a research project to understand which additional factors may be influencing the system and whether they are feasible to manage.

1. Treatments

a. Predation control

Aerial removal of wolves within a portion of Unit 15A will utilize fixed winged aircraft by private pilot/gunner teams. Aerial wolf control permits will be issued by the department to selected qualified pilot/gunner teams. Pending Board approval, permits for aerial removal of wolves will start in March 2012 due to the desires expressed by the Board.. Subsequent wolf removal will occur as early as practical (October) each year in order to maximize calf/yearling survival. The control period will run from October 1- April 30. If the wolf removal by private fixed-winged pilot/gunners proves unsuccessful (e.g., <10 wolves/year) due to the limited workable area and/or lack of participation, wolf removal will be conducted by department staff using helicopters. Given the small amount of area available for wolf removal, effective control activities may require frequent monitoring. Follow-up efforts may be conducted if substantial wolf presence is detected. Wolf control will be conducted annually over the course of the five-year program. Given the limited amount of land available for the program, up to 100% of the wolves on available land will be allowed for removal.

The objective is to remove wolves through trapping, hunting, and wolf control activities. We will maintain a minimum of 15 wolves in the population as judged through population surveys, population census, modeling, harvest, or pilot and trapper interviews.

b. Habitat enhancement

Habitat enhancement is the cornerstone of this IM program. Without significant habitat improvement, the moose population, with or without wolf control, will not reach IM objectives. The KNWR in conjunction with the State Division of Forestry are the agencies that have the authority to conduct prescribed burns or manage the suppression of wildfire. The department will continue to work with the KNWR to help identify methods to reduce risks associated with fire management. Fire breaks around communities is a logical method to reduce risks. The high number of residential areas in the unit (Sterling, Soldotna, Kenai, Nikiski), oil and gas development facilities on the KNWR, and the issue of smoke affecting Anchorage, especially Ted Stevens International Airport creates challenges and constraints for using fire management.

Aside from fire management, there are currently no plans for mechanical treatment of habitat. Over two decades ago, the department and the KNWR mechanically treated habitat at a small scale with positive results. Past experience has shown that mechanical habitat treatment is relatively expensive and this point in time there is no funding available to pursue this approach at a broad scale.

c. Prey harvest

The current density of moose in Unit 15A is below IM objectives and already the moose population shows signs of nutritional stress. Also, the recent decline in the bull:cow ratio indicates that the past harvest of bulls is not sustainable. The antler restrictions adopted by the Board for 2011-2012 may return the bull:cow ratio back to management objectives. However, once the bull:cow ratio objective is achieved, we are not likely to return to the same level of bull harvest that occurred previously while maintaining minimum bull:cow ratios without a significant increase in recruitment. While wolf control has the potential to increase this recruitment of bulls, if successful, it will also increase recruitment of cows. As such, it is expected that cow harvest will be necessary to maintain populations at levels appropriate for the habitat while maintaining bull:cow ratios within objective. Antlerless harvests will likely focus on highway corridors to reduce roadkilled moose. The details and extent of the antlerless hunts will be determined from radio collaring work quantifying, among other things, cow movements, and will also depend on the initial success of the wolf control efforts.

2. Anticipated responses to treatments

Assuming successful wolf reduction, we would anticipate some increased survival of moose, especially calf and yearlings, ultimately resulting in an increase in the overall moose population. However, predicting the magnitude of the removal of wolves and the response of the moose is difficult. We expect some improvement in the current low bull:cow ratio in response to wolf control.

a. Predator abundance

A November 2011 survey counted 60-62 wolves in Unit 15A. The wolf control objectives are to remove wolves from the population through trapping, hunting, and aerial wolf control activities and retain at least 15 wolves in the population. Wolf surveys will be conducted to determine the current wolf population size and the level of take that will ensure the minimum population objective is met. The vulnerability of wolves to aerial control in the treatment area may be limited by the large home range of wolf packs and abundant forested cover to hide animals. Only a portion of wolves in the unit are expected to use the treatment area.

b. Predation rate

We have no data on the current rates of wolf predation on moose in Unit 15A or total predation including black bears and brown bears. Recent calf numbers were at expected levels for areas with multiple predator species. November 2011 composition surveys showed 29 calves: 100 cows. However, calf numbers in some areas in recent years have been low. A contributing factor to low calf numbers is low productivity [i.e., low pregnancy rates (73% of cows between ages 3-15) and low twinning rates (16%)].

Research will initially focus on assessing the productivity of Unit 15A moose in response to expected recovery of the bull:cow ratio. Efforts will specifically assess calf (>6 month old) and yearling survival rates through radio collaring efforts. This level of monitoring is needed to best evaluate the efficacy of wolf control.

c. Prey abundance

Increases in the moose population from wolf control will be available for human harvest. The goal of the program is to maintain the current level of the moose population. If feasible, decreases in moose numbers via antlerless harvests around highways may help reduce roadkills. It will be challenging to evaluate moose population growth and determine the level of antlerless harvest needed to maintain population stability. Traditional composition counts are used to determine ratios not population abundance. Additionally, due to survey variability and an unknown level of movement across the treatment boundaries, data from GSPE surveys may not be able to detect differences in abundance across treatment areas.

d. Prey recruitment

Removal of wolves, above typical harvest levels from trapping, is expected to improve survival of calf (>6 months old) and yearling moose. However, it is difficult to model the magnitude of the potential increase in recruitment from wolf control given that the current low productivity is driven by poor habitat and to an unknown degree by low bull:cow ratios. Increases in moose density without large scale habitat improvements will likely have negative impacts on moose productivity which is already low, and is not likely to greatly improve bull:cow ratios. Calf:cow ratios provide a crude measure of recruitment but have limitations, especially considering the confounding factors of poor

habitat and low bull:cow ratios. Also, given the likely movement across treatment borders, we may not be able to detect differences in calf:cow or yearling bull:cow ratios across treatments.

e. Prey productivity or nutritional condition

If the moose population increases in response to wolf control, we predict further declines in productivity. To estimate nutritional condition of moose, we will measure rump fat of adult cows in the spring and determine pregnancy and twinning rates from collared cows. Additional measures such as short yearling weights may also be taken depending on research demands associated with the pending IM project in Unit 15C. Given that the twinning rate estimated in the spring of 2011 was observed at 16%, close monitoring of nutritional condition will be required to quantify the level of nutritional stress.

f. Harvest

Wolf control in Unit 15A will result in the reallocation of moose mortality from wolves to harvest.. To do this without increasing moose densities, the department will likely propose antlerless hunts. A decreasing trend in twinning rate or other measures of nutritional condition would indicate potential initiation of antlerless hunts as would increases in the density of moose from population surveys.

g. Use of non-treatment comparisons

In an effort to evaluate the effectiveness of the IM plan, we will try to identify a control area that will serve as a comparison to the wolf removal area in western Unit 15A. Our initial plan is to divide the unit into an eastern and western portion. The western portion ($\sim 525 \text{ mi}^2$) will be the treatment area where wolf control efforts will occur on the state and Native lands ($< 83 \text{ mi}^2$). The eastern portion ($\sim 650 \text{ mi}^2$) is KNWR land and will not have aerial wolf reduction and will act as an experimental control.

From collaring we will gain knowledge of moose movements, especially in the western portion of the unit, as the IM program proceeds. Results of this collaring effort may cause a readjustment of the study design depending on what degree of movements we find. If we find that movements of moose and wolves across treatment borders are significant, it may be necessary to adjust the control area or evaluate other areas that might be able to serve as a control.

3. Evaluation criteria and study design to document treatment response

Adaptive management with the intent to increase harvestable surplus of prey requires evaluating the biological response and achievable harvest after treatments are implemented. Evaluation will be reported to the Board each year with an interim update of selected criteria each year.

a. Predator abundance and potential for recovery

The size of the wolf population will be determined through aerial surveys. An early winter survey (November) is preferred but snow conditions throughout the unit are typically inadequate at that time of year. A late winter (March) survey is more probable. Depending on weather and other factors, we plan to conduct a wolf survey each winter during active IM activities. We may also capture and radio collar several wolves from identified packs in and out of our treatment areas as available to learn more about their movements.

b. Habitat

No direct forage assessment studies are proposed for this program. However, nutritional indices of moose will be monitored. If declines in twinning rates or other nutritional indices are detected, antlerless harvests will be increased.

c. Prey abundance, herd composition, and nutritional condition

The response of moose to wolf control will be difficult to measure given the limited amount of area open to control activities. We will measure calf numbers through composition surveys. Potential impact of wolf control will also be assessed by judging the number of wolves taken and how this may relate to increased moose survival. A GSPE survey was conducted in 2008 in Unit 15A. After 2-5 years of wolf control efforts, an additional GSPE survey will be conducted. Monitoring of cow condition (rump fat, pregnancy rate, age at first reproduction, productivity, and twinning rate) or short yearling weights will be conducted to determine the nutritional condition of the population.

d. Prey harvest

Moose harvest, success rates, and hunter effort will be monitored through standard harvest reporting methods.

4. Decision framework to implement or suspend a treatment

The IM Plan proposes a decision framework to implement and suspend predation control based on nutritional indices and estimates of recruitment. A decision framework can account for the risks associated with taking actions based on survey estimates and their inherent uncertainty. The relationship between management actions and risks of making an incorrect decision based on precision of biological survey data should inform decisions to begin or end management treatments. Public tolerance for risk of making incorrect decisions (i.e., recognition of consequences) should be assessed during the Feasibility Assessment, particularly for on controversial topics such as implementing or suspending predation control, conducting prescribed fire, or failing to implement an adequate harvest strategy to slow, stop, or reverse ungulate population growth that threatens to damage habitat by overuse. Where uncertainty in sampling estimates can be adequately defined, statistical tests can inform the level of risk in making a decision to start or suspend IM actions. In that instance, decision frameworks can be modified (by changing the management objectives and

levels of tolerance) to reflect public opinion regarding the balancing of risks. Risk assessment is addressed in more detail in *Guidelines for IM*.

Thresholds for progress and success are set by the public and Board and provide the means to evaluate effectiveness of treatments. Evaluation criteria are compared to pre-determined threshold values to guide decisions on whether a practice should begin or is no longer needed to achieve a desired outcome. This results in operational efficiency (cost and labor) as well as the minimum required application of controversial practices.

a. Predation control

i. Prey population abundance

The typical thresholds to implement an IM program (depleted population or declining productivity) are clearly evident in Unit 15A moose. This population decline and reduced productivity is certainly affected by poor habitat. The initial goal of the plan is to manage for greater human harvest by reducing predation, but not increasing the overall population. Population growth can be included in the goal when a sustainable improvement in habitat becomes feasible.

We propose the following criterion for suspending the wolf control program. If any of these conditions are met wolf control program will be suspended until corrective actions can be made.

- 1) If calf:cow ratios fail to improve after 3 years of the program. This could indicate that there is no significant improvement in calf survival as a result of the wolf control efforts, or harvest strategies need to be adjusted.
- 2) When one or more measure of nutritional stress (e.g., body condition, pregnancy/parturition rates, age at first reproduction, short yearling weights, twinning rates) shows a decline in 3 consecutive years.
- 3) If the Unit 15A wolf population falls below 15 wolves at any time during the program.

The risks of not successfully managing antlerless hunts are significant. If moose densities grow and result in increase nutritional stress, declines in moose productivity may offset the effectiveness of the wolf reduction. Also, nutritionally stressed moose are more vulnerable to severe winters, which is what caused the crash of the high density moose population in the early 1970s. Conversely, mismanaging antlerless hunts and allowing for harvests that are in excess of what would allow for population stability would result in a decline in densities.

ii. Harvest catch per unit effort

Improved CPUE values would be a positive outcome and will be assessed. However, we do not foresee using changes in CPUE values as a metric to

determine suspension of the wolf control actions because survey and harvest data will be a more direct measure of success.

b. Habitat enhancement

There has not been a significant fire in Unit 15A for over 40 years. Moose will stay at low densities, with or without successful wolf reductions, until significant habitat improvements occur (i.e., >50,000 acres). Initiation of prescribed burns and wildfire management within Federal lands (79% of Unit 15A) are governed by the KNWR in collaboration with the State Division of Forestry. The department has and will continue to work with both entities in planning for and engaging in actions that will lower the risk of conducting prescribed burns and managing natural wildfire. The idea of creating a fuel break along the border of the KNWR is an example of a tangible way to reduce risks associated with fire management. KNWR lists proposed prescribed fires in their fire management plan. The department will continue to work with the KNWR and State Division of Forestry in any way possible to encourage well designed and responsible prescribed fires. Habitat enhancement through means other than fire is encouraged and the department will continue to work with the KNWR on projects that will continue to enhance habitat, even those at relatively small scales. We will use condition indices such as productivity, pregnancy rates, and twinning rates to assess the state of the moose habitat.

c. Prey harvest strategy

i. Population abundance

During the past decade, bulls were harvested in Unit 15A at a rate between 5-10% of the total population (based on 2008 estimate of 2,088 moose). In 2010, this equated to a harvest of 36% of the estimated bull population which is well beyond sustainable limits (Young and Boertje 2008). This overharvest of bulls has likely driven the recent decline in the bull:cow ratio. When the bull:cow ratio increases to objective levels (>20 bulls:100 cows) a bull harvest of 5% of the total population size would likely be sustainable without wolf control. Given present densities, this would equate to a harvest of <100 bulls. At the 2013 Board meeting, the department will submit a detailed proposal for antlerless harvests. The level of antlerless harvests will depend on the success of wolf removal and the responding increase in moose survival.

ii. Nutritional index

Initially we will measure pregnancy rates, body condition, and twinning rates of radio collared cows. Additional measures, such as browse surveys, short yearling weights, and proportion of early reproduction in yearling or 2 year old cows may also be measured.

5. Public involvement

Operational Plan for Intensive Management of Moose in Unit 15A

a. Continued outreach by ADF&G

For this IM plan to be successful harvest reporting must be done timely and accurately. The department will work the public to gain their support in providing harvest data. Department staff will present program updates periodically to local ACs and through other public forums with Federal Regional Advisory Councils, Federal Subsistence Board, Kenai National Wildlife Refuge, local tribal councils, and the general public.

b. Continued engagement to confirm criteria chosen for evaluating success

Total harvest, success rate, and the number of days hunted for successful hunts will all be assessed. Research will be conducted to assess productivity and some measure of recruitment (either survival rates or composition count analyses). Compositions surveys will be conducted in the fall and/or spring to assess calf numbers. For targeted antlerless hunts along the highway corridors, a reduction in road-kills would be a measure of success.

c. Participation in prey and predator harvest or predator control

Given that the success of aerial wolf control is uncertain, local hunters and trappers will be encouraged to continue harvest of wolves to maximize the effectiveness of the wolf control effort. Public harvest of wolves and bears in the established seasons will continue to be encouraged. Harvest incentive programs initiated and funded by Alaska Native Corporations are also encouraged. Incentive programs that extend to non-local wolf and bear hunters should be considered by tribal organizations (e.g. land access, supplemental funding for permitted aerial wolf hunters, etc.).

Public support and active participation regarding antlerless harvests will be essential to the success of this program.

d. Monitoring and mitigation of hunting conflict

Communities around the main road system include Sterling, Soldotna, Kenai, and Nikiski. Most of the land along the highway is private or Native land. Any level of harvest of antlerless moose to reduce road-kills and keep moose densities at or below current densities will potentially result in conflicts between hunters and landowners. The department will help facilitate hunting success and reduce conflicts by private and native landowners to help ensure the success of the program.

6. Other considerations

Aerial wolf control program will focus on limited land near the Kenai Airport and the communities of Kenai, Soldotna, Nikiski, and Sterling. Given the number of human residences along the western side of the unit where the wolf control activities will take place, as well as a very high level of recreational snowmachine activity throughout the unit, this will likely be a fairly visible program. The department does not believe these control activities will create a threat to public safety. Nonetheless, the department

intends to work very closely with those holding control permits, as well as the remaining public to ensure that safety is the primary concern in all control activities.

If antlerless hunts are approved, it is likely that there will be changes proposed to the Federal Subsistence regulations. If Federal antlerless seasons are enacted, the IM program may have to adjust our strategy to maintain the goals of the program.

LITERATURE CITED

Alaska Department of Fish and Game. 2011. Guidelines for intensive management of big game in Alaska

Alaska Department of Fish and Game. 2011. Feasibility assessment for maintaining or increasing sustainable harvest of moose in GMU 15A.

Peterson, R. O., J. D. Woolington, and T. N. Bailey. 1984. Wolves of the Kenai Peninsula, Alaska Wildlife Monographs 88.

Young, D. D., and R. D. Boertje. 2008. Recovery of low bull:cow ratios of moose in Interior Alaska. *Alces* 44:65-71.

Appendix A. Summary of supporting information

Geographic area and land status	
Management area(s)	Unit 15A (1314 mi^2) Prey abundance assessment (1314 mi^2), prey harvest assessment (1314 mi^2), predator abundance assessment (1314 mi^2), predator control ($<83 \text{ mi}^2$) – see Figure 1
Land status	For Unit 15A (1314 mi^2); land ownership is roughly as follows (see Figure 2): Potential land available for wolf control: 32 mi^2 (2%) Kenai Native Association, Inc. 16 mi^2 (1%) Salamantof Native Association, Inc. 15 mi^2 (1%) State Mental Health 13 mi^2 (<1%) Kenai Borough 0.8 mi^2 (<1%) CIRI 0.3 mi^2 (<1%) State DNR Total = 83 mi^2 (6% of Unit 15A) Unavailable land for wolf control: 197 mi^2 (15%) private and other small state or Native land that are landlocked within private land 1038 mi^2 (79%) USFWS-Kenai National Wildlife Refuge (KNWR)
Biological and management situation	

Prey population	15A - IM objectives: 3,000-3,500 moose 15A - Estimate in 2008: 2,088 moose (95% CI: ± 264 , 1.6 moose/mi ²)
Prey harvest (human use)	15A - IM objectives: 180-350 moose Reported in 2010 (SY rate): 117 moose (6% harvest rate of moose based on 2008 population estimate). Amount Necessary for Subsistence: there is no ANS.
Feasibility of access for harvest	Exact measures of trails or navigable waters are unknown but access is considered good. There are >100 miles roads, significant river miles, access is restricted by KNWR, corporation lands are closed to non-corporation members without a purchased land access permit, unleaded gasoline and 100 octane low lead aviation fuel is marginally higher than Anchorage prices.
Nutritional condition	Habitat is very limiting based on a calf-twinning rate of 16% calculated in 2011. Also, pregnancy rates of adult cows captured in 2006 was 73%.
Habitat status and enhancement potential	There has not been a significant fire in the unit for over 40 years. Enhancement potential is determined by fire management actions of the land managers (KNWR) and State Division of Forestry. Given the proximity to major residential areas and smoke inhibiting the Anchorage airport, fire management has significant risks.
Predator(s) abundance	A November 2011 wolf survey estimated a population between 60-62 wolves. Current black bear densities are unknown but likely range between 700-900 bears. Brown bear densities are unknown.
Predator(s) harvest	Within Unit 15A (1314 mi ²) in RY 2010; wolves = 15 (SY= 20-30) black bears = 78 (SY= likely between 130-180) brown bears = 7 (SY= unknown)
Evidence of predation effects	During annual SI surveys in November 2010, calf:cow ratios were 23 calves:100 cows. At predicted calving rates of 73%, and assuming 16% twinning rate, spring 2010 calf ratios may have yielded 84 calves:100 cows. Therefore, 84 calves – 23 calves = ~61 calves:100 cows were lost from approximately June to November. The causes of mortality remain unknown but much is likely due to predation. However, with a low bull:cow ratio in some areas, it is uncertain what the initial calving rate is. Also, the clear nutritional stress shown by low pregnancy and twinning rates may result in calves in poor condition with low survival. Therefore, we cannot ascertain the true impact of predation without knowing the impact low bull numbers may be having on productivity and the impact of nutritional stress on

	survival.
Feasibility of predation control	The moose population in Unit 15A was below IM population objectives well before the objective was established and has never met objectives to date. The recent hunting restrictions initiated by the Board will greatly reduce harvest through 2012 and drop the harvest even further below IM objectives. Given the limited land available for predator control, it is unlikely that aerial wolf control will be effective in significantly reducing the wolf population. Furthermore, given the current nutritional stress of the moose population, any increase in survival caused by wolf removal could add to the nutritional stress of the moose population unless compensated in the human harvest.
Other mortality	On average over the past decade, 85 moose/year die due to vehicle collisions in Unit 15A. Severe winters occur periodically. Currently, significant numbers of moose die due to malnutrition even in mild winters.

**Draft Operational Plan for Intensive Management of
Moose in Game Management Unit 15C
During Regulatory Years 2012-2017**

**Prepared by the Division of Wildlife Conservation
January 2012**



This document provides information about how the Department of Fish and Game (Department) plans to implement the Intensive Management (IM) plan if passed by the Board of Game (Board). The elements of this plan are based on the enabling regulation (5 AAC 92.125), but as an internal Department plan it is subject to change without Board action. This plan, and subsequent modifications, will be the basis of annual reports to the Board as required by regulation. The Department welcomes comments from the public about proposed actions and methodologies and the Department may modify the plan through time based on additional input.

Summary of supporting information

This operational plan has been prepared by the Department to provide supporting information on the Intensive Management (IM) plan for moose in Unit 15C. The IM Plan is found in Title 5, Alaska Administrative Code, Section 92, Part 125 (abbreviated as 5 AAC 92.125). Based on the biological and management information for this area (Appendix A), this operational plan describes rationale for evidence of limiting factors; choice of indices for evaluating treatment response; and decision frameworks for predation control, habitat enhancement, and prey harvest strategies. *Agency Protocol For Intensive Management Of Big Game In Alaska* (2011) describes the administrative procedures and the factors and strategies in adaptive management of predator-prey systems to produce and sustain elevated harvests of caribou, deer, or moose in selected areas of Alaska. The IM Plan for moose in Unit 15C has been developed based on the request of the Board. The IM plan and this operational plan include information and recommendations from a Feasibility Assessment prepared by the Department and the recommendations by the Board following public comment at the March 2011 Region II meeting.

Background

Three moose population surveys have been conducted in Unit 15C beginning with a 1992 Gassaway estimate of 2,079 moose, followed by a 2002 GSPE estimate of 3,965 moose, and most recently a 2010 GSPE estimate of 2919 moose (Figure 3). The current estimate equates to a density of 2.5 moose/mi². There is concern that the 2002 survey had inadequate sampling and was likely biased high but the magnitude of the bias is unknown. These data suggest that the population increased between 1992 and 2002 and declined from 2002 to 2010, though the confidence intervals allow for the possibility that the population has changed little over this time period.

The IM objectives for Unit 15C were established in 2000 with a population objective of 2500–3500 moose and a harvest objective of 200–350. The moose population in Unit 15C has been within IM objectives since the objectives were established, as has the harvest. For the 2011 season, the total harvest will be well below IM harvest objectives because of the changes in antler restrictions adopted by the Board to address low bull:cow ratios. Previous to the 2011 season the moose harvest and hunter success rates, and the average number of days spent on a successful hunt have not changed significantly in the past 20 years. The Department has little data available to assess population size or trends in predator numbers in Unit 15C except that the annual rate of increase of brown bears across the peninsula has shown 1.8% growth from 1995–2008. In November 2011 a reconnaissance survey in the area north of Kachemak Bay (1171 mi²) resulted in an estimate of 44–52 wolves. The harvest of wolves and black bears within the northern portion of Unit 15C is likely well below maximum sustainable limits.

Based on a spring 2011 calf survey, showing 30% of parturient females with twins, habitat in Unit 15C appears adequate to sustain present moose densities. In the 1970s, when moose population densities were likely higher than present densities due to a 50-year absence of wolves that ended in the 1960s, the twinning rate in Unit 15C was 11%. This low twinning rate was indicative of nutritional stress and, along with probable reduced productivity, increased the vulnerability of moose to severe winters. Subsequent severe winters in the early 1970s caused a crash in the moose population followed by years of low harvest. There has been 136 mi² of fires in Unit 15C within the past decade that may result in improved moose habitat. However, habitat in Unit 15C differs from Units 15A and 15B in that aspen is largely absent and blue joint grass is ubiquitous. Therefore, fire will have limited benefits on moose habitat in Unit 15C compared to the habitat response predicted for Units 15A and 15B, where aspen is abundant and the prevalence of blue-joint grass is lower. We do not expect to see a large increase in moose numbers as a result of these recent fires.

Due to a recent decline in the bull:cow ratio (down to 9 bulls:100 cows) which is well below management objectives of 20 bulls:100 cows, in March 2011 the Board eliminated non-resident hunting and restricted the legal bag limit of moose from the spike-fork, 50" or 3 brow tine regulation (SHS) to a bull with 50" antlers or 4 or more brow tines. This will likely reduce the harvest by >75% in Unit 15C and result in a harvest below IM objectives. It is likely this regulation change will allow the bull:cow ratio to improve within a few years. It is expected moose harvest will increase again after antler restrictions are again liberalized.

With the decline in the bull:cow ratio (under the SHS regulation), the past level of bull harvest, at least the yearling portion, is not sustainable without a significant increase in survival. According to the last census, the population size is still within IM objectives and any increase in population densities may result in declines in productivity due to nutritional stress. To meet a higher level of the IM harvest objectives with a lower sustainable harvest of bulls and to ensure the population does not grow above objective densities, alternative harvest strategies, such as antlerless hunts, will likely be proposed at some point.

This proposed IM plan contains several components tailored to the specific biological issues inherent in Unit 15C.

- 1) Initially the plan will focus on wolf control measures; bear management actions, beyond liberal hunting seasons, are not included in this plan at this time.
- 2) Given the decline in the bull:cow ratio the department will initially focus research on productivity changes in response to the recent antler restrictions. This research will assist the department in developing a long-term management strategy post-SHS regulations. This will also provide baseline data for managing the IM program.
- 3) Treatment areas to assess predator control will divide the unit into 2 parts, a northern and southern portion, where wolf control will occur only in the southern portion.
- 4) The IM plan is to maintain current moose densities but reallocate the take of moose from wolves to harvest, which will likely require antlerless harvests to successfully meet IM harvest objectives.

Wolf control and monitoring efforts will not take place across the entire area in Unit 15C (2441 mi²). The area south of Kachemak Bay is mountainous, holds few moose (an average harvest of 1-4 moose/year), and is heavily timbered. Our focus will be on the part of the unit north of Kachemak Bay including the Fox River Flats (1171 mi²). This is the same area boundaries used for the GSPE surveys. For this plan, any reference to Unit 15C addresses this 1171 mi² subsection of the unit (Figure 1).

Figure 1. Intensive management (IM) area for moose in Game Management Unit 15C. Highlighted area shows the Kenai National Wildlife Refuge (KNWR) boundaries. Hatched area in Unit 15C shows proposed IM boundaries (1171 mi²) including about 300 mi² of KNWR south of Tustumena Lake and land north of the Fox River Flats to Glacier Creek.

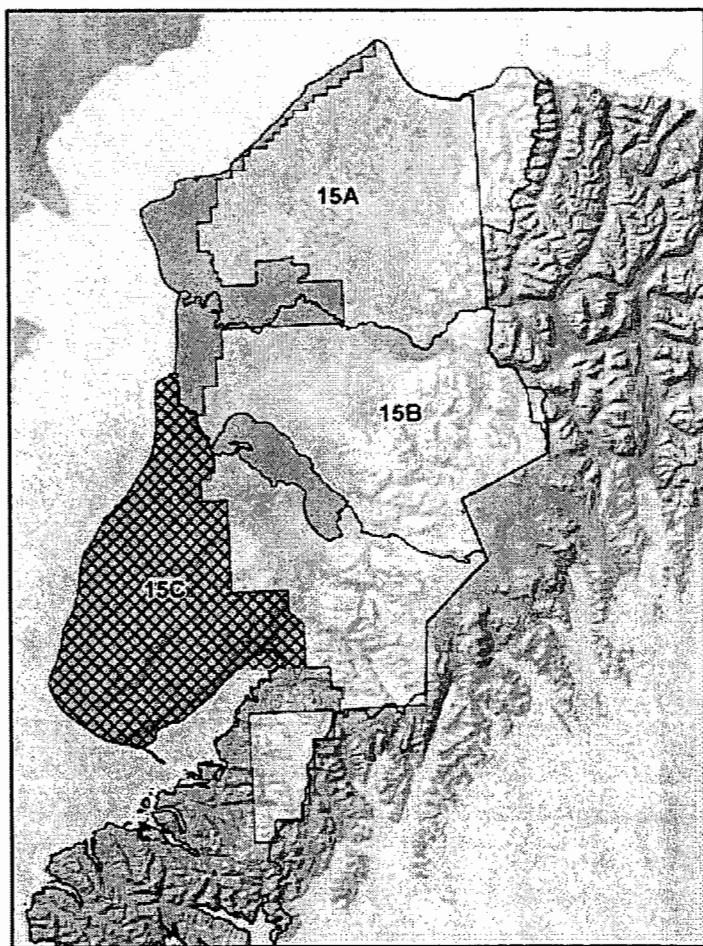


Figure 2. Land ownership in the northern portion of Unit 15C, Kenai Peninsula, Alaska.

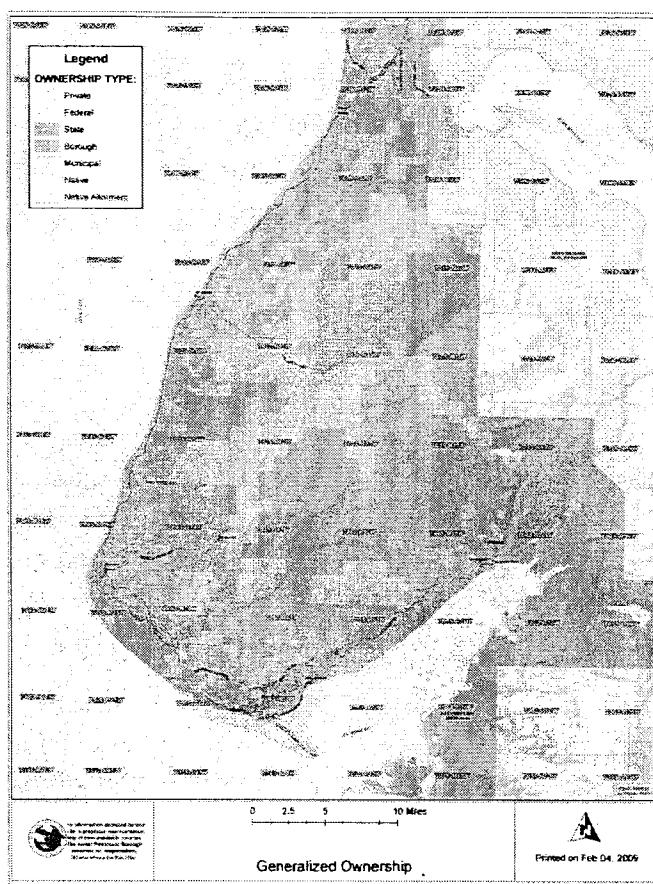


Figure 3. Unit 15C moose population size estimates. Sightability correction factors were estimated at 1.49 in the 1992 Gassaway survey and assumed to be 1.33 in 2002 and 2010 GSPE surveys. Intensive Management population objectives, created in 2000, are shown.

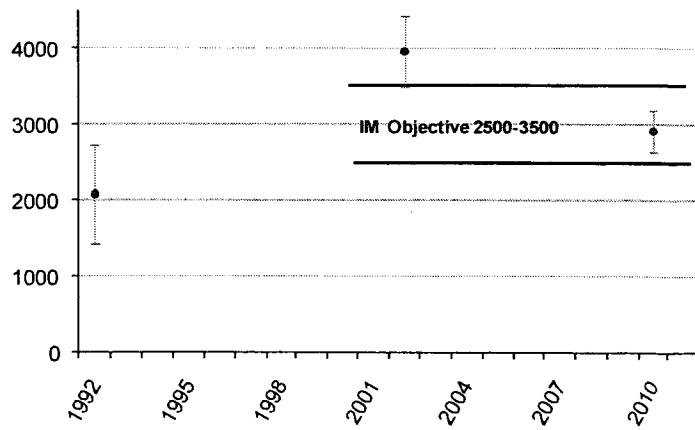
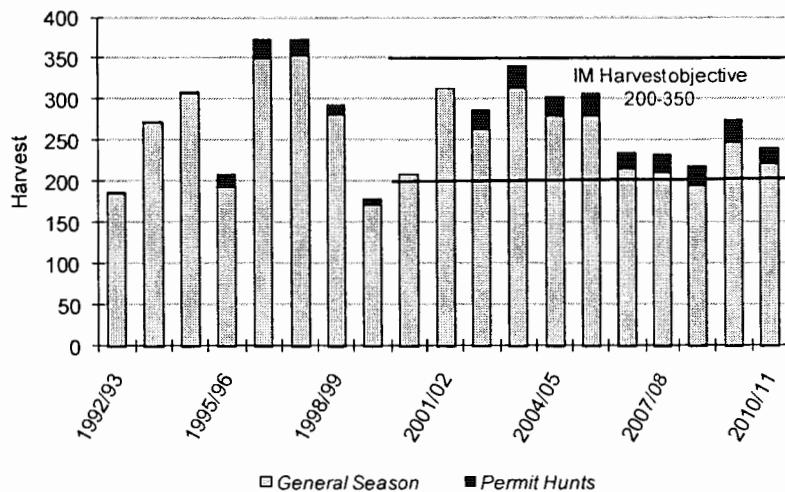


Figure 4. Unit 15C moose harvest from 1992-2010. Intensive Management harvest objectives, created in 2000, are shown.



Adaptive Management Framework

Any section of this framework may be modified as new information comes to light in the study area or the scientific literature. Lack of an anticipated response may require evaluation of additional criteria or a research project to understand which additional factors may be influencing the system and whether they are feasible to manage.

1. Treatments

a. Predation control

Aerial removal of wolves within a portion of Unit 15C will utilize fixed winged aircraft by private pilot/gunner teams. Aerial wolf control permits will be issued by the Department to selected qualified pilot/gunner teams. Pending Board approval, permits for aerial removal of wolves will start in March 2012. Subsequent wolf removal will occur as early as practical in early winter (October) in order to maximize calf/yearling survival. The control period will run from October 1-April 30. If the wolf removal by private fixed-winged pilot/gunners, trappers, and hunters proves unsuccessful (e.g., <20 wolves/year taken) due to the limited workable area and/or lack of participation, wolf removal may be conducted by the Department staff using helicopters. Wolf control will be conducted annually over the course of the five-year program. The objective number of wolves to be removed depends on future assessments of the wolf population size and distribution. The proportion of wolves to be removed, depending on the treatment limitations outlined below, will be up to 100% of the wolves in the treatment area.

The objective is to remove wolves through trapping, hunting, and wolf control activities. We will maintain a minimum of 15 wolves in the population as judged from population surveys, population census, modeling, harvest, or pilot and trapper interviews.

Present level of black bear and brown bear predation on moose calves and adults is unknown but may offset increases in moose survival caused by wolf control. The Department will initiate research to address these questions starting in March 2012.

b. Habitat enhancement

There are no habitat enhancement projects proposed in this plan. As detailed in the Background section above, Unit 15C has had significant timber harvest and fires in the past decade but the response of habitat to these disturbances is not likely to greatly improve moose habitat compared to potential habitat response to habitat disturbance in the northwestern part of the Kenai Peninsula.

c. Prey harvest

To maintain the current population density within IM objectives and to avoid declines in productivity if the population grows beyond IM objectives, there will have to be a reallocation of moose from predation to harvest, including some level of antlerless harvest. Antlerless harvest will accomplish two goals: 1) to keep the moose population from exceeding IM objective levels and thereby maintaining a productive population without excessive nutritional stress; 2) to add additional harvest opportunities to what is likely to be a more restrictive bull harvest in 2012. Antlerless harvests will likely occur along the highway corridor as a secondary objective to reduce road-kills. This antlerless harvest will be proposed by the Department to the Board during the spring 2013 meeting. The details and extent of the antlerless hunts will be determined by what the Department learns from radio collaring work quantifying, among other things, cow movements, and will also depend on the initial success of the wolf control efforts.

2. Anticipated responses to treatments

Assuming successful wolf reduction, we anticipate increased survival of moose, especially calf and yearlings, ultimately resulting in an increase in the overall moose population. However, predicting the magnitude of the removal of wolves and the response of the moose is difficult. We expect that there will be considerable improvement to the bull:cow ratio in response to the recent Board action and there may be long-term benefits to the bull:cow ratio through wolf control.

Regarding the antlerless hunts along the highway corridor, if we can successfully determine the growth in the cow segment of the population in response to wolf control, we would theoretically be able to determine the correct level of antlerless harvest. Antlerless harvests along the highway corridor may reduce the number of road-kills.

a. Predator abundance

A November 2011 survey resulted in a count of 44-52 wolves in the northern portion of 15C. The wolf control objectives are to remove wolves from the population through trapping, hunting, and aerial wolf control activities and retain at least 15 wolves in the population. Wolf surveys will be conducted to determine the current wolf population size and the level of take that will ensure the minimum population objective is met. Resilience of wolves and recovery after control efforts will vary with changes in average litter size, pack size, and natural mortality rate (Peterson et al. 1984). Monitoring of the wolf population after suspension of the program to document recovery or possible reinstatement of the control program will be necessary.

b. Predation rate

We have no data on the current rates of predation on moose by wolves in Unit 15C or total predation including black bears and brown bears. However, the recent calf numbers show levels associated with predation rates that would maintain population stability (17% calves in the population in March 2010, 19 calves: 100 cows in November 2010). However, it is unknown to what degree the low bull:cow ratios may be contributing to declines in productivity.

The primary research focus will be on assessing the productivity of Unit 15C moose in response to the fall and expectant recovery of the bull:cow ratio. Research efforts specifically conducted to directly assess calf (>6 month old) and yearling survival rates through radio collaring efforts could be conducted in conjunction with the productivity study. This level of monitoring would be needed to best evaluate the efficacy of wolf control. Using composition surveys will not directly measure survival rates but may show trends in recruitment and may help evaluate the impact of wolf control.

c. Prey abundance

Any increases in the moose population due to wolf control will be reallocated to harvest. The goal of the program is to not increase the moose population. If feasible, decreases in moose numbers via antlerless harvests around highways may help reduce road-kills. It will be challenging to evaluate moose population growth and determine the level of antlerless harvest needed to maintain population stability. Traditional composition counts are used to determine ratios not population abundance. Additionally, due to survey variability and an unknown level of movement across the treatment boundaries, data from GSPE surveys may not be able to detect differences in abundance between the treatment areas.

d. Prey recruitment

Successful removal of wolves above past harvest levels from trapping efforts is expected to improve survival of calf (> 6 months old) and yearling moose. However, it is difficult to model the magnitude of the potential increase in recruitment from wolf control given the undetermined influence low bull:cow ratios on productivity. Wolf control is not likely to greatly improve bull:cow ratios. Calf:cow ratios provide a measure of recruitment but have limitations, especially considering the confounding factor of low bull:cow ratios.

Also, given the likely movement across treatment borders, we may not be able to detect differences in calf:cow or yearling bull:cow ratios across treatments.

e. Prey productivity or nutritional condition

If the moose population increases above IM objective levels in response to wolf control, we expect that declines in productivity may result. To estimate nutritional condition of moose, we will measure rump fat of adult cows in the spring and determine pregnancy and twinning rates from collared cows. Additional measures such as short yearling weights may also be taken depending on these and other research demands.

Given that the twinning rate estimated in the spring of 2011 was only 30%, close monitoring of nutritional condition will be required to quantify the level of nutritional stress.

f. Harvest

Successful wolf control in Unit 15C will result in the reallocation of moose mortality from wolves to harvest. This reallocation may include antlerless harvest. The management challenge will be to accurately determine the necessary hunting effort on antlerless moose to ensure population stability. This will require significant research and monitoring efforts.

g. Use of non-treatment comparisons

One method of evaluating the effects of predator control programs is to compare various biological parameters in the IM area to other areas not receiving the predator control. The department will consider using areas outside of Unit 15C as potential controls, but given the proximity of the Kenai Refuge, and the fact that predator control is not currently allowed within the refuge, the refuge may provide a reasonable area for comparison. Selection of non-treatment control area, if located on the peninsula, will be made after more information on wolf and moose movements are better understood through planned research studies.

3. Evaluation criteria and study design to document treatment response

Adaptive management with the intent to increase harvestable surplus of prey requires evaluating the biological response and achievable harvest after treatments are implemented. Evaluation will be reported to the Board each year with an interim update of selected criteria each year.

a. Predator abundance and potential for recovery

The size of the wolf population will be determined through aerial surveys. An early winter survey (November) would be preferred but snow conditions throughout the unit are typically inadequate at this time of year. A late winter (March) survey is more probable. Our management objectives for how many wolves to remove and how many to

retain may change based on wolf survey results that will most likely occur after the initiation of aerial wolf control. We may attempt to capture and radio collar several wolves from identified packs in and out of our treatment areas as available to learn more about their movements.

Depending on the initial success of fixed-winged control efforts, having wolves radio collared in a particular pack can expedite eliminating the pack when the pack leaves protected land and moves onto land available for aerial take. Radio collaring wolves outside the refuge could provide information on pack size, dynamics, distribution, and movements. A rigorous monitoring effort on wolves in Unit 15C will help determine if there is a spatial distinction between our treatment and non-treatment areas. Given that wolf packs on the northern Kenai Peninsula in the 1970s ranged between 70-600 mi² (Peterson et al. 1984), determining the level of wolf movements across the treatment borders may cause us to change or abandon the study design.

We need to learn about wolf movements across our treatment areas to better construct biologically justified treatment areas and wolf management objectives. We will develop specific wolf management objectives after wolf surveys are completed. However, until these data become available, the objective of the program will be to remove all wolves from the treatment portion of the unit. We will adapt our study design as we learn more about moose and wolf movements.

Once the wolf control activities are suspended, wolf surveys will be conducted to monitor the response and subsequent effects on the moose population.

b. Habitat

No forage assessment studies are proposed for this program at this time. However, nutritional indices of moose will be monitored. If declines in twinning rates or other nutritional indices are detected, antlerless harvests will be increased.

c. Prey abundance, herd composition, and nutritional condition

The most pressing management issue facing moose in Unit 15C is the impact of the low bull:cow ratio and the recent failure of the SHS. Our primary research activity to address this issue is to quantify productivity, body condition, and parturition dates. Through these efforts we will be able to produce an indirect measure of calf survival by monitoring collared cows. We will also measure calf numbers through composition surveys, and these may provide the best index for how wolf control affects calf numbers. Potential impact of wolf control will also be assessed by judging the number of wolves taken and how this may relate to increased moose survival. A GSPE survey was conducted in 2010 in Unit 15C. After 2-5 years of wolf control efforts, an additional GSPE survey will be conducted. Monitoring of cow condition (rump fat, pregnancy rate, age at first reproduction, productivity, and twinning rate) or short yearling weights will be conducted as funding allows to determine the nutritional condition of the population.

d. Prey harvest

Prey harvest (bulls and antlerless moose), success rates, and hunter effort will be monitored through standard harvest reporting methods. Potential antlerless harvest will be managed to reduce the nutritional stress in the population and to help meet IM harvest objectives.

4. Decision framework to implement or suspend a treatment

The IM Plan proposes a decision framework to implement and suspend predation control based on nutritional indices and estimates of recruitment. A decision framework can account for the risks associated with taking actions based on survey estimates and their inherent uncertainty. The relationship between management actions and risks of making an incorrect decision based on precision of biological survey data should inform decisions to begin or end management treatments. Public tolerance for risk of making incorrect decisions (i.e., recognition of consequences) should be assessed during the Feasibility Assessment, particularly for controversial topics such as implementing or suspending predation control, conducting prescribed fire, or failing to implement an adequate harvest strategy to slow, stop, or reverse ungulate population growth that threatens to damage habitat by overuse. Where uncertainty in sampling estimates can be adequately defined, statistical tests can inform the level of risk in making a decision to start or suspend IM actions. In that instance, decision frameworks can be modified (by changing the management objectives and levels of tolerance) to reflect public opinion regarding the balancing of risks. Risk assessment is addressed in more detail in *Guidelines for IM*.

Evaluation criteria are compared to pre-determined threshold values to guide decisions on whether a practice should begin or is no longer needed to achieve a desired outcome. This results in operational efficiency (cost and labor) as well as the minimum required application of controversial practices.

a. Predation control

i. Prey population abundance

We plan to use the following criterion for suspending the wolf control program. If any criterion is met the wolf control program will be suspended until the condition is corrected or an assessment is made about modifications to the plan.

- 1) If the moose population exceeds 3.0 moose/mi² (a population size greater than the upper IM population objective of 3500 moose) either the antlerless harvest needs to increase resulting in a decrease in moose density or wolf control needs to be suspended.
- 2) When one or more measure of nutritional stress (e.g., pregnancy/parturition rates, body condition, age at first reproduction, short yearling weights, twinning rates) shows a measurable decline in 3 consecutive years.
- 3) When measures are consistent with significant levels of nutritional stress [e.g., twinning rates ≤20%, adult female (>2 years old) pregnancy rates below 80%].

- 4) If the Unit 15C wolf population falls below 15 wolves at any time during the program.

The risks of not successfully managing antlerless hunts are significant. If moose densities grow and result in increased nutritional stress, declines in moose productivity offset the effectiveness of the wolf reduction. Also, nutritionally stressed moose are more vulnerable to severe winters, which is what caused the crash of the high density moose population in the early 1970s. On the other side, the risks of mismanaging antlerless hunts and allowing for harvests that are in excess of what would allow for population stability would result in a decline in densities.

ii. Harvest catch per unit effort (CPUE)

Improved CPUE values would be a positive outcome and will be assessed. However, we do not foresee using changes in CPUE values as a metric to determine suspension of the wolf control actions because survey and harvest data will be a more direct measure of success.

b. Habitat enhancement

While there have been recent human-caused fires in Unit 15C, the habitat in the unit does not respond to fire similarly to areas to the north or interior habitats. There are no significant tracks of aspen in the unit. Therefore, habitat enhancement is not as efficacious an option to aid moose as it would be elsewhere. We will use condition indices such as productivity, pregnancy rates, and twinning rates to assess the state of the moose habitat. While we would encourage land managers to use prescribed burns to enhance habitat, we understand that this option is limited due to inherent risks in fire management.

c. Prey harvest strategy

i. Population abundance

During the past decade, bulls were harvested in Unit 15C at a rate roughly between 7-11% of the total population (based on 2010 estimate of 2,919 moose). In 2010, this equated to a harvest of 59% of the estimated bull population which is well beyond sustainable limits (Young and Boertje 2008). This overharvest of bulls has likely driven the recent decline in the bull:cow ratio. When the bull:cow ratio increases to objective levels (20 bulls:100 cows) a bull harvest of about 5-6% of the total population size would likely be sustainable without wolf control. Given present densities, this would equate to a harvest of <200 bulls. At the 2013 Board meeting, the Department will submit a detailed proposal for alternative harvest strategies including antlerless harvests. The level of antlerless harvests will depend on the success of wolf removal and the responding increase in moose survival.

ii. Nutritional index

We will initially measure pregnancy rates, body condition, and twinning rates of cows to be radio collared in March, 2012. Additional measures, such as browse surveys, short yearling weights, and proportion of early reproduction in yearling or 2 year old cows may also be measured.

5. Public involvement

a. Continued outreach by Department

For this IM plan to be successful, harvest reporting must be done timely and accurately. The Department will certainly make this clear to all communities and participating hunters. Department staff will present program updates periodically to local ACs and through other public forums with Federal Regional Advisory Councils, Federal Subsistence Board, Kenai National Wildlife Refuge, local tribal councils, and the general public.

b. Continued engagement to confirm criteria chosen for evaluating success

Total harvest, success rate, and the number of days hunted for successful hunts will be assessed. Research will be conducted to assess productivity and some measure of recruitment (either survival rates or composition count analyses). Compositions surveys will be conducted in the fall and/or spring to assess calf numbers. For targeted antlerless hunts along the highway corridor, a reduction in roadkills would be a measure of success.

c. Participation in prey and predator harvest or predator control

Given that the success of aerial wolf control is uncertain, local hunters and trappers will be encouraged to continue harvest of wolves to maximize the effectiveness of the wolf reduction efforts. Public harvest of wolves and bears in the established seasons will continue to be encouraged. Harvest incentive programs initiated and funded by Alaska Native Corporations are also encouraged. Incentive programs that extend to non-local wolf and bear hunters should be considered by tribal organizations (e.g. land access, supplemental funding for permitted aerial wolf hunters, etc.).

Public support and active participation regarding antlerless harvests will be essential to the success of this program.

d. Monitoring and mitigation of hunting conflict

Communities on the western side of the unit include Kasilof, Clam Gulch, Happy Valley, Ninilchik, Anchor Point, Nikolaevsk, and Homer. Any level of harvest of antlerless moose to reduce roadkills and keep moose densities from exceeding IM population objectives will potentially result in conflicts between hunters and

landowners. Any facilitation to help hunting success and reduce conflicts by private and native landowners will help ensure the success of the program.

6. Other considerations

Given the number of human residences along the western side of the unit where the wolf control activities will take place, as well as a very high level of recreational snowmachine activity throughout the unit, this will likely be a fairly visible program. The department does not believe these control activities will create a threat to public safety. Nonetheless, the department intends to work very closely with those holding control permits, as well as the remaining public to ensure that safety is the primary concern in all control activities.

If antlerless hunts are approved, it is likely that Federal Subsistence hunters will submit proposals to the Federal Subsistence Board to have antlerless hunts on Federal land under Federal regulations. If Federal antlerless seasons are enacted, the IM program may have to adjust our strategy to maintain the goals of the program.

LITERATURE CITED

Alaska Department of Fish and Game. 2011. Guidelines for intensive management of big game in Alaska.

Alaska Department of Fish and Game. 2011. Feasibility assessment for maintaining or increasing sustainable harvest of moose in GMU 15C.

Peterson, R. O., J. D. Woolington, and T. N. Bailey. 1984. Wolves of the Kenai Peninsula, Alaska Wildlife Monographs 88.

Young, D. D., and R. D. Boertje. 2008. Recovery of low bull:cow ratios of moose in Interior Alaska. *Alces* 44:65-71.

Appendix A. Summary of supporting information

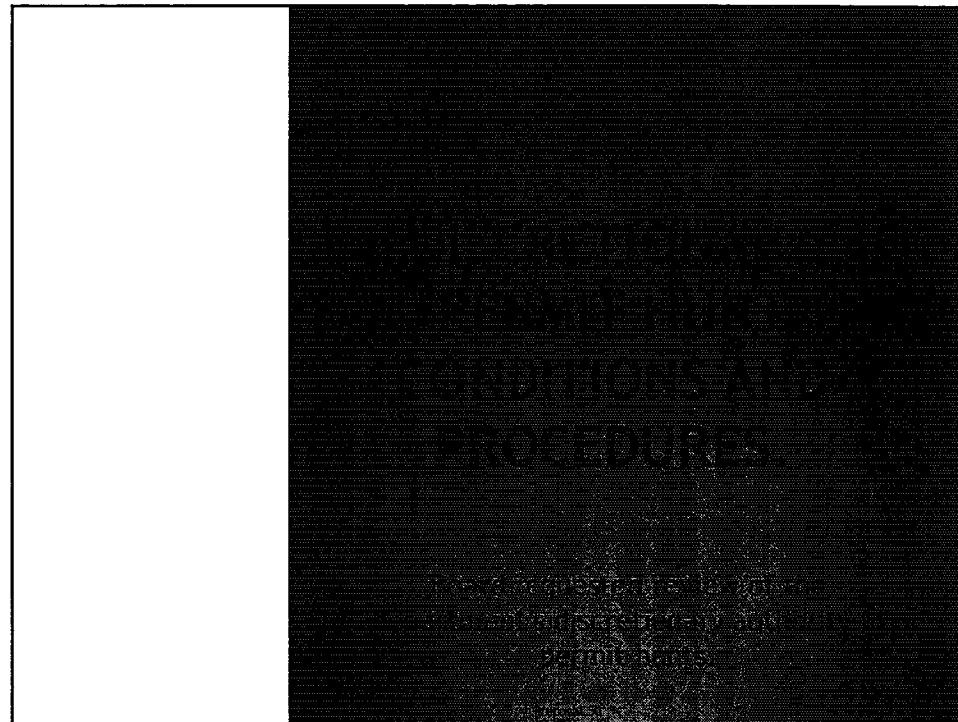
Geographic area and land status

Management area(s)	Unit 15C north of Kachemak Bay (1171 mi^2) Prey abundance assessment (1171 mi^2), prey harvest assessment (1171 mi^2), predator abundance assessment (1171 mi^2), predator control (1171 mi^2) – see Figure 1
Land status	For the portion of Unit 15C north of Kachemak Bay (1171 mi^2); land ownership is roughly as follows (see Figure 2): Potential land available for wolf control: 352 mi^2 (30%) State DNR 140 mi^2 (12%) CIRI 95 mi^2 (8%) Ninilchik Native Association

	<p>0.6 mi² (<1%) BLM 0.2 mi² (<1%) State Mental Health</p> <p>Unavailable land for wolf control: 295 mi² (25%) private and other small state or Native land that are islands within private land 275 mi² (23%) USFWS 17 mi² (1%) University of Alaska</p>
Biological and management situation	
Prey population	<p>15C - IM objectives: 2,500-3,500 moose</p> <p>15C - Estimate in 2010: 2919 moose (95% CI: ±277, 2.5 moose/mi²)</p>
Prey harvest (human use)	<p>15C - IM objectives: 200-350 moose</p> <p>Reported in 2010: 240 moose (8.2% harvest rate of moose based on 2010 population estimate).</p> <p>Amount Necessary for Subsistence: only in a small portion of 15C south of Kachemak Bay, ANS = 5-6 moose (there is no subunit-wide ANS).</p>
Feasibility of access for harvest	Exact measures of trails or navigable waters are unknown but access is considered good. There are >100 miles roads, >200 miles ATV trails, extensive snow machine access, corporation lands are closed to non-corporation members without a purchased land access permit, unleaded gasoline and 100 octane low lead aviation fuel is marginally higher than Anchorage prices, hunting season dates allow for road and ATV hunting opportunities.
Nutritional condition	Habitat does not appear to be excessively limiting based on a calf-twinning rate of 30% calculated in 2011.
Habitat status and enhancement potential	136 mi ² (12%) of IM area burned in the last 10 years. The area is essentially free of aspen and the beneficial response of the production of moose habitat to fire will be somewhat limited.
Predator(s) abundance	A November 2011 wolf survey resulted in a population estimate between 44-52 wolves. Black bear and brown bear densities are unknown within Unit 15C north of Kachemak Bay (1171 mi ²) however black bear likely number 600-800.
Predator(s) harvest	Within Unit 15C north of Kachemak Bay (1171 mi ²); wolves = 12 (SY= unknown but likely 20-35) black bears = 56 (SY= unknown but likely between 100-200) brown bears = 9 (SY= unknown)
Evidence of	During annual Composition surveys in November 2011, showed 21

Operational Plan for Intensive Management of Moose in Unit 15C

predation effects	<p>calves:100 cows. At predicted calving rates of 80%, and assuming 30% twinning rate, spring 2011 calf ratios may have yielded 104 calves:100 cows. Therefore, 104 calves – 21 calves = ~83 calves:100 cows were lost from approximately June to November. The causes of mortality remain unknown but much is likely due to predation (black and brown bears, and wolves). However, with the declining bull:cow ratio, it is uncertain what the initial calving rate is. Low bull numbers may be causing low pregnancy rates. Therefore, we cannot ascertain the true impact of predation without knowing the impact low bull numbers may be having on productivity.</p>
Feasibility of predation control	<p>We have been within IM objectives in Unit 15C. The recent hunting restrictions initiated by the Board will greatly reduce harvest through 2012 and drop the harvest well below IM objectives. In 2013, when the antler restrictions are reassessed and hunting opportunities for bulls potentially increase, a reduced bull-only harvest will likely be below IM objectives. Antlerless harvest that result from increased opportunities stemming from wolf control may allow the harvest (bulls+antlerless moose) to be within IM objectives.</p> <p>Given that the current moose densities are within IM objectives, success of wolf control will be contingent upon public acceptance and participation in antlerless harvests. The ability of the Department to create a study design to monitor the success of the program is limited due to the timing of initiation of wolf control (March 2012), the lack of baseline data from which to judge success, and other confounding factors.</p>
Other mortality	<p>On average over the past decade, 70 moose/year die due to vehicle collisions in Unit 15C. Severe winters occur periodically.</p>



HISTORY

The department has authority to apply any of 24 different conditions to any permit hunt. These cannot be applied to general season hunts.

- Different permit conditions are used across the state depending on hunt management.
- Some of the authorities have been in place since permit hunts were created; others have been added through the years in response to specific hunts.
- Some of the conditions have been adopted into other regulations resulting in redundancy.

5 AAC 92.052(1) FIRST CLAUSE

- (1) a permittee shall register at a designated station before entering, and upon leaving, the field; ...
- Ⓐ Used in some drawing permits (Kodiak bear, Koyukuk moose, JBER hunts) and most registration permits statewide.
- Ⓐ Allows hunt managers to closely monitor number of hunters actively in the field. In hunts on military lands, allows land owners to direct hunters to specific areas.
- Ⓐ Used in registration permit hunts when the division would like to have the opportunity to explain hunt conditions, requirements, and additional information to hunters one-on-one prior to the hunt.
- Ⓐ Requiring hunters to check in after completing the hunt allows hunt managers opportunity to obtain additional information concerning the hunt and collect biological information for harvested animals.

Proposal 50

3

5 AAC 92.052(1) SECOND CLAUSE

- (1) ... except as authorized under AS 16.05.405 (proxy hunting), a person may not hold more than one permit for the same species in a hunt area at one time;
- Ⓐ Limiting the number of permits allowed per hunter provides opportunity for other hunters.
- Ⓐ In closely managed hunts, allows the hunt manager to closely track harvest and number of hunters still in the field for each permit hunt available in the area.

Proposal 50

4

5 AAC 92.052(2)

- (2) a permittee shall demonstrate
- (A) the ability to identify the species hunted;
 - (B) the ability to identify the permit hunt area;
 - (C) a knowledge of weapon safety and use;
- ⦿ Generally used in conjunction with (3) orientation requirements.
 - ⦿ One of the reasons registration is often limited to specific offices for some hunts-local office able to provide information concerning specific animal identification (i.e. billies vs. nannies), maps, land ownership, in addition to verification that hunter understands the hunt area, legal animal and other issues for the specific hunt.

Proposal 50

5

5 AAC 92.052(3)

- (3) a permittee shall attend an orientation course;

- ⦿ Required for several hunts where:
 - 1) Animal identification is difficult (Delta bison)
 - 2) Special requirements are implemented by land owners (military installations such as JBER)
 - 3) Social conflicts are present (Mendenhall wetlands)

Proposal 50

6

5 AAC 92.052(4)

- (4) a permittee shall carry an operative radio while in the field;
- ◎ Not currently required in any permit hunt
- ◎ No plans to implement in future
- ◎ With advent of cell and satellite phones, may no longer be necessary.
- ◎ Amended language shows deletion of this authority.

Proposal 50

7

5 AAC 92.052(5) FIRST CLAUSE

- (5) a permittee who takes an animal under a permit shall deliver specified biological specimens to a check station or to the nearest department office within a time set by the department
- ◎ Used by the department in many hunts to collect biological specimens for data on animal sex, age, horn/antler size, DNA, etc.

Proposal 50

8

5 AAC 92.052(5) SECOND CLAUSE

- (5) ... the trophy value of an animal taken under a subsistence permit may be nullified by the department
- Ⓐ Used to discourage trophy hunting in subsistence hunts
 - Ⓐ Currently used in:
 1. Moose hunts in the Koyukuk
 2. Muskox hunts on the Seward Peninsula
 3. Brown bear subsistence hunts in portions of Units 9, 17-19, 21-24 and 26.
 - Ⓐ The moose and muskox hunts have been reviewed by the Board in recent meetings.

Proposal 50

9

5 AAC 92.052(6)

- (6) a permittee must be accompanied by a department representative;
- Ⓐ Used in the past for hunts where circumstances existed that could be addressed by requiring department personnel to accompany hunters, such as
 1. Close proximity to residences
 2. Local resistance to hunt
 3. Difficulty identifying legal animal
 4. Attempting to take specific, identified animal(s)
 - Ⓐ Most recent example was the antlerless moose hunt in Homer
 - Ⓐ Has not been used for many years
 - Ⓐ New “hot-spot” hunt in 14A considered reinstating this requirement, but did not for this first season.
 - Ⓐ Amended language shows deletion of this authority.

Proposal 50

10

5 AAC 92.052(7)

- (7) only a specified number of permittees may hunt during the same time period, and a permittee may hunt only in a specified subdivision within the permit hunt area;
- Ⓐ First part is used to allocate number of permits to a specific time frame; second part used to subdivide hunt area.
 - Ⓑ Used extensively in permit hunts throughout the state to split seasons and areas to separate hunters in time and space and disperse harvest.
 - Ⓒ Notable examples are: Chugach sheep hunts, 15B moose hunts, 20A moose hunts.
 - Ⓓ 5 AAC 92.052(21) further clarifies the department's authority to subdivide the hunt area.

Proposal 50

11

5 AAC 92.052(8)

- (8) a permittee may not use specified mechanized vehicles for hunting big game or for transporting meat from the hunting area;
- Ⓐ Most mechanized restrictions are done under Board regulations for controlled use areas; rarely used by the department under discretionary authority, and only after consultation with the Board.
 - Ⓑ Some subsistence permit hunts restrict the use of aircraft based on traditional hunting patterns.

Proposal 50

12

5 AAC 92.052(9)

- (9) a permittee who cancels his or her plan to hunt shall notify the department at an office, and within a time limit, specified by the department;
- ◎ In closely managed hunts, allows the hunt manager to closely track harvest and number of hunters still in the field for each permit hunt available in the area.
 - ◎ Used to implement alternate lists and provide maximum opportunity in some hunts

Proposal 50

13

5 AAC 92.052(10)

- (10) a permittee may use only weapons and ammunition specified by the department;
- ◎ Most weapon restrictions are done under Board regulations, in seasons or management area regulations.
 - ◎ Rarely used by the department under discretionary authority, and only after consultation with the Board.
 - ◎ Long-term-Used in bison drawing hunt to require specific size bullet and firepower to guarantee lethal shot and prevent wounding.

Proposal 50

14

5 AAC 92.052(10) CONTINUED

- ◎ Short-term-currently, registration permit holders in new “hot-spot” hunt in Palmer area are limited to shotgun only--- Implemented for consistency purposes, since large part of the hunt area was already restricted to shotguns under regulations governing the Palmer-Wasilla Management area.
- ◎ Also currently used for restricted weapons (shotgun, archery, muzzle-loader) hunt for muskox in Unit 22C close to community of Nome.

Proposal 50

15

5 AAC 92.052(11)

(11) before receiving a permit, the permittee shall acknowledge in writing that he or she has read, understands, and will abide by, the conditions specified for the hunt;

- ◎ Standard permit condition on all permit hunts.
- ◎ Should be removed from discretionary conditions and moved to 5 AAC 92.050, required permit conditions.
- ◎ Amended language shows moving this requirement into 5 AAC 92.050.

Proposal 50

16

5 AAC 92.052(12)

- (12) a permittee may hunt only during specified time periods;
- Ⓐ Used in many hunts, to split season dates into shorter time frames and separate hunters in time
 - Ⓐ Used to limit start time for Delta bison winners depending on order drawn; also used to limit each permittee to one 4 day hunt period in the Bison Range Youth hunt for moose.
 - Ⓐ Used to require permit winners to select specific time slot (Kodiak bear) when picking up permit.
 - Ⓐ One hunt (14C moose draw in Chugach Park) restricts hunting periods to Monday - Friday only, and one new permit hunt is limited by hours of hunting opportunity during the day (14C, Mirror Lake and Edmonds Park-8 am-6 pm)-these are conditions negotiated with the parks to allow these hunts on park lands.

Proposal 50

17

5 AAC 92.052(13)

- (13) a permit applicant must be at least 10 years old;
- Ⓐ In 2002, the Board of Game adopted age 10 as the minimum age that a hunter could have their own bag limit, meaning that harvest tickets or permits could no longer be obtained by anyone less than 10 years old.
 - Ⓐ This discretionary authority is no longer necessary.
 - Ⓐ Amended language shows deletion of this authority.

Proposal 50

18

5 AAC 92.052(14)

- (14) a permittee shall submit, on a form supplied by the department, information requested by the department about the hunt; the permittee shall submit this form to the department within the time limit set by the department;
- Ⓐ Requires hunters to provide information requested on the permit report form, within the time set by the department; applies to all permit hunts.
 - Ⓐ Should be removed from discretionary conditions and moved to 5 AAC 92.050, required permit conditions.
 - Ⓐ Amended language shows moving this requirement into 5 AAC 92.050.

Proposal 50

19

5 AAC 92.052(15)

(15) the permit applicant must hold a valid Alaska hunting license; however, this does not apply to a resident under the age of 16; an applicant's hunting license number must be entered on the permit application; a resident under the age of 16 shall enter his or her age instead of a license number;

- Ⓐ Used for registration permit hunts.
- Ⓐ Not discretionary for drawing hunts as drawing applicants must enter a hunting license number on the drawing application as required under 5 AAC 92.050.

Proposal 50

20

5 AAC 92.052(16)

- (16) a hunter participating in a permit hunt that allows only the use of a bow and arrow must have completed a department - approved bowhunter education course;
- ◎ Regulations adopted under 5 AAC 92.085 require ALL big game hunters in hunts restricted to archery to successfully complete a department-approved bowhunter education course .
 - ◎ This includes all archery-only hunts, whether general season or permit.
 - ◎ Since the requirement for an education course has been expanded to all big game hunts that are limited to archery only, this discretionary authority is no longer necessary.
 - ◎ Amended language shows deletion of this authority.

Proposal 50

21

5 AAC 92.052(16) CONTINUED

- ◎ Regulation requiring successful completion of a department-approved bowhunter education course in all big game hunts that are limited to archery.

5 AAC 92.085(3) prohibits the taking of big game with a longbow, recurve bow, or compound bow, unless the

- ... (D) hunter has successfully completed a department-approved bowhunter education course for any restricted weapons hunt that authorizes taking by bow and arrow

Proposal 50

22

5 AAC 92.052(17)

- (17) a permittee may take only an animal of a sex specified by the department;
- ◎ Used in existing permit hunts, limiting legal animals to bulls only or cows only, for herd management depending on population status.
 - ◎ Used extensively for Seward Peninsula muskox hunts to start cow seasons later and manage by quota (cow quota contained in total quota).
 - ◎ May be used for in-season closures on one sex or the other (Nelchina caribou).
 - ◎ Also used to create separate permit hunts for each sex (Delta bison).

Proposal 50

23

5 AAC 92.052(18)

(18) a person with physical disabilities, as defined in AS 16.05.940 , with a special permit to hunt with a motorized vehicle, must be accompanied by another hunter who has a valid hunting license and is capable of assisting the permittee in retrieving game taken by the permittee.

- ◎ Currently used on special permits allowing handicapped hunters to use motorized vehicles, such as shooting from a boat in SE Alaska and PWS.

Proposal 50

24

5 AAC 92.052(19)

- (19) a person may be limited to one big game registration permit at a time in Units 1, 17, 20(E), 22 and 23.
- Ⓐ Provides more opportunity for individual hunters by limiting combination hunts.
 - Ⓐ Used by hunt managers to track number of hunters still in the field for specific hunts.
 - Ⓐ First used in 20E to require hunters to choose to hunt either caribou and moose, not both at the same time.
 - Ⓐ Also used in Unit 22C to require hunters to choose to hunt either a muskox or a moose, not both at the same time.

Proposal 50

25

5 AAC 92.052(20)

- (20) the number of registration permits that may be issued per household for a specified big game hunt may be limited.
- Ⓐ In popular hunts with limited permit availability, this provides more opportunity.
 - Ⓐ Adopted in response to multiple permits given to same family in limited permit hunts
 - Ⓐ Currently used in Unit 20A antlerless hunts, the Minto Flats moose hunt, and Seward Peninsula moose hunts.

Proposal 50

26

5 AAC 92.052(21)

- (21) the permit hunt area authorized by the Board of Game may be subdivided into smaller permit hunt areas.
- Ⓐ Added as additional clarification to 5 AAC 92.052(7).
 - Ⓐ Clarifies that the permit hunt area authorized by the Board may be split into several smaller areas under the department's discretion.
 - Ⓐ Allows the department to disperse hunter effort and harvest into less accessible areas.

Proposal 50

27

5 AAC 92.052(22)

- (22) a permittee may transfer the permittee's Unit 13 subsistence permit to a resident member of the permittee's family, within the second degree of kinship; a person may not receive remuneration for the transfer of a permit under this paragraph;
- Ⓐ Added at the request of Unit 13 hunters to address traditional hunting practices allowing other family members to take the animal under a subsistence permit.
 - Ⓐ Requirements for proxy hunting are governed by statute and are much stricter, so did not allow this opportunity.

Proposal 50

28

5 AAC 92.052(22) CONTINUED

- © The transfer to second degree kindred was adopted prior to the current hunt regime, which includes Tier I permits and Community harvest permits.
- © Under Tier I permits, all members of the household are eligible to harvest the animal.
- © Under Community harvest permits, permit holders can choose a designated hunter.
- © The Board may wish to reconsider this discretionary authority, since other transfer options are now available under other regulations.

Proposal 50

29

5 AAC 92.052(23)

(23) except as otherwise provided, if a drawing permit hunt is undersubscribed, surplus permits may be made available at the division of wildlife conservation office responsible for management of the applicable hunt. Surplus permits are not subject to the limitations in 5 AAC 92.050(2) and (4)(F).

- © An undersubscribed hunt has fewer applications than permits available. In the past, these permits went unused.

Proposal 50

30

5 AAC 92.052(23) CONTINUED

- Added by the Board to allow the division to provide additional hunting opportunities by issuing “leftover” permits on a first-come, first-served basis.
- In the 2011-12 regulatory year, brown bear hunts in Unit 23, brown bear and moose hunts in Unit 22, and moose hunts in Units 20A, 20B, 21 and 24 were offered.

Proposal 50

31

5 AAC 92.052(24)

- (24) a permittee must dispose of parts of game not required to be salvaged as directed by the department in the permit.
- Requires hunters to move inedible parts of animals away from trails, campgrounds, etc. in some urban area hunts.
 - Recently added to provide opportunity in the city and state park areas near Anchorage.
 - Necessary to comply with city and state park requests concerning disposal of harvested animals in areas frequented by other user groups.
 - Also a requirement in the new “hot-spot” hunt in the valley due to housing density, roads, etc.

Proposal 50

32

5 AAC 92.052(25)

- (25) a person may be limited to taking one mature or one immature muskox, as defined by horn configuration, in Units 22 and 23.
- ◎ Added by the Board at the Barrow meeting in November 2011. Will not be effective until July 1, 2012.
 - ◎ Allows department to specify legal muskox by horn configuration and age, to manage harvest of bulls by age class.

Proposal 50

33

PROPOSAL 50

Board requested review of the department's discretionary authority in permit hunts.

Department recommendation: Amend and Adopt

Questions?

Proposal 50

34



Proposal 53

EFFECT OF THE PROPOSAL: Establish statewide standards for crossbow equipment used to take big game

DEPARTMENT RECOMMENDATION: Adopt

RATIONALE: Department Proposal



Proposal 53

5 AAC 92.085. Unlawful methods of taking big game; exceptions. Establish statewide standards for crossbow equipment used to take big game.

- (x) With a crossbow, unless the
 - (A) Crossbow peak draw weight is 100 pounds or more; and
 - (B) Crossbow has a minimum draw length of 14 inches from front of crossbow to back of string when in the cocked position; and
 - (C) Bolt is tipped with a broadhead and is a minimum of 16 inches in overall length; and at least 300 grains in total weight and
 - (D) the broadhead:
 - (i) has fixed metal cutting blades at 7/8 of an inch in diameter; and
 - (ii) is not barbed; and
 - (E) Scopes or electronic sights may be attached to the crossbow; and
 - (i) may not project light externally; and
 - (ii) no other electronic devices may be attached to the crossbow



Proposal 53

- Crossbow peak draw weight 100 lbs or more
 - Maine (Moose) Not less than 100 not more than 200
 - Washington (Elk) 125 Minimum
 - Wyoming (Elk, Moose) Minimum 90lbs
 - Minnesota (Moose, Deer) Must deliver 42 lbs of Kinetic Energy
- Minimum draw length of 14 inches when cocked (important in developing sufficient kinetic energy and momentum)
 - Wyoming (Moose) 14 inch minimum
 - Washington (Elk) 14 inch Minimum



Proposal 53

- Bolt Length: bolt is tipped with a broadhead, at least 16 inch inches in overall length and at least 300 grains in total weight (important for maintaining sufficient kinetic energy and momentum for penetration)
 - Minnesota(Moose, Deer) 10 inch bolt
 - Wyoming (Elk, Moose) 16 inch bolt
 - Arizona (Elk) 16 inch bolt
- Kinetic Energy
velocity x velocity x total arrow weight (in grains) divided by 450,240
 - “Energy” in a bolt as a result of its velocity and overall weight
 - Determining factor when it comes to penetration
 - < 25 ft #s = Small Game
 - 25-41 ft #s = Medium Game (Deer, Antelope)
 - 42-65 ft #s = Large Game (Moose, Elk)
 - >65 ft #s – Toughest Large Game (Cape Buffalo, etc.)



Proposal 53

	100# Crossbow	50# Compound	150# Crossbow	70# Compound
Velocity @ 10 yards	244.8	223 FPS	275 FPS	270 FPS
Kinetic Energy (ft lbs)	53	41	84	62.7
Velocity @ 20 yards	240.06	213.4	264.21	265
Kinetic Energy @ 20 yards (ft lbs)	51	40.3	62	60.8
Velocity @ 30 yards	235.4	209.9	258.98	259.3
Kinetic Energy @ 30 yards (ft lbs)	49	40.3	60	59
Velocity @ 40 yards	230.51	206.6	253.84	254.1
Kinetic Energy @ 40 yards (ft lbs)	47	39	57	59
Velocity @ 50 yards	225.88	203.3	248.8	250.23
Kinetic Energy @ 50 yards (ft lbs)	45	37.8	55	57.3

* Data derived from informal testing by ADF&G personnel at Rabbit Creek Shooting Park, 2009-10.



Proposal 53

Broadheads; fixed 7/8" with metal cutting blades and is not barbed (Meets same minimum requirements as other states with comparable big game)

- Arizona (Elk) 7/8 inch
- Minnesota (Moose) 7/8 inch
- Maine (Moose) 7/8 inch
- Wyoming (Moose, Elk) 1 inch

Scopes and Electronic Devices

- Amend proposal to allow for scopes on crossbows. Today's crossbows are almost exclusively sold with scopes or electronic sights.
- Sights on scopes would not project light externally.
- To allow these types of scopes would put us in line with most other states.



Proposal 54

EFFECT OF THE PROPOSAL: Expand the definition of bow to include crossbows.

DEPARTMENT RECOMMENDATION: Do Not Adopt

RATIONALE:

- "Methods and Means Exemption" in place
- Current bow definition in Alaska does not match what a crossbow is



Proposal 54

- Keep crossbows as separate equipment
- Alaska DOES have provision for handicapped hunters
 - "Methods and Means Exemption" 5 AAC 92.104
- Current definition of archery is not compatible with crossbow
 - Scope & electronics currently not legal for archery
- Would provide hunt manager with more flexibility
- Other states (Ohio/Pennsylvania) have shown increased success rates with crossbows:
 - Possibly due to increased lethality
 - Also more hunters in the field (excess deer in many urban areas)



Proposal 54

- Older Hunters
 - Other states now allow use of crossbows in archery seasons
 - Age groups varies from (50-75)
- Younger Hunters
 - other states have minimum age for youth (e.g. 12 years old) due to safety concerns of crossbow
 - A cocked-crossbow is not the safest weapon to recruit young shooters with
- Education and/or Certification (If required)
 - NBEF currently offers "Today Crossbow Hunter"
 - Kalkomey Enterprise, Inc. will have Online Course by Fall 2012



Proposal 57

EFFECT OF THE PROPOSAL: Allow archers to use mechanical/retractable broadheads for all big game

DEPARTMENT RECOMMENDATION: No Recommendation

RATIONALE: Current regulations are over 10 years old; many technological advances to all aspects of archery equipment could be considered



Proposal 57

- Current broadhead requirements were developed over 10 years ago
- Numerous advancements in all archery equipment could be considered
- Materials and design developments have improved
- Most responsible hunters will only choose quality equipment to include the best broadheads



Proposal 59

EFFECT OF THE PROPOSAL: Require the use of a lighted nock on the arrow for moose and bear hunting

DEPARTMENT RECOMMENDATION: Do Not Adopt

RATIONALE: Lighted nocks are currently a legal piece of equipment



Proposal 59

- Current regulations allow the archer to choose to use lighted nocks
- To mandate for all bowhunters under all conditions would:
 - Would be very costly to every bowhunter
 - Would require every arrow in the field with the hunter to be fitted with the lighted nock
 - They average in price at (\$15-20) per nock
- If a guide would like to require the client to use a lighted nock in some situations, that could be addressed in the contract with the individual client.



Proposal 60

EFFECT OF THE PROPOSAL: Clarify legal type of compound bow

DEPARTMENT RECOMMENDATION: Do Not Adopt

RATIONALE: Misinformation in proposal



Proposal 60

- Modern compound bows do store their energy in preloaded limbs
- These limbs must move (even though slightly) or no transfer of energy to the arrow would take place
- The wheels or cams simply make it mechanically easier to store the energy in the limbs



Proposal 61

EFFECT OF THE PROPOSAL: Revert to past definition of legal compound bow. Bow must shoot 1 oz arrows with a distance of 175 yards

DEPARTMENT RECOMMENDATION: Do Not Adopt

RATIONALE: Current archery regulations were carefully drafted years ago for ease of understanding and enforcement; they have served bowhunters well.

Proposal 258

Effect : Replaces the current drawing season for brown bears in Units 7&15 with a registration season

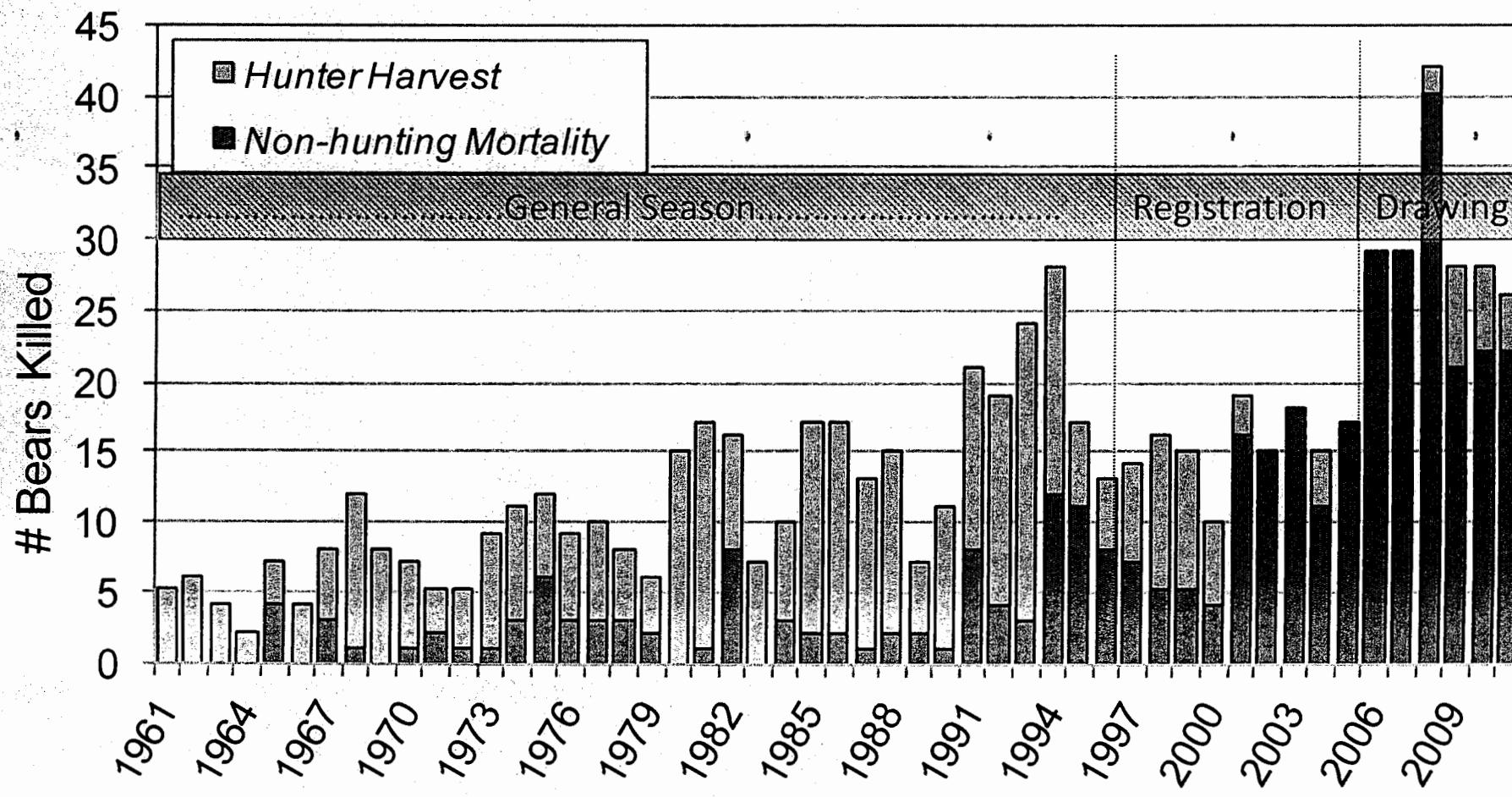
Concern : Inadequate hunting opportunity

Department position : No recommendation

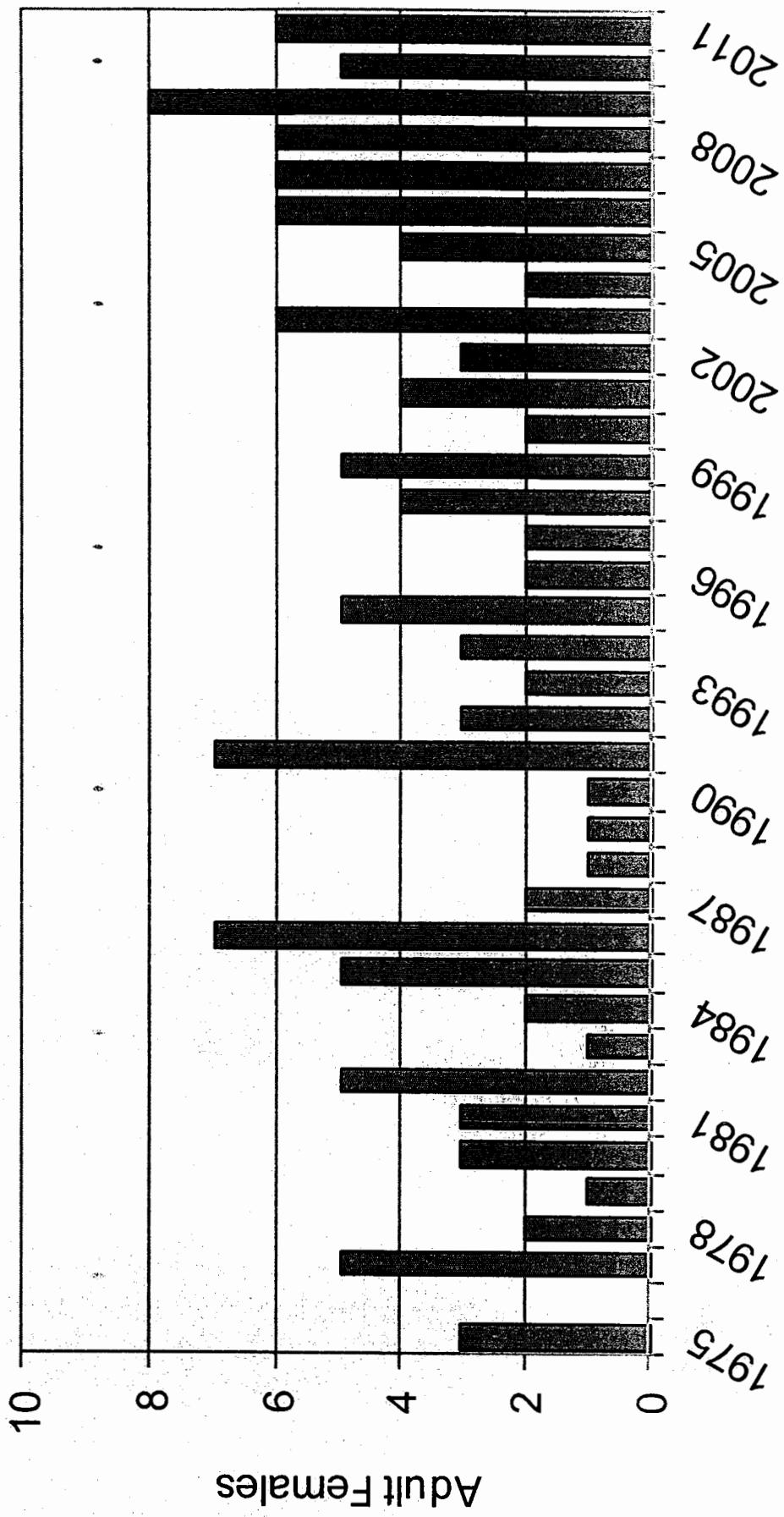
Hunt history

- Pre 1997 was open general season
- 1997-2006 was registration season
- 2007 to present is a drawing season

Human-caused brown bear mortalities in GMUs 7 & 15, 1961-2011

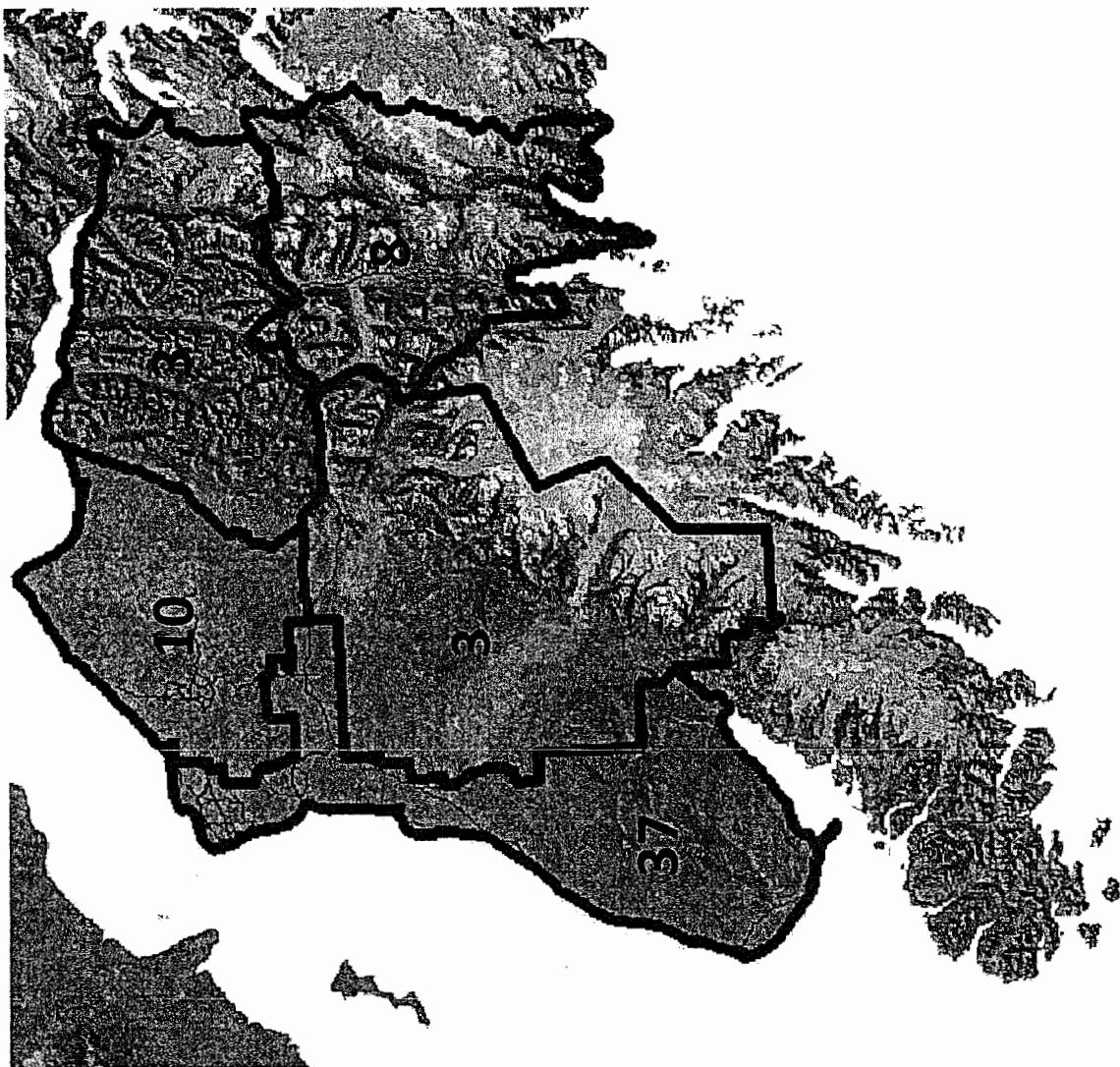


**Adult Female Mortality of Brown Bears (≥ 5 years old)
in GMUs 7 & 15, 1975-2011**



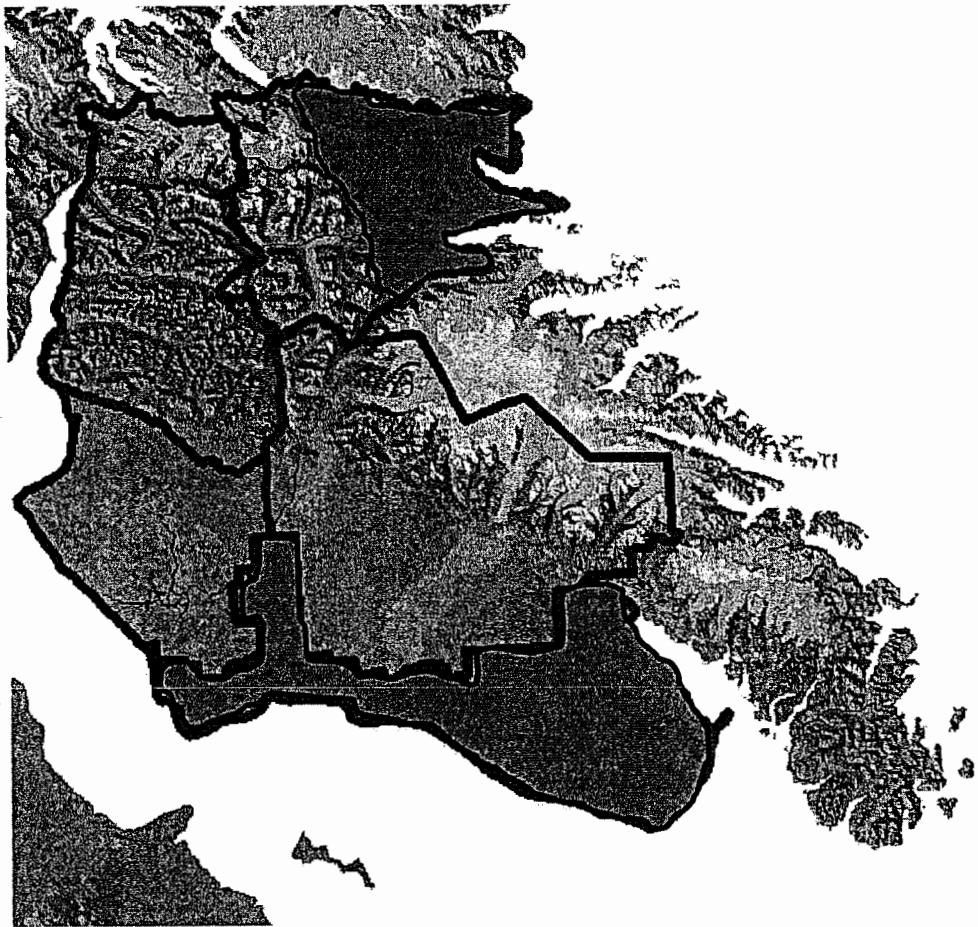
Proposal 258

Current drawing hunt boundaries

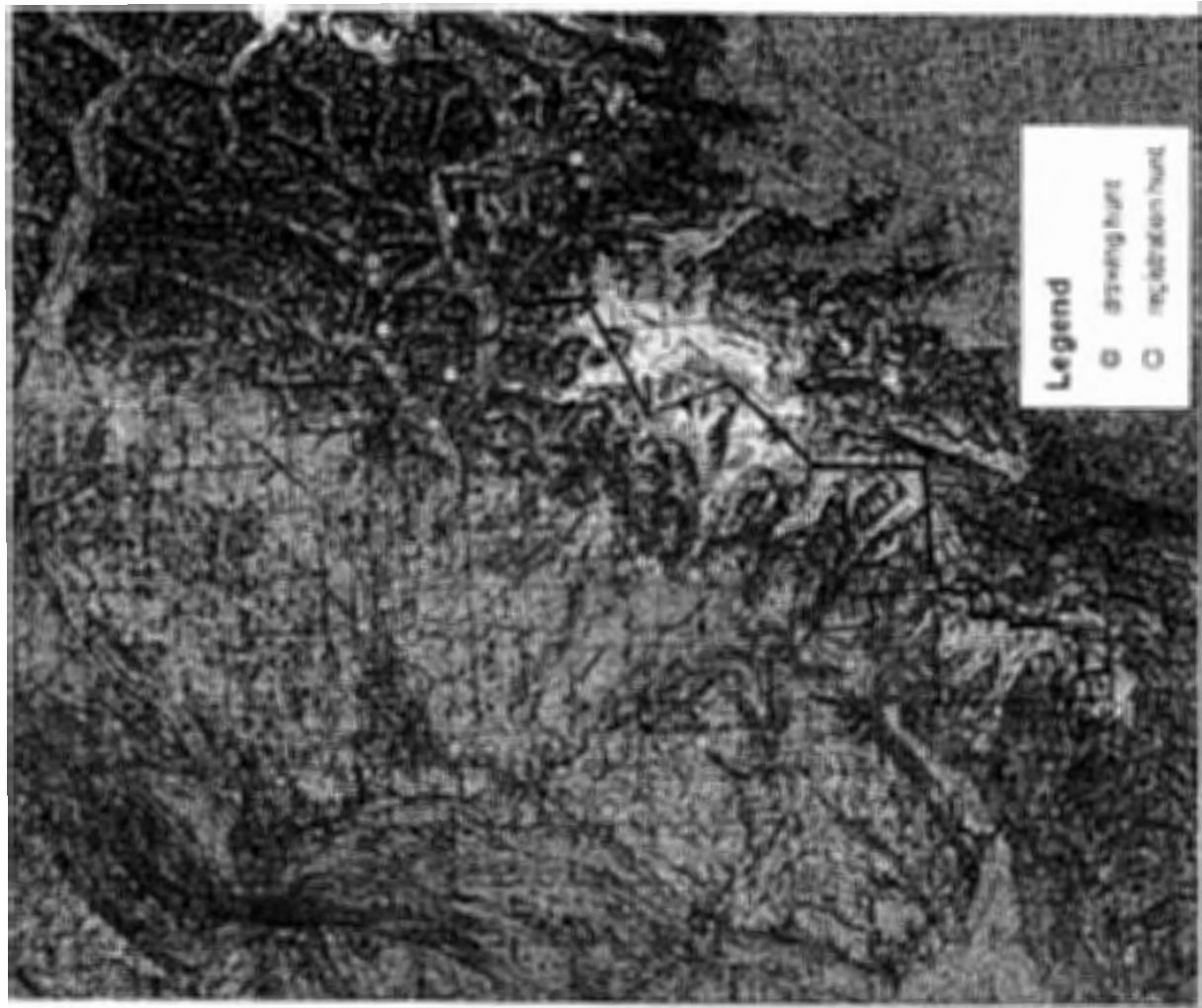


Proposal 258

Proposed registration and
drawing hunt boundaries



Registration and Drawing hunt kill locations



Summary

- Department: No Recommendation
- If registration season is adopted
 - Dept. would prefer to have the ability to focus registration hunts in specific areas
 - Dept. would likely limit the number of registration permits issued (by season and office)
 - Dept. would need to postpone registration hunt until 2013 (conflicts with current drawing permit hunts)
 - Up to 200 permits

Proposal 64

Limit drawing permits to only two permits per year

- Recommendation: No Recommendation
- Public Proposal

Background

- Success rate of individuals in drawings

Year	Total	Accepted	Rejected	Success Rate
2010	0	19,156	74,85%	
2010	1	5,826	22.77%	
2010	2	552	2.16%	
2010	3	48	0.19%	
2010	4	8	0.03%	
2010	5	1	0.00%	
2011	0	17,143	70.18%	
2011	1	6,433	26.33%	
2011	2	769	3.15%	
2011	3	75	0.31%	
2011	4	8	0.03%	

Background

- Proponent suggests that people do not have time or money to use more than 2 permits per year
 - We have no evidence to support or refute
- This modification would require some programming changes to current drawing system

Proposal 66

Allow a maximum of 10 percent for the Alaska drawing permits to be awarded to nonresident hunters

- Recommendation: No Recommendation
- Public Proposal
 - Not clear from proposal if this is 10% by hunt, species, or total

Non-resident drawing success rate, 2010-2011

Regulation Year	Species	Allocation	Number	Weight	Percent	Non-resident
2010	Brown Bear	1407	115	598	42%	10%
2010	Caribou	502	18	725	35%	5%
2010	Elk	365	50	100	10%	5%
2010	Mt Goat	563	70	721	10%	2%
2010	Bison	153	13	137	2%	2%
2010	Moose	1906	55	1767	6%	6%
2010	Sheep	495	59	525	5%	5%
2010	Musk Ox	77	1	61	1%	1%
	Total	6460	646	7105	100%	100%
2011	Brown Bear	393	13	515	27%	1%
2011	Caribou	633	27	1740	35%	3%
2011	Elk	371	16	117	4%	1%
2011	Mt Goat	549	70	619	11%	2%
2011	Bison	140	1	141	1%	1%
2011	Moose	4144	115	4169	10%	2%
2011	Sheep	449	48	497	10%	2%
2011	Musk Ox	70	1	71	1%	1%
	Total	7755	598	8353	100%	100%

Background

- This could have a impact on revenues to the Fish and Game Fund
- This change could have impact on guiding industry
- This would require that department establish nonresident harvest allocations.
- AS 16.05.255(d) includes only moose, deer, elk, and caribou as having resident preference

Proposal 69

Establish bonus point/preference system for draw hunts

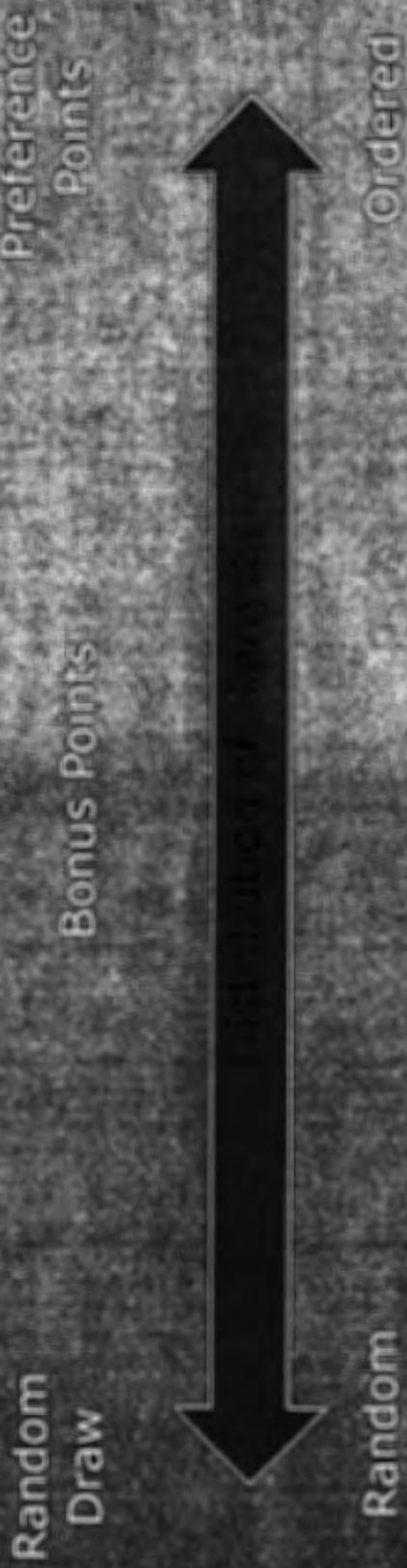
• Recommendation: No Recommendation

• Public Proposal

Proponent's request

- Bonus Point system
- Give one extra chance for each year not drawn
- "Bonus chance could be used toward any moose draw permit or for an additional chance/chances on the same draw."

Types of Selection Systems



Types of Selection Systems

Random

- Everyone has equal chance of selection
- No memory from year to year

Preference Point

- Orders selection by accumulated points
- Points accumulated over years through some set of rules

Random
Draw

Preference
Points



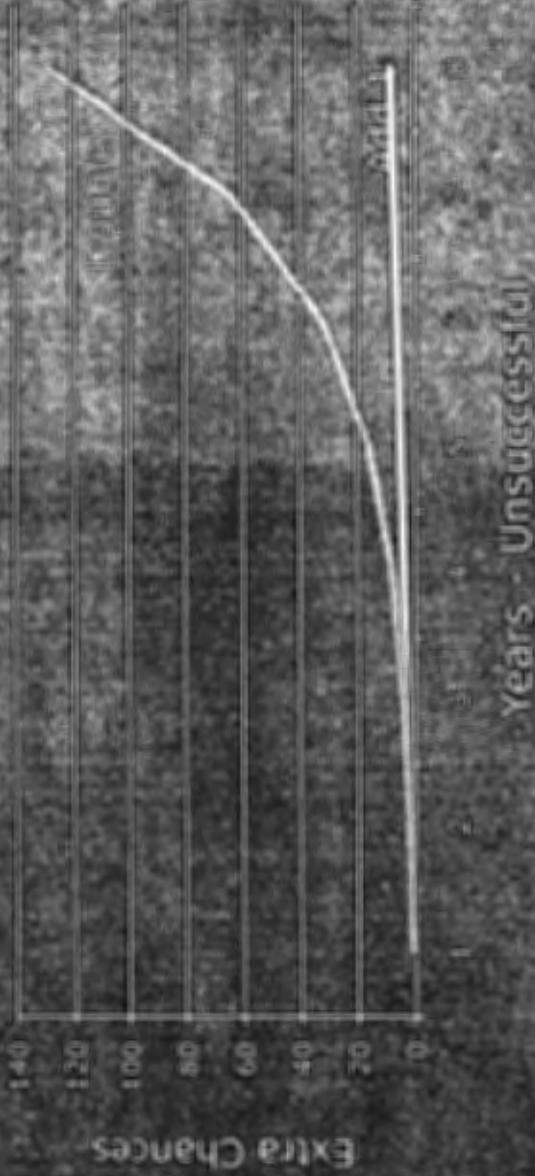
Types of Selection Systems

Bonus Point

- Has characteristics of both Random Draw and Preference Point
- Selection from pool of applications is done randomly, but some people are have more applications in the pool
- Requires memory of previous applications and success in draws

Types of Selection Systems

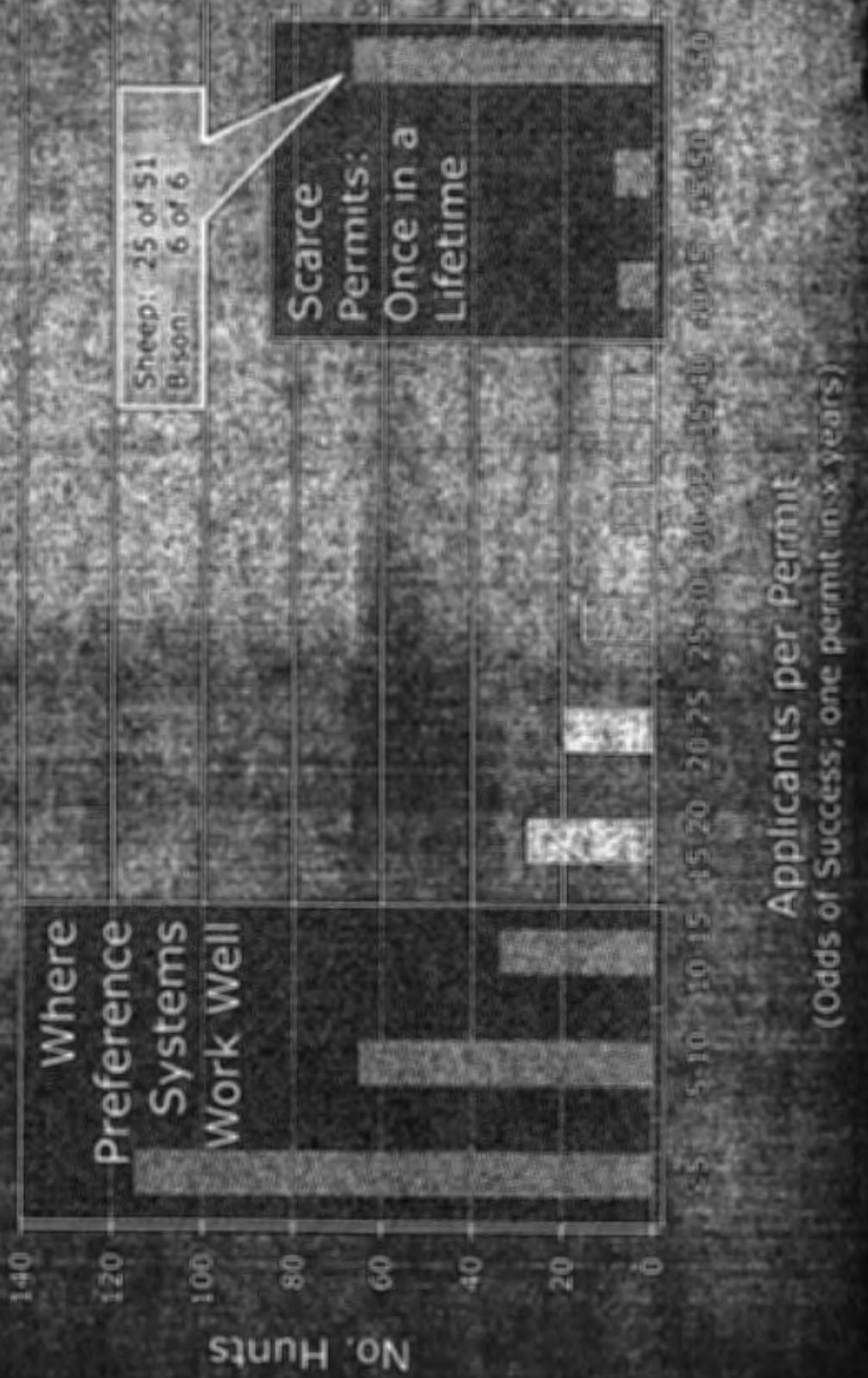
- Uses mathematical equation to determine amount of preference



Drawing Statistics

- # Drawing hunts: ~ 400
- # Permits Available: ~ 7,500
- # Applicants (hunters): ~ 26,000
- # Applications: ~ 130,000
- Ave. applications / hunter: 5
- Odds of Success:
 - average: 1:3.5
 - range: 1:1 - 1:500

Odds Of Drawing Success



Summary

- Preference systems
 - Do not solve the problems of scarce resources
 - Favor persistence; discourage new hunters
 - Rules can become complex
- Cost to department for administering a preference system is significant

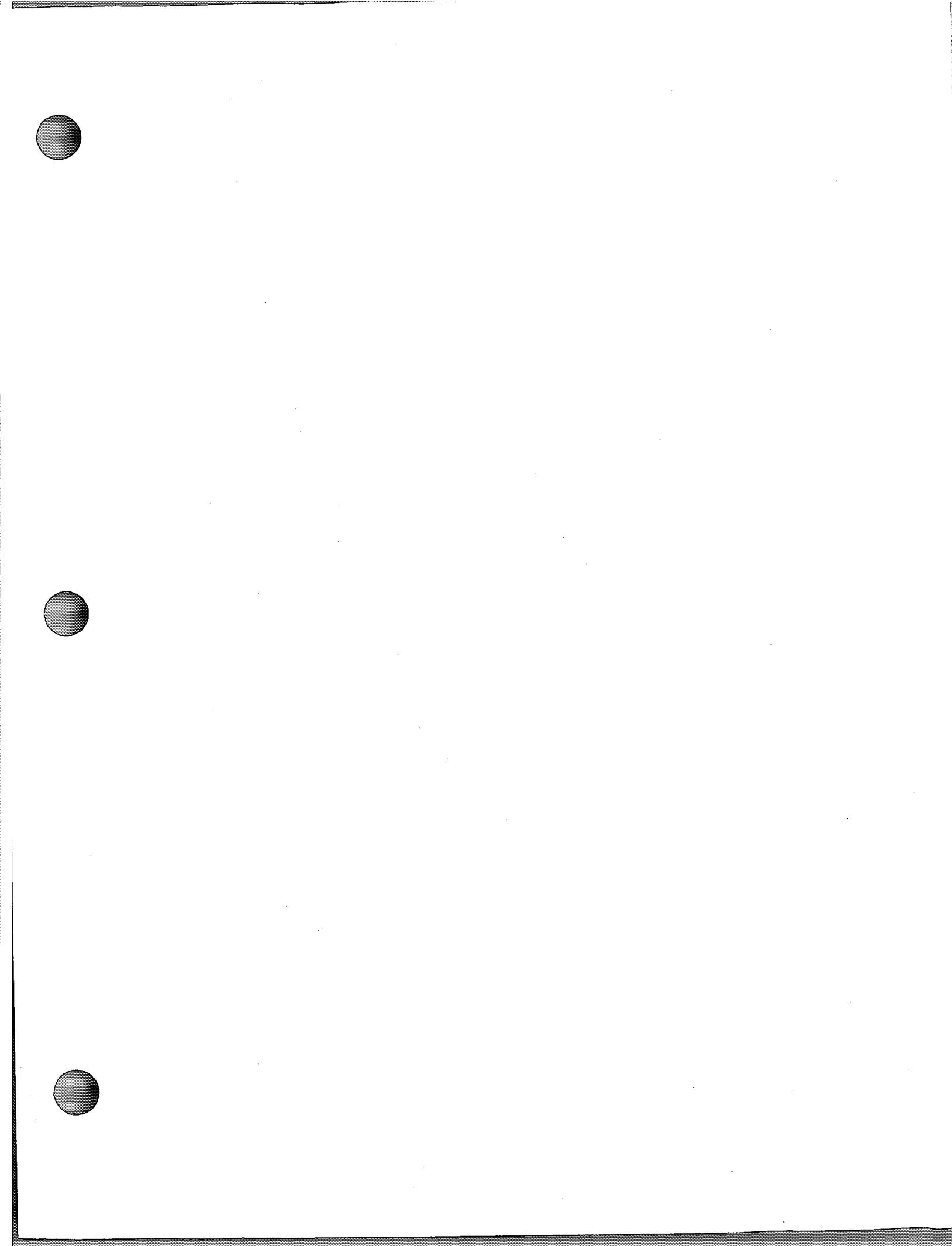
Proposal 70

Allow nonresident deployed military personnel
to defer drawing permits

- Recommendation: No Recommendation
- Public Proposal

Background

- Current regulation allows resident military personnel that are prevented from using drawing permit to be issued a "transferred" permit for the following year.
- The Board considered including nonresident military personnel and chose to restrict the regulation to resident military personnel.



Proposal 71

Open resident seasons one week before nonresident seasons in all intensive management areas

- Recommendation: No Recommendation
- Public Proposal

Background

- This proposal requests all big game seasons start 1 week earlier for residents in all areas currently listed with positive intensive management findings for moose, deer, or caribou.
- Intensive management areas have been adopted or caribou, deer, and moose across most of the state, as listed in 5 AAC 92.108
- All big game seasons would include black and brown bears, bison, elk, mountain goat, muskox, sheep, wolf, and wolverine
- AS 16.05.255(d) states that "regulations adopted ... must provide that, consistent with the provisions of AS 16.05.258, the taking of moose, deer, elk, and caribou by residents for personal or family consumption has preference over taking by nonresidents."

Proposal 75

Open early youth hunt for all big game, ten days before other seasons; require hunter education

- Recommendation: No Recommendation
- Public Proposal

Background

- Proponent request that youth hunters with hunter education be allowed to hunt big game 10 days before other hunters, followed by an opening of all residents 10 days before nonresidents.
- This would expand the hunter education requirements to all Units (currently only Units 7, 13, 14, 15, and 20). This could preclude some youth from hunting.
- This could lead to some of the youth seasons opening before seasons established for subsistence uses.
- Allowing youth hunts before Tier II hunts may be a violation of AS 16.05.258(b) (the state subsistence statute)

Proposal 77

Require hunters to use only one type of method; either firearm or bow; require a tag

- Recommendation: No Recommendation
- Public Proposal

Background

- This proposal seems to request that hunters must choose between methods of hunting and would not allow hunting in both
- This is an allocation issue based on preferred hunting methods
- Proponent requests a tag be required that indicates chosen method
- This would be a significant departure from current general season harvest tickets and would require developing new tag requirements.

Proposal 78

Open resident sheep seasons seven days earlier than nonresident seasons

- Recommendation: No Recommendation
- Public Proposal

Background

- Proponent requesting standardized dates for all sheep seasons (Aug 5 – Sep 20, resident; Aug 12 – Sep 20, non resident)
- Changes are proposed to address user conflicts and overcrowding
- Proposal does not stipulate if this included both general hunts and drawing hunts

Background

- This could have an impact on nonresident participation and guiding industry
 - Nonresident revenues are 70% of Game and Fish Fund
- This proposal would standardize all sheep seasons and does not take into account Unit specific management differences
- Board would need to determine if shortened subsistence seasons provided reasonable opportunity

Proposal 87

Convert all nonresident sheep seasons to drawing permit hunts and limit to 5 percent of total permits

- Recommendation: No Recommendation
- Public Proposal

Background

- This proposal would convert 18 non-resident general season sheep hunts to drawing with a 5% cap on permits
- This would have a significant impact on nonresident participation and revenues to the Fish and Game Fund (70% of all revenue come from nonresidents)
- Would have a significant impact on the guiding industry

Background

- Board Policy 2007-173-BOG: allocation of nonresident drawing permits will be determined on a case by case basis using 10 year historical data
- AS 16.05.255(d) only stipulates that moose, deer, elk, and caribou have resident preference
- Some sheep hunts have positive C&T finding so subsistence use may need to be considered prior to establishing nonresident hunts

Proposal 91

Nonresident next of kin sheep tags come out of the resident pool in Units where there are a limited number of nonresident sheep tags

- Recommendation: No Recommendation
- Public Proposal

Background

- Proposal would require that next of kin sheep applicants be included with resident allocations and establish a cap on next of kin permits
- Board policy 2007-173-BOG addresses all nonresident hunting, not just guided nonresidents
- This would increase complexity of regulations and application process

Proposal 92

Allow only the use of traps and snares for taking wolf and wolverine. Prohibit the use of firearms except for dispatching trapped animals

- Recommendation: Do Not Adopt
- Public Proposal

Background

- Proposal would prohibit use of firearms for taking wolves and wolverines under a trapping license, except to dispatch animals already in traps
- Firearms are currently legal method of take for all fur animals and furbearers, with a few exceptions (for beaver and fox)
- This change would prevent some opportunistic harvest
- Department manages populations based on available harvest and restricts methods of take when necessary on a case by case basis. Separate methods are not needed on a statewide basis to manage furbearers effectively.

Proposal 94

Prohibit the taking of wolf, fox, wolverine, or coyote during May, June and July on National Park Service lands

- Recommendation: Do Not Adopt
- Public Proposal

Background

- Currently no open trapping season anywhere in state during May – July. Units 9 & 10 are only areas open for trapping wolves during May and June. Unit 9 is only area with NPS lands.
- Wolf population for Unit 9 estimated at 300-500. Average harvest ~80.
- Harvest on NPS land is very small (average 2 per year)
- To date, no wolves have been trapped from April thru October.

Proposal 96

Open areas to archery hunting, if shotguns are allowed

- Recommendation: No Recommendation
- Public Proposal

Background

- Currently Portage Glacier Closed Area is only place allowing shotguns and not bow and arrow.
- Revised language if Board chooses:
 - 5 AAC 92.510(8)(A) the Portage Glacier Closed Area in Unit 7, which consists of Portage Creek drainages between the Anchorage - Seward Railroad and Placer Creek in Bear Valley, Portage Lake, the mouth of Byron Creek, Glacier Creek and Byron Glacier, is closed to hunting; however, migratory birds and small game may be hunted with shotguns and **bow and arrow** from September 1 through April 30;

Proposal 97

Prohibit the use of artificial light for taking game on all lands managed by the National Park Service

- Recommendation: No Recommendation
- Public Proposal

Background

- Generally the use of artificial light to take game is prohibited, except:
 - For furbearers under a trapping license Nov 1 – Mar 31 in several units
 - For tracking dogs used to retrieve game
 - To aid in tracking, recovery, and dispatching wounded animals
 - By C&T black bear hunting at dens in several units

Background

- Regulations have been adopted to increase safety of hunters in the dark and dispatch animals
- None of the regulations were adopted to increase predator harvest, as the proposal suggests

Proposal 98

Prohibit the use of hand held electronics in taking game

- Recommendation: No Recommendation
- Public Proposal

Background

- Many electronic devices are already prohibited by regulation (e.g., radios, cell phones, etc.)
- GPS (Global Positioning System) devices are used for navigation, relocating kill sites, camps, etc.
- This proposal would prohibit the use of rangefinders - helping hunters to determine distance to an animal and to make informed decisions about whether to shoot or don't shoot

Proposal 99

Hunters using a licensed transporter cannot harvest an animal on the same day being transported

- Recommendation: No Recommendation
- Public Proposal

Background

- The Board failed similar proposals in the Region II and IV meetings in March 2011
- This is already illegal for airplane based transporters
- This proposal would extend to include transported "day trips" with boats, ATVs, and snow machines

Proposal 100

Allow the use of laser sight, electronically-enhanced night vision scope, or artificial light for taking coyotes

- Recommendation: No Recommendation
- Public Proposal

Background

- Proposal requests removing the prohibition on several methods of take (laser sight, electronically enhanced night vision scope, and artificial light) statewide during the period from Oct 1 – Jun 30
- The use of artificial light is already allowed under trapping, Nov 1 – Mar 31 in Units 7 and 9-26
- Laser scopes (that project a red dot) could present an enforcement problem because they are not allowed for hunting other species and seasons overlap with coyote
- The current restrictions on the equipment are related to ethics of fair chase and to control potential overharvest

Proposal 101

Allow same day airborne taking of coyotes statewide

- Recommendation: Take No Action
- Public Proposal
- This currently allowed if hunter is >300 feet from aircraft – ensure compliance with Federal Airborne Hunting Act

Proposal 102

Prohibit the use of pack animals other than horses while hunting goat or sheep

- Recommendation: Amend and Adopt
- Department Proposal

Amended Language

- Original proposal language: "The use of pack stock other than horses is prohibited while sheep or goat hunting."
- Amended proposal language: "The use of pack stock other than horses, mules, and donkeys are prohibited while sheep or goat hunting."

Proposal 104

Prohibit the use of deer or elk urine for use in taking game

- Recommendation: Adopt
- Department Proposal
- Background information for this proposal was provided during staff reports

Proposal 105

Clarify the definition of wounded as it applies to the restrictions to bag limits

- Recommendation: No Recommendation
- Public Proposal

5 AAC 92.130 – Restrictions to bag limit

- (f) in Units 1-5 and Unit 8, a black or brown bear wounded by a person counts against that person's bag limit for the regulatory year in which the bear is taken. However, in Units 1-5 and Unit 8, a brown bear wounded by a person does not count against that person's bag limit established in 5 AAC 92.132. In this subsection, "wounded" means there is sign of blood or other sign that the bear has been hit by a hunting projectile.

Background

- Proposal asks that wounding be changed to "any animal mortally wounded and not recovered must be counted against the bag limit"
- Board first adopted regulation in 2005
- This regulation encourages ethical behavior related to wounding of wildlife
- The department uses education to help reduce wounding

Proposal 106

Count wounded muskox, bison, sheep and goat
that are not recovered as bag limit

- Recommendation: No Recommendations
- Public Proposal

Background

- This proposal requests that the wounding loss regulation discussed in the previous proposal be extended to include muskox, bison, sheep, and goats, statewide

Proposal 107

Eliminate the statewide bag limit for black bear

- Recommendation: Do Not Adopt
- Public Proposal

Background

- Currently a person is limited to the highest bag limit for that species in any one unit in the state
- This proposal would allow each unit bag limit to be additive, so the total bag limit would be the sum of all unit bag limits
- This would be fundamental change where bag limits for bears would be different from all other big game
- Statewide bag limit for bears serves to help distribute hunting effort. Small bag limits are generally used in areas where harvest pressure is high.

Proposal 108

Prohibit the harvest of cubs and sows
accompanied by cubs on National Park Service
lands

- Recommendation: Do Not Adopt
- Public Proposal

Background

- Regulation (5 AAC 92.260) allows resident harvest of sows and cubs Oct 15 – Apr 30 under customary and traditional use activities at den sites in Units 21(B), 21(C), 21(D), 24, 25(D) and portions of Unit 19(A) and 19(D)
- This proposal asserts the regulation was created to reduce black bear populations and increase moose and caribou harvest

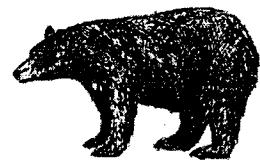
Background

- This change would invalidate long-standing cultural practices for harvest of black bears, which was recognized by the Board in 2008
- Black bears are abundant (2,000-4,000) and lightly harvested (50-180) in these Units, no conservation concerns
- Western Federal RAC and Eastern Interior RAC have endorsed this traditional harvest method

Proposal 124

Require trap identification for all Units on lands managed by the National Park Service

- Recommendation: No Recommendation
- Public Proposal



Black Bear Baiting

Proposals 114 – 123

Current Requirements

- Hunting black bears over bait is allowed in portions of all GMUs that have black bears.
- Hunters must be at least 16 years old to register a bait station.
- Successful one-time completion of ADF&G's bear baiting clinic is required prior to registering a bait station in units 6D, 7, 14A, 14B, 15, 16A and 20B.

Slide 2

- IBEP is required for those hunting with bow and arrow over bait in units 7, 14A, 14B, 15, 16 and 20B.
- Prior to placing bait in the field all bait stations must be registered with ADF&G. A physical description of the location is required at the time of registration.
 - In Units 1–5 a GPS point is required at the time of registration for each bait station.
- Bait stations may be registered 15 days before the start of the season, bait may not be placed in the field until the season is open.

Slide 3

- Bait stations may not be located within
 - $\frac{1}{4}$ mile of a publicly maintained road, trail or the Alaska Railroad.
 - 1 mile of a house or other permanent dwelling, business, school or developed campground or developed recreational facility.
- In addition to the above closures, ADF&G uses its discretionary authority to close areas open to bear baiting that would create user conflicts and safety concerns such as heavily fished river shorelines.

Slide 4

■ Bait may be placed at two bait stations at a time,
except:

- in the unit 19D predator control area bait may be placed at 10 bait stations at a time.
- in the unit 16 predator control area bait may be placed at 4 bait stations at a time.
- guides in units 6, 7, 9, 11-13, 14A, 14B, 15-17, 19-21, 24 and 25 may place bait at 10 stations at a time.
 - in the Unit 16 predator control area guides may place bait at 10 stations
 - AND
 - each assistant guide may place bait at 2 additional locations.

Residents, nonresidents and guides in the same unit follow different rules.

Slide 5

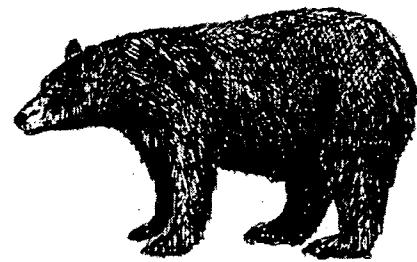
■ Licensed guides who personally accompany clients are the only ones allowed to take money, bartered goods or services for letting others use their bait stations.

■ All bait sites must be clearly marked with a sign identifying the site as a "Black Bear Bait Station" that includes the following:

- bear baiting permit number,
- hunting license number, and
- the hunting license numbers of all those hunting over that bait station.

■ All bait, litter, equipment and contaminated soil must be removed from the site when hunting is completed.

Slide 6



Proposals

Proposal 114

Allow black bears to be taken Same Day Airborne within ¼ mile of a bait station.

- 92.044 allows hunters in units 7, 9, 11, 13, 14A, 14B, and 15-17 who have been airborne to take a black bear at a bait station provided the hunter is 300 feet from the plane.
- 92.116 allows hunters in active predator control areas who have been airborne to take a black bear at a bait station provided the hunter is 300 feet from the plane.

Proposal 114

SDA at bait stations outside of predator control areas allowed in March of 2011 for Regions 2 and 4, done only after intensive review.

Proposal 144 will be in front of the board in March of 2012. At that time the board can determine if SDA liberalizations are feasible for units 12, 19-21, 24, 25, 26B and 26C.

Department recommendation: **Do Not Adopt**

slide 2

Proposal 118 – Highlights

- (b) removal of ADF&G's discretionary authority. Discretionary authority used to close certain areas to baiting (river corridors, 14C).
- 1(A) requires ADF&G to provide a metal locking tag and discusses sign placement. Last half is redundant with #7.
- 1(B) currently addressed using 92.052
- (4) clarify number of bait stations - ADF&G agrees, see amended language.
- (6) remove remuneration clause.
- (7) metal locking tag and signage.
- remove unit 16 specific regulations - ADF&G agrees, see amended language.
- written permission required for site use - hunter ethics
- statewide SDA at bait stations - slight amendment-addressed regionally.
- repeal IBEP certification.
- requests board consideration of future regulations.

Department recommendation: **Amend and Adopt**

Proposal 118 amendments

Clarify and modify 92.044 for hunting black bear with the use of bait.

- 92.044(4) Increase and align number of bait sites allowed by permit holders.
- 92.044(5)(B)(iv) Allow bait sites to be established within 1 mile of a seasonally occupied cabin if the cabin is on the opposite side of a major river system.

Slide 2

Proposal 118

- ~~92.044(6) Remove the requirement for clients to be personally accompanied at bait stations.~~

Ask the board to choose one of two options regarding guided activities at bait stations.

1. Leave the requirement for guides to personally accompany clients at bait sites as is. 92.990
2. Do away with the requirement for guides to personally accompany clients at bait sites. 08.54.680 and 08.54.610

Slide 3

Proposal 118

■ 92.044(2) Require one-time successful completion of ADF&G Bear Bait Clinic for all hunters registering a bait station.

- Free
- Available online
- Offered in many communities

■ Repeal 92.044(9). Ability of ADF&G to require a lower bag limit than exists for hunting in the area.

- ADF&G has never used this and does not see a need for it in the future.

Slide 4

Proposal 118

■ Repeal 92.044(11). Unit16 Predator Control Area specific regulation.

- If all other amendments are accepted this will no longer be necessary as the liberalizations allowed in 92.044(11) will be consistent with general bear baiting.

Department recommendation: **Amend and Adopt.**

Slide 5

Proposals 115, 116, and 117

Department recommendation: **Take No Action** based on action taken on proposal 118.

Proposal 119

Establish a section in regulation for black bear bait station permits and establish seasons for all of Alaska.

In 2004 the board created 92.044. Prior to that black bear baiting seasons were located in 92.085.

The move allowed ADF&G to adjust seasons and areas quickly to provide more opportunity to hunters.

Department recommendation: **Do Not Adopt**

Proposal 120

Eliminate black bear baiting as a method requiring a predator control permit in predator control areas.

Part ADF&G operating procedures, part regulatory.

Proposal 120

ADF&G is reworking the permitting system used to register bear bait stations. Actions taken on proposal 118 help streamline the permitting process.

Currently:

- bait permit conditions driven by location of bait site, residency, and general season vs predator control.

With new system:

- bait permit conditions will be driven by location only.

Slide 2

Proposal 120

Regulatory

Proposal states increased bag limits would fall under general hunting regulations then states unlimited take would still be under predator control.

All bag limit changes and legal animals need to stay with predator control. If baiters wish to harvest the following a predator control permit will be required:

- sows with cubs
- cubs
- more than the hunting bag limit (3 in most units).

Department recommendation: **Do Not Adopt**

Slide 3

Proposal 121

Prohibits black bear baiting on all National Park Service lands.

State management practices are compatible with Park goals, objectives and management plans. Reference the MMOU between ADF&G and the US National Park Service.

ADF&G is not aware of any conservation concerns with allowing the use of bait to take black bears as baiters follow established general season bag limits.

Department recommendation: **Do Not Adopt**

Proposal 122

Allow the use of scent lures for black bear baiting while floating.

- Currently allowed only at established bait stations.
- Proposal asks to allow this activity without a bait permit.
- Bait permits have strict distance and signage requirements, neither of which could be met from a moving boat.

Department recommendation: **Do Not Adopt**

Proposal 123

Department recommendation: **Take No Action**
based on action taken on proposal 122.



Options for ANS findings for furbearers

ADF&G Division of Subsistence

Alaska Board of Game

Anchorage, AK

January 2012

RC 2

1

Purpose

1. Provide background for board's consideration of proposals 14 and 19.
2. Provide options for revising current ANS findings for furbearer populations.
 - See written report: RC 2.

2

Background: Proposals 14 & 19

- Proposal 14: close nonresident trapping season for furbearers in GMUs 18, 22, 23, & 26A.
- Proposal 19: close nonresident hunting season for fur animals in GMUs 18, 22, 23, & 26A.
 - Justification linked to current finding that ANS is the “harvestable portion” [5 AAC 99.025(a)(13)].
- Department recommendation: no recommendation.
- At November 2011 meeting, board expanded scope to statewide (outside nonsubsistence areas) and deferred action to January 2012.

3

Furbearers

- Beaver (also fur animal)
- Coyote (also fur animal)
- Foxes (2 species; also fur animal)
- Lynx (also fur animal)
- Marmots (3 species)
- Martens (2 species)
- Mink
- Muskrat
- River otter
- Squirrels (3 species; also fur animal)
- Weasels (2 species)
- Wolf (also big game)
- Wolverine (also big game)

4

Board Responsibilities

- Identify populations or portions of populations of furbearers that are customarily and traditionally taken or used for subsistence [a C&T finding; AS 16.05.258(a)].
- For populations with C&T uses, determine “the amount of the harvestable portion that is reasonably necessary for subsistence uses” [an ANS finding; AS 16.05.258(b)].

5

Previous Board Considerations

- October 1997: review of C&T options for furbearers (Appendix A).
- November 2000: Positive C&T findings for all furbearer and fur animal populations outside of the nonsubsistence areas (Appendix B).
- November 2000: ANS findings for most furbearer populations at “the harvestable portion”.
- Specific ANS findings have been made for certain populations of wolves (see Table 1).

6

Furbearers: Background Information

- In November 2000, the board noted that furbearers pose particular complexities for establishing a single ANS because there are 4 types of common subsistence uses of furbearers:
 1. Food (certain species)
 2. Clothing
 3. Handicrafts that are sold
 4. Fur sales to fur buyers (customary trade)

7

Furbearers: background information

- The board recognized that furbearer harvests vary substantially with fur prices.
- Therefore, the board determined that amounts of specific uses could, in the future, be established on a case-by-case basis when specific allocation issues required it.

8

Furbearers: Background Information

- The board also found that “furbearers and fur animals, in general, tend to be the focus of these uses, rather than users focusing on individual species or populations” [5 AAC 99.025(a)(13)].
- “Given this finding, the board also finds that effort on any given population varies according to its harvestable surplus” [5 AAC 99.025(a)(13)].
- Meeting records indicate this finding was consistent with the presumption that existing regulations (November 2000) provided reasonable opportunities for subsistence until proposals were received suggesting otherwise.

9

Methods

- Compile harvest data for furbearers based on sealing records for 2000 – 2010, for the portion of the state outside the nonsubsistence areas.
- Determine average number and percentage of total harvest over this period by residency category:
 - local Alaska residents, other Alaska residents (total = “resident harvest”), and nonresidents.
- Based on these data, develop ANS options.

10

Sealing Requirements

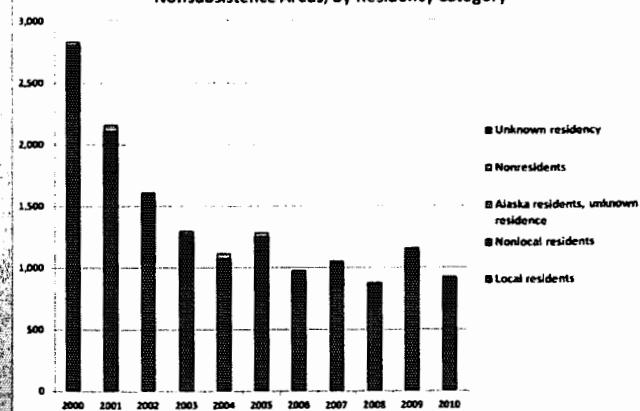
- Beavers: Units 1-11, 13-15, 17 only.
- Lynx: all units.
- Martens: Units 1-7, 14-16 only.
- River otters: all units.
- Wolves: all units.
- Wolverine: all units.

- Coyotes, foxes, marmots, mink, muskrats, squirrels, weasels:
 - No sealing or other reporting requirements.

11

Beavers

Reported Harvests of Beaver, 2000 - 2010, Outside Nonsubsistence Areas, by Residency Category

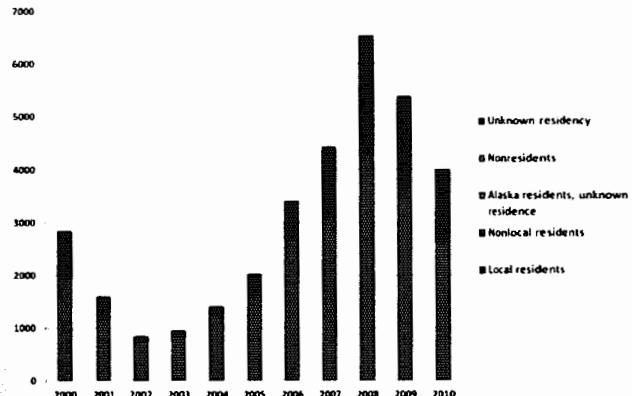


- Annual mean= 1,393
- Range = 883 to 2,836
- 98.6% of mean harvest by Alaska residents
- 73.4% by local residents
- 1.4% by nonresidents

12

Lynx

Reported Harvests of Lynx, 2000 - 2010, Outside Nonsubsistence Areas, by Residency Category

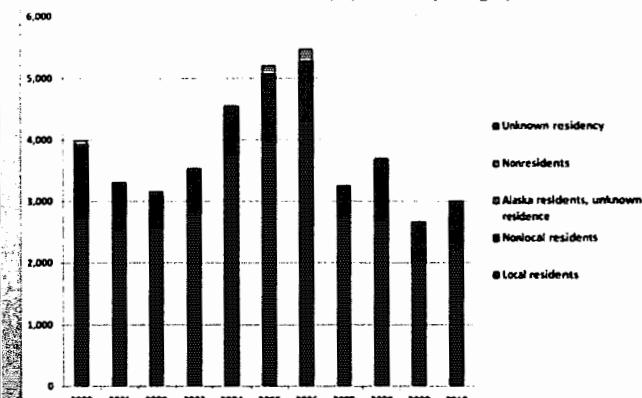


- Annual mean= 3,043
- Range = 848 to 6,524
- 99.9% of mean harvest by Alaska residents
- 70.5% by local residents
- 0.1% by nonresidents

13

Martens

Reported Harvests of Marten, 2000 - 2010, Outside Nonsubsistence Areas, by Residency Category

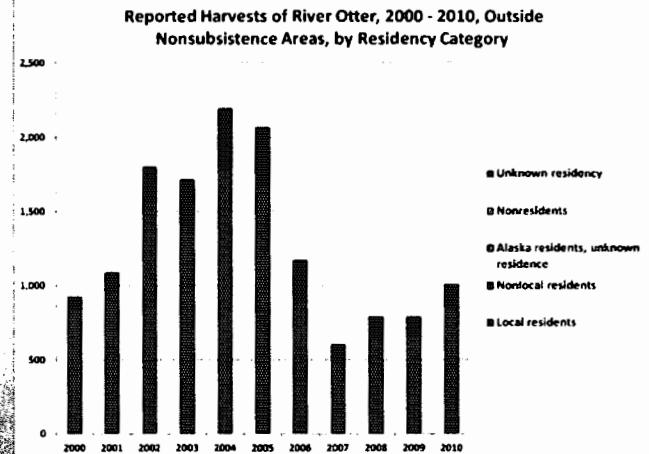


- Annual mean= 3,808
- Range = 2,677 to 5,470
- 98.8% of mean harvest by Alaska residents
- 76.5% by local residents
- 1.2% by nonresidents

14

River otters

Reported Harvests of River Otter, 2000 - 2010, Outside Nonsubsistence Areas, by Residency Category

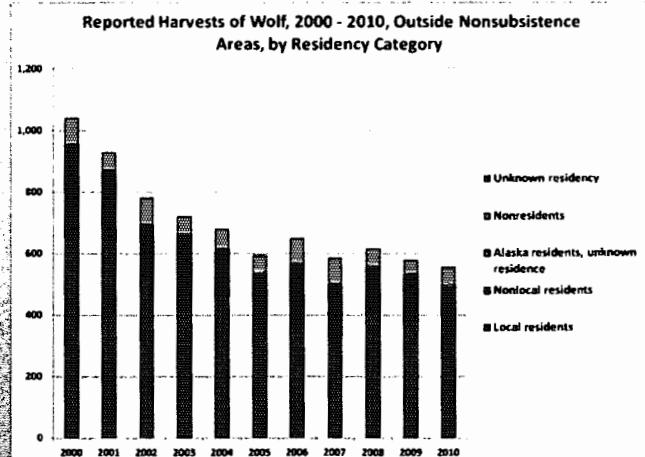


- Annual mean= 1,290
- Range = 611 to 2,199
- 99.6% of mean harvest by Alaska residents
- 81.9% by local residents
- 0.4% by nonresidents

15

Wolves

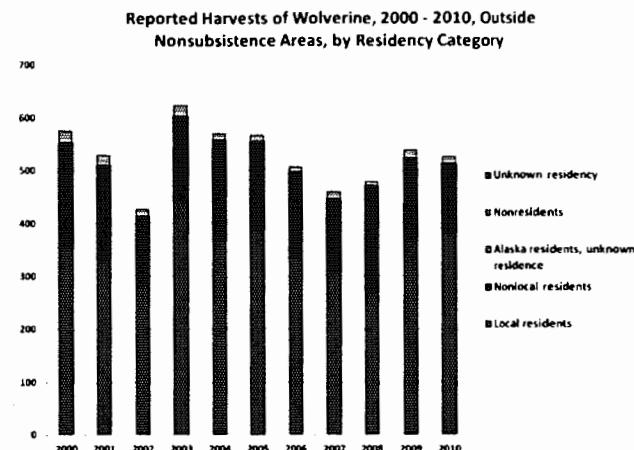
Reported Harvests of Wolf, 2000 - 2010, Outside Nonsubsistence Areas, by Residency Category



- Annual mean= 704
- Range = 557 to 1,042
- 90.9% of mean harvest by Alaska residents
- 64.0% by local residents
- 9.1% by nonresidents

16

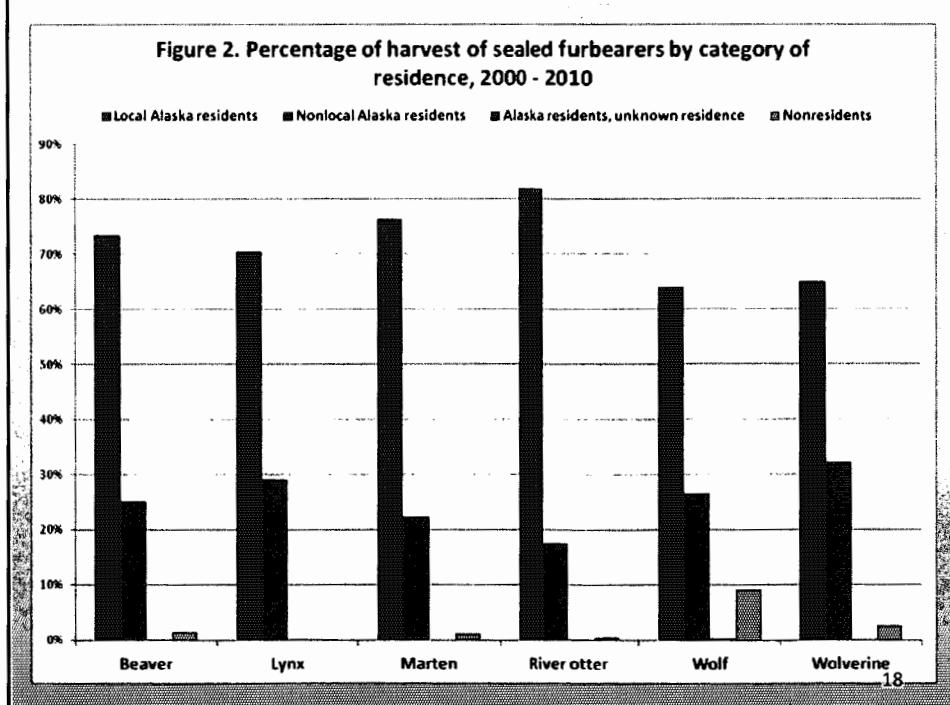
Wolverines



- Annual mean= 529
- Range = 429 to 626
- 97.3% of mean harvest by Alaska residents
- 65.0% by local residents
- 2.7% by nonresidents

17

Figure 2. Percentage of harvest of sealed furbearers by category of residence, 2000 - 2010



18

ANS Options

- **Option 1:** Take no action on present ANS findings.
 - Result: except for certain populations of wolves, furbearer ANS = allowable harvest.
 - May require closing nonresident trapping season and fur animal hunting seasons in most areas outside the nonsubsistence areas.

19

ANS Options

- **Option 2:** ANS as percentage of harvest by Alaska residents.
 - **Option 2A:** use average % for all furbearers combined = 99% of the allowable harvest.
 - **Option 2B:** separate % for each species; use combined average for species with no sealing data = wolves, 91% of allowable harvest; wolverines, 97% of allowable harvest; all other species, 99% of the allowable harvest.

20

ANS Options

- **Option 3:** statewide range for each species.
 - Can only be done for 4 species with statewide sealing data:
 - Lynx: 800 – 6,500
 - River otters: 600 – 2,200
 - Wolves: 500 – 1,000 (with exceptions)
 - Wolverines: 400 – 600
 - For all other species:
 - 1) Adopt Option 2 (99% of allowable harvest), OR
 - 2) Adopt Option 1 (100% of allowable harvest), OR
 - 3) Make no finding

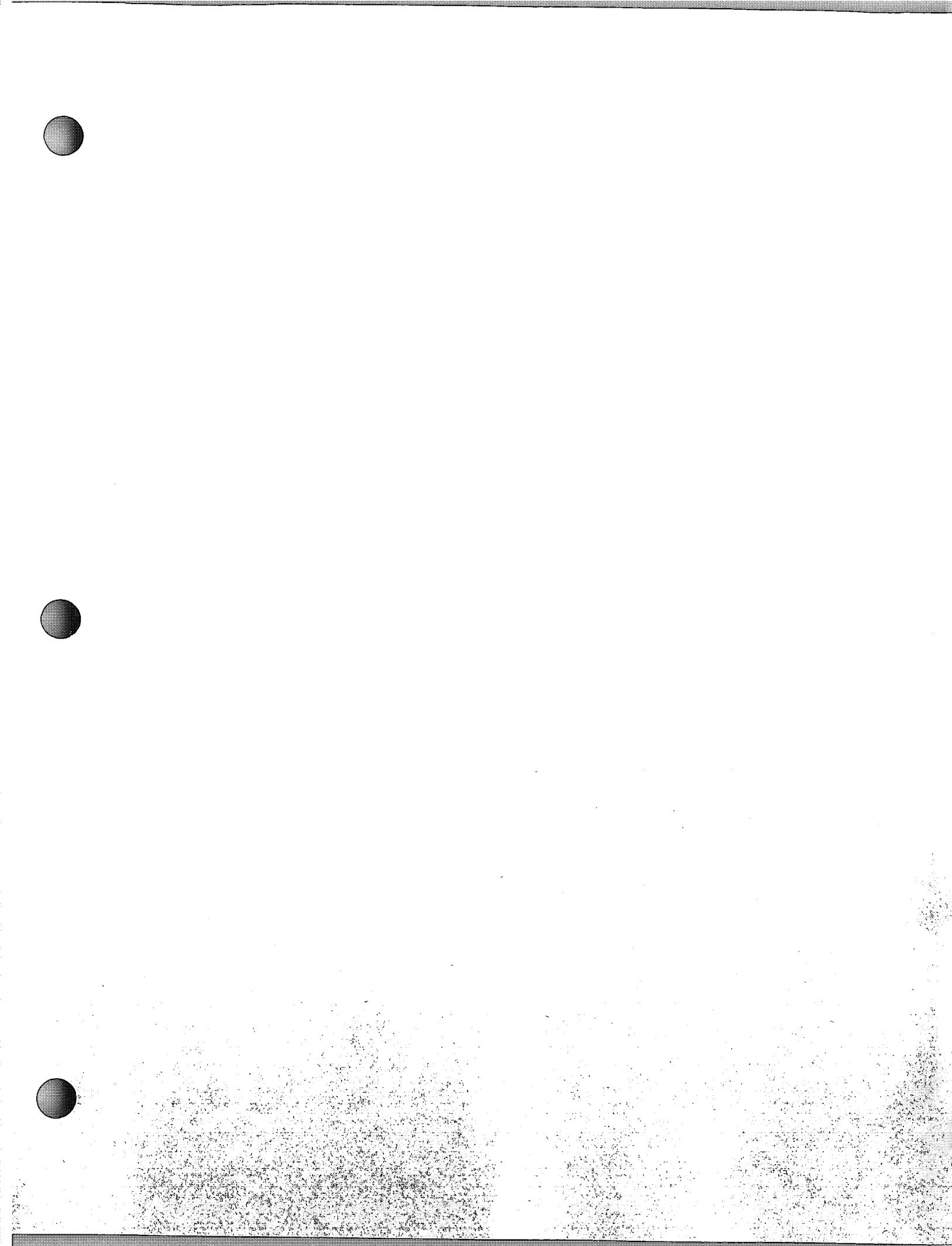
21

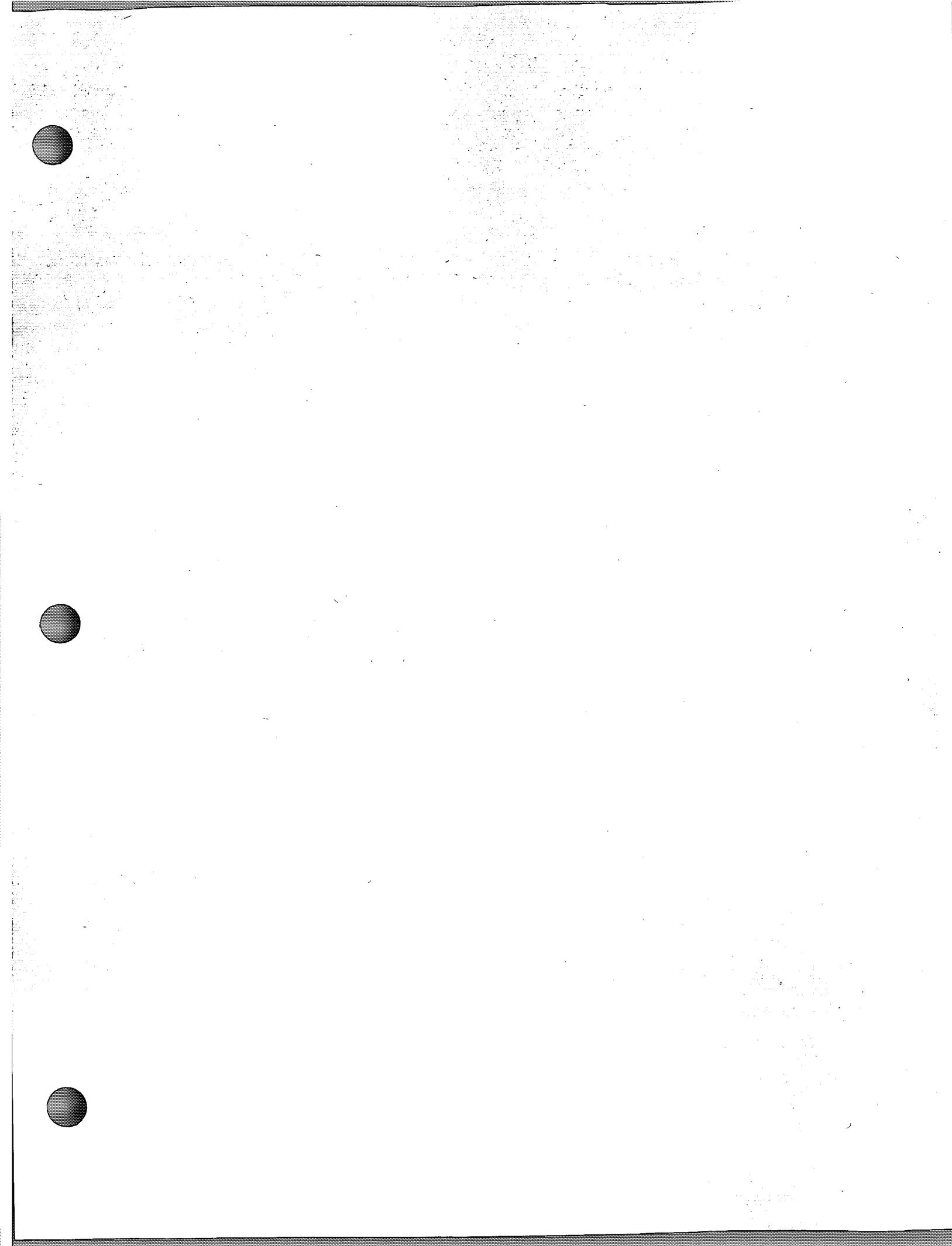
ANS Options

- **Option 4:** Unit-by-unit ANS ranges.
 - Additional data analysis would be necessary to implement this option.
 - Potential for hundreds of separate findings.
 - Best to apply only in cases when conservation or allocation issues arise.

22

Questions?





Background

- Trap and snare identification is required in some areas, largely associated with trapping near roads, trails and other public access points
- Trap marking can make enforcement easier
- In much of the state this requirement is unnecessary

Proposal 125

Require a 72 hour trap check for all traps and snares set on National Park Service lands

- Recommendation: No Recommendation
- Public Proposal

Background

- Trap check timing is currently only required near Gustavus
- Due to weather and length of many trap lines in Interior it is difficult to follow specific schedules for trap checks
- Trappers generally follow "best practices" as a code of ethics for trapping
- Having multiple regulations based on land ownership would be confusing and unnecessary

Proposal 126

Prohibit the trapping of black bears in all National Park Service managed lands

- Recommendation: Take No Action
- Public Department Proposal
- Trapping of black bears is currently prohibited statewide. Board is scheduled to consider trapping at for selected areas at March 2012 meeting.

Proposal 127

Prohibit the taking of a black bear by trap or snare

- Recommendation: Do Not Adopt
- Public Proposal

Background

- The proposal cites concerns for safety, humane methods, and inefficiency for requesting the prohibition
- Regulations currently only allow for bear snaring in portions of Units 16(B) and 19(D) and under specific permit conditions
 - Department approved training
 - 16 years of age
 - Report animals taken within 48 hours
 - Check snares daily
 - Notify department immediately of incidental bears caught

Proposal 128

Establish a tag and fee to allow trappers to retain incidental catch

- Recommendation: No Recommendation
- Public Proposal

Background

- Proposal requests that trappers be allowed to purchase (\$10) three "incidental catch" tags per year from the department to retain incidentally caught animals
- Accommodating this would require changes to 5 AAC 92.220(h) – a game animal taken in violation of AS 16 or a regulation adopted under AS 16 is the property of the state
- Animals trapped out of season are violation of Chapter 84 – Trapping Seasons
- Also, 5 AAC 92.220 and 5 AAC 92.140(d) requires that such animals be salvaged and turned over to the state
- The Board does not have the authority to establish fees