ALASKA BOARD OF GAME
FAIRBANKS, ALASKA
February 29 – March 10, 2008

ACTION NO. SUBJECT

REGION III—Region-wide

_____ 85 Open resident sheep seasons earlier than nonresident seasons in Region III.

_____ 83 Allow the use of scent lures for black bear baiting without requiring a permit.

_____ 137 Reauthorize the current resident tag fee exemptions for brown bear in Region III.

_____ 82 Simplify and align beaver seasons and methods in Region III.

_____ 17 Eliminate lynx tracking strategy in Unit 20, establish permanent trapping season.

_____ 84 Establish preference point system for drawing hunts in Region III.

GMU's 25A, 25B, 25D, 26B, 26C—NE Alaska Area

_____ 81 Increase caribou bag limit in Dalton Highway Corridor.

_____ 71 Extend the brown bear season in Unit 26B.

_____ 72 Extend the brown bear season in Unit 26B, increase number of permits.

_____ 73 Open registration permit hunt for moose in Unit 26C.

_____ 69 Clarify the boundary for the Tier II moose hunt in Unit 25D west.

_____ 70 Establish drawing permit hunt for sheep in Unit 25A.

_____ 68 Modify bag limit to any bear, liberalize methods and means in Unit 25D.

GMU 19, 21A, 21E—McGrath Area

_____ 10 Open portion of closed area in Unit 19A to moose hunting with antler restrictions.

_____ 14 Eliminate antler restrictions for resident hunters in Unit 19B.

_____ 12 Eliminate antler restrictions for subsistence hunters in Unit 19B.

_____ 13 Close moose season in portion of Unit 19B in the Holitna-Hoholitna CUA.

_____ 87 Repeal the 40 hp restriction on the Holitna-Hoholitna Rivers in Units 19A and B.

_____ 102 Terminate predator control plan in Unit 19A.

_____ 101 Reauthorize predator control plan in Unit 19A for 6 more years.

_____ 15 Establish December moose hunt in portion of Unit 19D.

_____ 88 Modify boundaries of the Upper Kuskokwim CUA in Unit 19D.

_____ 106 Terminate predator control plan in Unit 19D.

_____ 104 Reauthorize predator control plan in Unit 19D for 5 more years

_____ 99 Allow trapping of bears in portion of Unit 19D (EMMA) by permit.

_____ 105 Allow trapping of bears in portion of Unit 19D (EMMA) by permit.

_____ 8 Establish trapping season for black bear in Unit 19.

_____ 100 Allow taking of black bears in dens, any bear, in Unit 19.

_____ 103 Allow taking of wolves in dens in Unit 19.

_____ 11 Close nonresident caribou season in Units 19A and B.

_____ 47 Shorten moose season, establish antler restrictions in Unit 21A.

_____ 57 Establish moose drawing permit hunt in Unit 21A.

_____ 58 Require nonresidents to have a guide for moose in Units 21A, D, and E.

_____ 48 Require hunter orientation for nonresident moose hunters in Units 21A and 21E.

_____ 54 Close nonresident moose and caribou season near the Dishna and Innoko Rivers in Unit 21A.

_____ 112 Implement new predator control plan in Unit 21E.

_____ 52 Eliminate nonresident tag requirement for wolf, increase bag limit.

_____ 9 Open brown bear season earlier in Units 19B and C.

_____ 56 Increase black bear bag limit to 5 per year in Units 21A and E.

_____ 53 Establish no closed season, no bag limit for beaver in Unit 21A.

_____ 16 Lengthen wolverine hunting season to May 15 in Unit 19.

GMU 21B, 21C, 21D, 24A, 24B, 24C, 24D —Galena Area

_____ 50 Establish late fall moose hunt on native lands in Unit 21B.

_____ 49 Establish winter moose hunt on native lands in Unit 21B.

_____ 55 Allocate nonresident moose permits between guided and nonguided in Unit 21B.

_____ 51 Open March moose season in Unit 21D by emergency order.

_____ 63 Shift moose season later in 24C and D, starting Sept. 1.

_____ 80 Extend moose season by 5 days to Sept. 25, in 21D and 24, Koyukuk CUA.

_____ 65 Shift moose registration hunt later in 24D, starting Sept. 1, establish late Sept. spike-fork.

_____ 66 Shift moose registration hunt later in 24D, starting Sept. 1.

_____ 67 Open antlerless moose hunt in 24D.

_____ 62 Establish winter moose hunt by emergency order on native lands in 24C and 24D.

_____ 94 Eliminate aircraft restrictions in 21D and 24, Koyukuk CUA.

_____ 64 Require antler destruction for all moose hunts in 24C.

_____ 59 Establish late fall moose hunt on native lands in Unit 24B.

_____ 60 Restrict permit winners to only hunt in the permit area in Unit 24A.

_____ 95 Establish permit hunt allowing motorized vehicles in the Dalton Highway Corridor.

_____ 96 Allow use of highway vehicles on existing roads and trails in the Dalton Highway Corridor.

_____ 61 Establish archery hunt for wolf in Unit 24, the Dalton Highway Corridor.

_____ 46 Increase brown bear bag limit to 2 per year in Units 21A and 21D.

_____ 75 Establish black bear trapping season in Units 21 and 24.

_____ 78 Allow taking of black bears in dens, any bear bag limit in Units 21 and 24.

_____ 79 Allow taking of black bears in dens, use of artificial light and any bear bag limit in Units 21 and 24.

GMU's 12, 20E—Tok Area

_____ 2 Modify moose antler restrictions in Unit 12.

_____ 1 Reopen caribou hunt in Unit 12.

_____ 21 Shift nonresident caribou season to open after resident season in Unit 20E.

_____ 37 Clarify the boundary for the Mt. Harper sheep drawing permit hunt.

_____ 76 Separate TMA sheep drawing hunt into two seasons.

_____ 77 Allocate portion of TMA nonresident permits to hunters using second degree kindred.

_____ 41 Eliminate in-unit sealing requirement for brown bear taken in Unit 20E.

_____ 40 Eliminate in-unit sealing requirement for brown bear taken in Unit 20E.

_____ 93 Clarify trails with motorized restrictions in the Ladue River Controlled Use Area.

_____ 113 Terminate control plan in Units 20E and 25C.

_____ 107 Modify bear control methods and means.

_____ 111 Expand bear control area in Unit 20E.

_____ 74 Modify lynx trapping bag limit in November season.

GMU 20D- Delta Junction Area

_____ 135 Reauthorize and modify antlerless moose seasons in 20D.

_____ 35 Extend moose season in portion of Unit 20D.

_____ 22 Increase allowable harvest of Macomb caribou.

_____ 43 Establish same-day airboat prohibition for hunting.

_____ 44 Establish same-day motorized land vehicle prohibition for hunting.

_____ 45 Prohibit big game hunting in city limits of Delta Junction.

GMU's 20A, 20B, 20C, 20F, 25C—Fairbanks Area

_____ 130 Reauthorize antlerless moose seasons in Unit 20A.

_____ 131 Reauthorize antlerless moose seasons in Unit 20B.

_____ 24 Reinstate Tier II hunt in Unit 20B, Minto Flats Management Area.

_____ 25 Eliminate the antlerless moose hunts in Units 20A and 20B.

_____ 27 Eliminate the antlerless moose hunts in Units 20A and 20B.

_____ 28 Eliminate the antlerless moose hunts in Units 20A and 20B.

_____ 36 Eliminate the antlerless moose hunts in Unit 20.

_____ 19 Shift moose season in Unit 20 to open later.

_____ 29 Shift moose season in Unit 20B to open later.

_____ 30 Open late season moose archery hunt in Unit 20B.

_____ 39 Extend archery season and area for moose in Unit 20B.

_____ 31 Shift moose season in Unit 20B, FMA, to open later.

_____ 32 Only allow archery hunt in Unit 20B, FMA.

_____ 33 Restrict moose permit winners to hunt only in FMA.

_____ 34 Shift moose season in Unit 20C to open later.

_____ 23 Eliminate the spike-fork moose season in Unit 20.

_____ 26 Modify moose antler restrictions to 36"/3 brow tines.

_____ 108 Reactivate predator control plan in Unit 20A to increase moose calf survival.

_____ 109 Increase IM population objective for moose to 12,000–14,000 in Unit 20A.

_____ 110 Implement predator control plan for Delta caribou herd in Unit 20A.

_____ 20 Establish brown bear baiting season in Unit 20B.

_____ 42 Establish brown bear baiting season in Unit 20B.

_____ 89 Shorten season for motorized restrictions in the Wood River CUA.

_____ 90 Eliminate the Wood River CUA.

_____ 38 Create new CUA in Unit 20A.

_____ 92 Reinstate the Nenana CUA.

_____ 91 Create new airboat restrictions on the Kantishna River in Unit 20C.

_____ 18 Shorten lynx season in Unit 20F by opening Dec. 1.

REGION I--SOUTHEAST

_____ 114 Reauthorize the antlerless moose hunt in the Berner's Bay portion of Unit 1C.

_____ 115 Reauthorize the antlerless moose hunt in the Gustavus portion of Unit 1C.

_____ 116 Reauthorize the antlerless moose hunt in Unit 5A, Nunatak Bench.

REGION II—SOUTHCENTRAL

_____ 117 Reauthorize the antlerless moose hunt in Unit 6A.

_____ 118 Reauthorize the antlerless moose hunt in Unit 6B.

_____ 119 Reauthorize the antlerless moose hunt in Unit 6C.

_____ 120 Reauthorize the antlerless moose season in Unit 14A.

_____ 121 Reauthorize antlerless moose season in Placer River drainage; Unit 7 and 14C.

_____ 122 Reauthorize antlerless moose hunt in the Fort Richardson MA in Unit 14C.

_____ 123 Reauthorize antlerless moose hunt in the Anchorage MA in Unit 14C.

_____ 125 Reauthorize the antlerless season on Elmendorf Air Force Base in Unit 14C.

_____ 126 Reauthorize the antlerless portion of the drawing permit in the upper Ship Creek drainage.

_____ 124 Reauthorize the antlerless moose hunt in the Birchwood MA; remainder of 14C.

_____ 127 Reauthorize antlerless moose season in portion of 15A, the Skilak Loop MA.

_____ 128 Reauthorize antlerless moose season in a portion of Unit 15C.

_____ 129 Reauthorize the antlerless moose season on Kalgin Island in Unit 16B.

_____ 136 Reauthorize the brown bear tag fee exemptions in Region II.

_____ 3 Shorten black bear season in Unit 16B, near Wolverine Creek.

_____ 97 Establish predator control plan in Unit 9.

_____ 98 Establish predator control plan in Units 17B and 17C.

_____ A Deferred proposal 59: Trapping restrictions in Chugach State Park.

_____ 86 Establish a wildlife refuge near Tangle Lakes in Unit 13.

REGION V--ARCTIC

_____ 138 Reauthorize the brown bear tag fee exemptions in Region V.

_____ 132 Reauthorize the antlerless moose hunt in 22C and 22D.

_____ 133 Reauthorize the antlerless moose hunt in Unit 23.

_____ 134 Reauthorize the antlerless moose hunt in Unit 26A.

_____ 4 Close the nonresident caribou season; require resident permits in Unit 18.

_____ 5 Close the nonresident caribou season in Unit 18.

_____ 6 Split the caribou season, Aug. 1–Oct. 15 and Feb. 1–Mar. 15, in Unit 18.

_____ 7 Reconsider the amount necessary for subsistence for moose in Unit 18.

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B.	Wood Bison Project Update
C.	Statewide Harvest for Intensive Management Areas
D.	Format for Preparing an Intensive Management Plan
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DRAFT RECOMMENDATIONS

BOARD OF GAME PROPOSALS

March 2008

Alaska Department of Fish & Game

Division of Wildlife Conservation

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.

PROPOSAL 1

EFFECT OF THE PROPOSAL: Reinstate the fall registration hunt for Chisana Caribou bulls in Unit 12, with a Sept. 1–25 season.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The Chisana Caribou Herd (CCH) population trend, bull:cow ratio and recruitment may be adequate to support a small bull harvest. During 2003–2007, the CCH population trend was stable (706–766 caribou), with an average fall composition of 21 calves:100 cows and 42 bulls:100 cows. However, this was preceded by 14 years of declining population, low calf:cow and bull:cow ratios and an age structure skewed toward older animals. We believe that on-going research should be completed and that coordination involving user groups and government agencies in Alaska and Canada should occur before a hunt is reinstated for this international herd.

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PROPOSAL 2

EFFECT OF THE PROPOSAL: Eliminate or modify moose antler restrictions in Unit 12 in the Tok River drainage upstream from the Tok Cutoff Bridge.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The department recommends retaining the current antler restriction to allow the bull:cow ratio to increase in northwestern Unit 12. Concerns about declining bull:cow ratios (22 bulls:100 cows in fall 2005) potentially falling below 20 bulls:100 cows and fewer bulls observed by hunters in the Tok River drainage upstream from the Tok Cutoff bridge resulted in the moose season being modified in fall 2006. The bag limit was changed to one bull with spike-fork or 50-inch antlers or antlers with 4 or more brow tines on at least one side for residents as well as nonresidents. This proposal seeks to relax the antler restrictions by allowing harvest of bulls with 3 brow tines, and changing the season dates from August 24–28 and Sept. 8–17 to Sept. 15–30. Each of these changes would likely decrease the bull:cow ratio by significantly increasing bull harvest, especially of 2- to 4-year-olds, which often have 3 brow tines.

Antler restrictions in the upper Tok River drainage did not reduce harvest below amounts necessary for subsistence use in Unit 12. The moose population is estimated at 2900–5100 moose (0.6–0.7 moose/mi^2), with a harvestable surplus of 144–168 bulls, well above the 60–70 moose determined necessary for subsistence. Harvest averaged 125 bulls (99–137) annually during the 2001–2005 seasons and remained relatively stable at 117 in 2006 and 113 in 2007.

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PROPOSAL 3

EFFECT OF THE PROPOSAL: This proposal would close the black bear hunting season and align the closure with brown bears in the Wolverine Creek area in Redoubt Bay Critical Habitat Area to allow for less conflict with bear viewers and anglers.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: An Agenda Change Request was submitted by the Wolverine Creek Management Committee requesting a closure of black bear hunting around a popular bear viewing area in Unit 16B (see issue statement for background information). The Board created this closed area for brown bear hunting in 2003 after considering alternatives (e.g., different buffers and season dates for the area) presented by the department to address potential conflicts with anglers, bear viewers, and hunters in the Wolverine Creek area of Redoubt Bay. Although this is an allocation issue, the Department supports the closure requested by the Wolverine Creek Management Committee to reduce conflicts between hunters and the many sport fishers and wildlife viewers that concentrate at this small area.

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PROPOSAL 4

EFFECT OF THE PROPOSAL: This proposal would close the nonresident caribou season in GMU 18 and require a Tier I subsistence registration permit to hunt Mulchatna caribou.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue to be determined by the board.

During March 2007, the board adopted uniform regulations for resident and nonresident hunting in the Mulchatna Caribou Herd and applied them across the range of the herd in Game Management Units 9, 17, 18 and 19. Pursuant to the subsistence procedures, during March 2007, the board reviewed the amount reasonably necessary for subsistence (ANS) finding for Mulchatna caribou, the harvestable surplus estimates, and discussed reasonable opportunity for subsistence uses before adopting the current regulations. The department is concerned that changing the seasons and bag limits now will not allow time to assess the effects of the regulatory changes applied during the current regulatory year. No new information has been gathered that requires immediate action by the board.

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PROPOSAL 5

EFFECT OF THE PROPOSAL: This proposal would close nonresident caribou season in GMU 18.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See analysis and recommendation for proposal 4.

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PROPOSAL 6

EFFECT OF THE PROPOSAL: This proposal would split the caribou season in Unit 18 into two seasons, one from Aug 1 - Oct 15 and the other from Feb 1 - Mar 15.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: During March 2007, the board adopted uniform regulations for the Mulchatna Caribou Herd and applied them across the range of the herd in Game Management Units 9, 17, 18 and 19. We recommend no changes to the seasons and bag limits to allow the department time to assess the effects of the regulatory changes applied during the current regulatory year. No new information has been gathered since March 2007 that requires additional consideration by the board.

The board made a positive customary and traditional use determination for Mulchatna caribou prior to 1992 and determined the amount reasonably necessary for subsistence for Mulchatna caribou in Units 9A, 9B, 17, and 19A to be 2,100 – 2,400.

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PROPOSAL 7

EFFECT OF THE PROPOSAL: Revise the amount necessary for subsistence (ANS) for moose in GMU 18.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue to be determined by the board. The board made a positive customary and traditional use finding for moose in Unit 18 in 1987 and subsequently in 1992 determined the amount reasonably necessary for subsistence to be 80-100 moose. In considering this proposal, the board will need to evaluate the harvestable surplus and recent harvest history for moose in Unit 18. Additionally, the board will need to determine whether the proposed regulation would provide a reasonable opportunity for subsistence use and whether it would be necessary to reduce or eliminate other uses to provide a reasonable opportunity for subsistence use.

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PROPOSAL 8

EFFECT OF THE PROPOSAL: Establish a trapping season for black bears in Unit 19.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The Department does not support trapping of black bears by the general public. The potential for capture of cubs or females with cubs and non-target species such as brown bears would be high. Over the past few years, liberalized regulations for the take of black bears in Unit 19 have not significantly increased bear harvest. Participant interest has been relatively limited and the

department does not recommend further liberalized methods that are nonselective and that do not have broad public support, even under the auspices of predator control.
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PROPOSAL 9

EFFECT OF THE PROPOSAL: Extend the brown bear season in Units 19B and 19C by opening the season Aug. 10 instead of Sept. 1.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: Units 19B and 19C are managed to provide for the opportunity to take large grizzlies. Sustainable harvest for the area is thought to be 6% of the population. Average harvest over the past 10 years has been approximately 9% in 19B and 6% in unit 19C. While harvest has declined in 19C over the last 5 years, harvest in both units is highest in the fall and should not be increased at this time. An Aug. 10 opening date would coincide with sheep seasons and there would likely be increased harvest from hunters on multiple species hunts. Finally, hunters in Units 19B and 19C typically seek trophy animals and hide quality in August is generally poor.
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PROPOSAL 10

EFFECT OF THE PROPOSAL: Open moose hunting for bulls with spike-fork or 50" antlers, or 4 or more brow tines on each side within a portion of Unit 19A that is currently closed: the Holitna River upstream of Titnuk Creek, including Titnuk Creek and the Hoholitna River upstream of Little Diamond Mountain.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: Moose hunting in this portion of Unit 19A is closed to promote recovery of the moose population and we are currently managing wolf predation through aerial wolf control. However, this recovery is not complete, and even an antler-restricted moose harvest at this time would be inconsistent with the conservative harvest strategy recommended in the Central Kuskokwim Moose Management Plan. We recommend that no changes be made to the current regulations. The moose population in Unit 19A may be beginning to recover as evidenced by improved numbers of calves and yearlings found during a fall 2007 composition survey (12% yearling bulls, 22% twins, and 45 calves:100 cows). A population estimate is scheduled in late March 2008 to continue monitoring population status and trend.
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PROPOSAL 11

EFFECT OF THE PROPOSAL: Close the nonresident caribou season in Units 19A and 19B.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue to be determined by the board. During March 2007, the board adopted uniform regulations for the Mulchatna Caribou Herd and applied them across the range of the herd in Game Management Units 9, 17, 18 and 19. In recent years harvest has declined with the decline in the Mulchatna herd. Few caribou were taken in Units 19A and 19B during the 2006-2007 season. Nonresidents harvested 4 caribou in Unit 19A and 31 in Unit 19B, and residents harvested 14 in Unit 19A and 24 in Unit 19B.
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PROPOSAL 12

EFFECT OF THE PROPOSAL: Allow subsistence hunters in Unit 19B to take any antlered moose during Aug. 25−Sept. 25.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See analysis and recommendation for proposal 14.
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EFFECT OF THE PROPOSAL: Close moose hunting in Unit 19B within the Holitna–Hoholitna Controlled Use Area (CUA).

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The Holitna–Hoholitna CUA was established by the Board to provide a reasonable opportunity for subsistence uses. It applies to the waterways only, and this proposal does not define a land area where hunting would be closed. Therefore, our comments address a 4-mile wide corridor similar to the adjacent nonresident closed area. Although moose densities are low in this area, the current antler restrictions provide sustainable hunting opportunity consistent with the Central Kuskokwim Moose Management Plan. When the current seasons and bag limits were adopted, the moose density in adjacent Unit 19A was low and falling (from 1.25 moose/mi^2 in 1998 to 0.27 moose/mi^2 in 2005). In Unit 19B, densities were similar, but because fall 2005 composition data in Unit 19B showed adequate bull:cow ratios (66 bulls:100 cows), a hunt with antler restrictions was allowed as a conservative way to provide some hunting opportunity for both residents and nonresidents consistent with the Central Kuskokwim Moose Management Plan.

We recognize the potential enforcement issues raised, and the Alaska Wildlife Troopers intend to patrol as in previous years, with additional emphasis when warranted. However, any abuses have not prevented the beginnings of a moose population recovery in Unit 19A as indicated by improved numbers of calves and yearlings. Fall 2007 composition surveys included 12% yearling bulls, 22% twins, and 45 calves:100 cows. A density estimate is scheduled in late March 2008 to continue monitoring population status and trend.

The department recognizes this proposal also has an allocation element and is neutral on this aspect of the proposal. This proposal also has subsistence implications because closing the moose season within the Holitna-Hoholitna CUA closes an area open to residents who access the

Holitna–Hoholitna CUA primarily by boat but does not change moose seasons outside the CUA. Most of Unit 19B, away from the river and outside the Holitna–Hoholitna CUA is open to residents and nonresidents who access this area primarily by aircraft. Before the CUA could be closed to subsistence moose hunting, the board would have to consider whether reasonable opportunities for subsistence uses would still be provided without restricting nonsubsistence opportunities in Unit 19B.

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PROPOSAL 14

EFFECT OF THE PROPOSAL: Allow resident moose hunters in Unit 19B to take any antlered bull and extend the moose season 5 days to Sept 25.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The current Unit 19B hunt with antler restrictions is a conservative way to provide some hunting opportunity for both residents and nonresidents, and is consistent with the Central Kuskokwim Moose Management Plan. When the current seasons and bag limits were adopted, the moose density in adjacent Unit 19A was low and falling (1.25 moose/ mi^2 in 1998 to 0.27 moose/mi^2 in 2005). In Unit 19B, densities were considered to be similar, but because fall 2005 composition data in Unit 19B showed that bull:cow ratios were adequate (66 bulls:100 cows), a hunt with antler restrictions was considered a conservative way to provide some hunting opportunity for both residents and nonresidents consistent with the management strategies of the Central Kuskokwim Moose Management Plan. The moose season for resident hunters in Unit 19B is Sept 1–20. The nonresident moose season in Unit 19B outside the nonresident closed area (a 4 mile wide corridor along several rivers) is Sept 5−20. The bag limit for both residents and nonresidents is one bull with 50" antlers or with 4 or more brow tines on at least one side.

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PROPOSAL 15

EFFECT OF THE PROPOSAL: Establish a moose season in Unit 19D between and including the Cheeneetnuk and Gagaryah River drainages (excluding that portion within 2 miles of the Swift River) for resident hunters to take a bull during Dec. 1−31.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The moose density in adjacent Unit 19A is low (0.27 moose/mi^2 in 2005). The harvest in the remainder of Unit 19D over the past 5 hunting seasons has averaged 6 moose per year, with approximately half of those taken by residents and half by nonresidents. Additional moose hunting opportunity likely cannot be supported in this portion of Unit 19D.

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PROPOSAL 16

EFFECT OF THE PROPOSAL: Extend the wolverine hunting season in Unit 19 to May 15.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: Extending the season from March 31 to May 15 is not recommended because it is unclear whether wolverine will decline in response to the decline in the Mulchatna Caribou herd. The wolverine population may not be able to support the increased harvest which would likely be associated with spring bear hunts. There is also concern about poor fur quality at this time of year, as well as maternal care of kits. This change would also put the wolverine hunting season closing date out of alignment with the trapping season, complicating enforcement and adding confusion to the regulations.

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PROPOSAL 17

EFFECT OF THE PROPOSAL: 1) Eliminate the lynx tracking harvest strategy in Units 20A, 20B, 20C east of the Teklanika River, and 20D, 2) establish a Nov. 1–Feb. 28 lynx season with a November bag limit of 5 lynx, and 3) reduce the bag limit during November in Unit 20C west of the Teklanika River.

DEPARTMENT RECOMMENDATION: **AMEND AND ADOPT**

RATIONALE: The lynx tracking harvest strategy is currently authorized for Units 20A, 20B, 20C, 20D and 25C. The current season for these units is Nov. 1–Feb. 28, with no bag limit. The department recommends suspending the tracking harvest strategy in all of these units and adopting a November bag limit of 2 lynx in Units 20A, 20B, 20C east of the Teklanika River, and 20D. Eliminating the tracking strategy is not a biological concern because current trapping pressure is much less than when the strategy was implemented. Based on this proposal and the proposal from the Upper Tanana/Fortymile AC recently adopted by the Board, most roadside Interior Alaska trappers support the idea of delaying the majority of the lynx harvest until December to coincide with fur primness. Allowing some harvest during November will eliminate regulatory problems with inadvertent catch of lynx in sets designed for other species. Requiring other areas in the Interior that were not managed under the tracking harvest strategy to conform to this view is not necessary due to lower harvests and the lack of voiced trapper concerns from those areas.

Lynx trapping in Unit 20 has been managed under the lynx tracking harvest strategy since 1988 due to concerns expressed by trappers and ADF&G that high pelt prices could cause excessive harvest during the low and early recovery phases of the 9- to 11-year lynx population cycle. At that time, lynx pelts were worth up to $800.00 and trapping interest was high. The tracking harvest strategy minimizes harvest during the lynx population low and early recovery phases and maximizes harvest during the population high. The Board of Game gave the department the authority to establish seasons within the Nov. 1–Feb. 28 time frame that best fit the tracking harvest strategy.

The proposer is correct that trapping intensity throughout most of Unit 20 does not warrant the tracking strategy. Historically, lynx populations increased to high levels following more

intensive trapping pressure than is currently occurring in the Interior. Furthermore, we cannot demonstrate that the tracking strategy benefited the lynx population or trappers in the Interior. In Yukon, Canada, where much of the research for the tracking strategy occurred, the lynx trapping season is 1 November–10 March because overharvest during the low and early recovery phases is no longer a concern.
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PROPOSAL 18

EFFECT OF THE PROPOSAL: Close lynx trapping season in November in Unit 20F.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The opening date for trapping most furbearers in Unit 20F is November 1. Incidental catch of lynx in traps and snares set for other furbearers such as fox must be forfeit to the state by the trapper if the lynx season is closed. The open season in November allows trappers to keep incidental catches. Trappers have the option to not target lynx in November. If some trappers feel that lynx caught in December compete better on the fur trade markets, they have the option to start trapping them at that time. During the 2000–2006 trapping seasons, an average of 56 lynx were reported taken in Unit 20F annually, and an average of 3 of those were reported taken in November. Closing the November season could potentially transfer that 5% of the harvest to later months. An alternative would be to create a November bag limit of 5 like currently exists in Units 12 and 20E and is recommended in proposal 17 for Units 20A, 20B, 20C east of the Teklanika, and 20D. However, the department feels this is not necessary because of the relatively light trapping pressure in Unit 20F. Only one trapper reported catching more than 5 lynx in November during the 2000–2006 seasons (he caught 8).
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PROPOSAL 19

EFFECT OF THE PROPOSAL: Shift moose seasons in Unit 20 to open later.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: We do not recommend moving season dates back in Unit 20 due to apparent increasing fall temperatures. Unit 20 is a large area and season dates for the general fall moose hunting season vary considerably across the unit. Opening dates range from August 15th (Unit 20D) to September 8th (Unit 20E), but generally open September 1st. Closing dates generally range between September 15th and 20th, with some hunt areas staying open as late as September 30th. Many factors are considered when setting season dates for moose. Moving season dates back based only on apparent changing weather patterns while ignoring other factors may raise other biological or allocative issues. The Department is preparing a staff report on temperature trends from several Interior stations over the last 30 years with help from a NWS forecaster which will be presented to the Board of Game at the spring 2008 meeting.
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PROPOSAL 20

EFFECT OF THE PROPOSAL: Allow harvest of grizzly bears at bait stations in Unit 20B.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The Department does not support the use of bait stations to harvest grizzly bears except as appropriate in bear predation control areas. The use of bait stations to harvest black bears has been extremely controversial. Public ballot initiatives to prohibit this practice have occurred in the past, and the Department believes that including the harvest of grizzly bears under general hunting regulations will exacerbate public opposition, possibly resulting in the loss of baiting even for black bears.

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PROPOSAL 21

EFFECT OF THE PROPOSAL: Change season dates for nonresident caribou hunters in Unit 20E (RC860) from Aug. 10–Sept. 20 to Aug. 20–Sept. 30.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The current nonresident season dates for the fall Fortymile Caribou hunt (RC860) are those recommended in the 2006–2012 Fortymile Caribou Herd Harvest Plan, and the department supports continuation of those season dates. Harvest management of the Fortymile Caribou Herd, including allocation of harvest between residents and nonresidents, is guided by this harvest plan, which was developed by representatives from the Central, Delta Junction, Eagle, Fairbanks and Upper Tanana/Fortymile Advisory Committees, and the Eastern Interior Regional Advisory Council, with input from the Yukon Fish and Wildlife Management Board, the Yukon Department of Environment and Yukon First Nations. The Alaska Board of Game and the Federal Subsistence Board endorsed the plan in 2006.

The current portion of the fall Fortymile Caribou Hunt (RC860) area accessible from the Taylor Highway (Zone 3) has been in place since the fall of 2004. During the 2004–2007 fall seasons in Zone 3, nonresident hunters harvested an average of 34 caribou (range 27–41), while resident hunters harvested an average of 297 (range 257–370). The fall quota in Zone 3 averaged 305 (range 290–320) during this period and was met prior to the scheduled closing date of September 20 for nonresidents and September 30 for residents in 2005, 2006 and 2007. Based on analysis of harvest chronology, if nonresidents had been excluded from the hunt in Zone 3 during 2004-2007, the season for residents would likely have been extended by 1 day in 2006, but closed on the same date in 2004, 2005 and 2007.

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PROPOSAL 22

EFFECT OF THE PROPOSAL: Increase allowable harvest of Macomb caribou.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
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PROPOSAL 23

EFFECT OF THE PROPOSAL: Eliminate the spike-fork season for moose in Unit 20.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: Generally, about 50% of the yearling bulls in a moose population have palmated antlers and thus are protected under the current regulation which allows hunters to harvest bulls with spike, forked, or 50" antlers or antlers with 4 or more brow tines. This allows for adequate recruitment of yearling bulls into the population. In Unit 20A during 2002–2005, harvest rates of yearling bulls were estimated at <20% of the prehunt yearling bull moose population, and bull:cow ratios increased from 26 bulls:100 cows to 38 bulls:100 cows with spike-fork/50" antler restrictions. In Alaska, spike-fork/50" regulations were first initiated on the Kenai Peninsula in 1987 after intensive harvest of bulls resulted in a low proportion of bulls in the population. Similar harvest strategies were implemented near most Alaska road systems during 1988–1993.

The proposer of this change asserts that antlerless hunts in Unit 20 are used to increase bull:cow ratios. Rather, antlerless hunts in Unit 20 were implemented to limit or reduce moose populations to protect the population's health and habitat. While it is true that this antlerless hunts contributed to an increase in the bull:cow ratio, it was a relatively small contribution. Measured and simulated bull:cow ratios indicated that 2 years of conservative (<2% of the prehunt moose population) antlerless harvests (144–200 adult female moose) and 2 years of liberal (3–4% of the prehunt moose population) antlerless harvests (709–802) increased bull:cow ratios by 4–5 bulls:100 cows over that 4 year period.

If the board adopts this proposal, subsistence procedures would need to be followed to evaluate whether harvestable surpluses outside the Fairbanks Nonsubsistence Area would require a reduction in nonsubsistence uses in order to provide a reasonable opportunity for subsistence uses.
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PROPOSAL 24

EFFECT OF THE PROPOSAL: Reinstate the TM785 permit hunt in the Minto Flats Management Area in Unit 20B.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue. However, a Tier II hunt can only be established when the allowable harvest of a species falls below the amount necessary for subsistence. Currently in the case of the Minto Flats Management Area, the allowable harvest is above the amount necessary for subsistence.

The Minto Flats Management Area RM 775/785 hunt is open during Sept. 1–25 and Jan. 10–Feb. 28 with a bag limit of any moose. A general season for 1 bull with SF50"/4 brow tines is open Sept. 11–25. Prior to 2004, the Minto Flats Management Area moose hunt consisted of the Tier II TM785 hunt during Sept. 1–20 and Jan. 10–Feb. 28 and the general season hunt for bulls with a SF50"/4 brow tines during Sept. 11–20. Annual harvest of approximately 100 moose in those hunts exceeded the Amount Necessary for Subsistence of 20–40 moose. The 2006 population estimate for the MFMA of 3500 moose resulted in an estimated harvestable surplus of 140–210 moose.

RM775/785 is a registration hunt with a limited number of permits issued on a first come, first served basis (one permit per household). Permits are issued in Fairbanks, Minto and Nenana based on a 40%–36%–28% split. Typically, demand exceeds supply, and applicants must stand in line for long periods.

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PROPOSAL 25

EFFECT OF THE PROPOSAL: Eliminate the antlerless moose hunts in Units 20A and 20B.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See issue statements for staff proposals 130 and 131 to reauthorize antlerless moose hunts in Units 20A and 20B.

If the Board adopts this proposal, subsistence procedures would need to be followed to evaluate whether harvestable surpluses outside the Fairbanks Nonsubsistence Area would require a reduction in nonsubsistence uses in order to provide a reasonable opportunity for subsistence uses.

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PROPOSAL 26

EFFECT OF THE PROPOSAL: Modify moose antler restrictions to 36 inches and 3 brow tines in Unit 20A.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: This proposed change would likely result in a high harvest rate of bull moose and a steep decline in bull:cow ratios. Under this harvest strategy a high proportion of bulls would be legal; only yearlings with palmated antlers and 2 year-old bulls with antlers <36-inches would be protected. Recruitment of bulls into the ≥36" class likely would be too low to compensate for high harvest rates and, ultimately, bull:cow ratios would decline. Under this proposed harvest strategy, areas with high access (e.g., Ferry Trail Management Area) would experience the highest harvest rates and sharpest declines in bull:cow ratios. This would require

corrective action that would be even more restrictive (e.g., antler restrictions plus shorter seasons) than the current antler restrictions to maintain bull:cow ratios at desirable levels.

Under the current harvest strategy (general season spike-fork/50", 500 "any bull" drawing permits, and antlerless harvest, which includes a small percentage of bull calves and antlerless bulls) the predicted 2008 reported harvest will meet the harvest objective of 500 male moose (4% of the predicted prehunt moose population). Reported male harvest under the current strategy was 550 in 2006 and 500 in 2007.

In Alaska, spike-fork/50" regulations were first initiated on the Kenai Peninsula in 1987 after intensive harvest of bull moose in the late 1970s and early 1980s resulted in a low proportion of bulls in the population. Spike-fork/36" regulations were used in some Units prior to spike-fork/50" regulations, but the spike-fork/36" regulation is no longer used anywhere in the state.
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PROPOSAL 27

EFFECT OF THE PROPOSAL: Eliminate the antlerless hunts in Units 20A and 20B.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See issue statement for staff proposals 130 and 131.

If the board adopts this proposal, subsistence procedures would need to be followed to evaluate whether harvestable surpluses outside the Fairbanks Nonsubsistence Area would require a reduction in nonsubsistence uses in order to provide a reasonable opportunity for subsistence uses.
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PROPOSAL 28

EFFECT OF THE PROPOSAL: Eliminate antlerless moose hunts in Units 20A and 20B.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See issue statement for staff proposals 130 and 131.

If the board adopts this proposal, subsistence procedures would need to be followed to evaluate whether harvestable surpluses outside the Fairbanks Nonsubsistence Area would require a reduction in nonsubsistence uses in order to provide a reasonable opportunity for subsistence uses.
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PROPOSAL 29

EFFECT OF THE PROPOSAL: Extend the moose season in 20B to allow for cooler temperatures.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See analysis and recommendation for proposal 19, which deals with the same issue in a broader geographic area that includes Unit 20B.
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PROPOSAL 30

EFFECT OF THE PROPOSAL: Create a new late season archery hunt for moose in all of Unit 20B.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This an allocation issue between user groups. The proposal is intended to alleviate overcrowding in the Fairbanks Management Area (FMA) by spreading bowhunters across other areas of Unit 20B. However, the moose hunt in the FMA is intended to provide as much opportunity and harvest as possible in a highly residential area and to reduce the risk of moose–vehicle collisions and moose–human conflicts. It is not intended to be a high quality, low participation hunt.

Creating additional bowhunting opportunity outside of the FMA is not likely to reduce crowding within the FMA. Unit 20B outside of the FMA already has 15–30 days of bowhunting opportunity during the general season and an extended bowhunting-only season in the upper Chena and Salcha. In Unit 20A adjacent to the FMA (zone 2), there were 111 consecutive days of bowhunting opportunity in 2007 (Sept. 1–25 general season and Aug. 25–Dec. 14 antlerless hunt). Much of southwestern Unit 20A had 188 days of bowhunting-only seasons in 2007.
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PROPOSAL 31

EFFECT OF THE PROPOSAL: Shorten the archery bull season in the Fairbanks Management Area (FMA) in Unit 20B to 10 days from 37 days.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is allocation issue between user groups. The proposers suggest that the FMA is overcrowded with hunters, private land, and moose, and there are too many moose–vehicle collisions. The hunt in the FMA is not intended to be a high quality, low participation hunt. It is intended to provide as much opportunity and harvest as possible in a highly residential area and to reduce the risk of moose–vehicle collisions and moose–human conflicts. Shortening the bull season by 73% will not address these concerns. A shorter season will concentrate hunters, reduce the harvest of moose, and leave more moose available to collide with cars.
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PROPOSAL 32

EFFECT OF THE PROPOSAL: Make a borough-wide, late archery season for moose in Unit 20B.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue between user groups. The proposal is intended to alleviate overcrowding in the Fairbanks Management Area (FMA) by spreading bowhunters across other areas of Unit 20B. The hunt in the FMA was not intended to be a high quality, low participation hunt. It is intended to provide as much opportunity and harvest as possible in a highly residential area and to reduce the risk of moose-vehicle collisions and moose-human conflicts. Unit 20B outside of the FMA already has 15–30 days of bowhunting opportunity during the general season and an extended bowhunting-only season in the upper Chena and Salcha. In the portion of Unit 20A adjacent to the FMA (zone 2), there were 111 consecutive days of bowhunting opportunity in 2007 (Sept 1–25 general season and Aug 25–Dec 14 antlerless hunt). Much of southwestern Unit 20A had 188 days of bowhunting-only seasons in 2007. Therefore it is unlikely that creating additional bowhunting opportunity outside of the FMA will reduce crowding within the FMA. Additionally, the boundary of the borough is not appropriate for a hunt boundary, because it is not easily identifiable by hunters and enforcement officers on the ground.

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PROPOSAL 33

EFFECT OF THE PROPOSAL: Restrict winners of drawing permits for moose within the Fairbanks Management Area (FMA) to only hunt in the FMA.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue between user groups. The proposal appears to intend to decrease the number of permit applicants for the FMA antlerless hunt by limiting permit winners to moose hunting only in the FMA under that permit. The proposal may reduce the number of permit applicants (and increase drawing success), but it is unlikely to result in a higher harvest of moose during the hunt. In the 2007 season, 150 permit holders reported taking 42 moose.

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PROPOSAL 34

EFFECT OF THE PROPOSAL: Extend the moose season in Unit 20C to allow for cooler temperatures.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See analysis and recommendation for proposal 19, which deals with the same issue in a broader geographic area that includes 20C.

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PROPOSAL 35

EFFECT OF THE PROPOSAL: Extend the moose hunting season to Sept. 1–20 in Unit 20D north of the Tanana River from the Volkmar River drainage east to the unit boundary.

DEPARTMENT RECOMMENDATION: **AMEND AND ADOPT**

RATIONALE: Hunting effort and harvest in this area are low and the moose population can sustain additional harvest. This portion of Unit 20D is relatively inaccessible except along the Tanana River and a few large lakes north of the Tanana. During the last 3 hunting seasons (2005–2007) an average of 49 hunters reported from this area, and reported harvest averaged 20 bull moose per year. Much of this area was burned by wildfires in 2003 and 2004 and it is anticipated that the moose population in this area will grow in the future with this improving habitat.

This regulation proposal should be amended to make the north bank of the Tanana River the regulatory boundary to avoid the confusion that would occur if the south bank of the Tanana were the regulatory boundary for a portion of the area and the north bank the boundary for the remainder. Current moose hunting regulations separate Unit 20D at the Tanana River with north bank of the Tanana being the boundary and the north bank of the Tanana also serves as the boundary of the Fairbanks Nonsubsistence area (5 AAC 99.015(a)(4)).

Alaska Wildlife Troopers, Delta Post, has concerns that if adopted this regulation will create enforcement issues by creating a portion of Unit 20D with a longer moose hunting season than the remainder of the unit. Also, this proposal will further complicate the already complicated moose hunting regulations in Unit 20D, causing hunter confusion.

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PROPOSAL 36

EFFECT OF THE PROPOSAL: Eliminate the antlerless hunts in Units 20A, 20B and 20D.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See staff proposals 130, 131, and 135.

If the board adopts this proposal, subsistence procedures would need to be followed to evaluate whether harvestable surpluses outside the Fairbanks Nonsubsistence Area would require a reduction in nonsubsistence uses in order to provide a reasonable opportunity for subsistence uses.

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PROPOSAL 37

EFFECT OF THE PROPOSAL: Clarify the boundary for the Mt. Harper sheep drawing permit hunt.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
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PROPOSAL 38

EFFECT OF THE PROPOSAL: Establish Delta Creek Controlled Use Area in Unit 20A to restrict motorized vehicle use for hunting big game.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue between hunters that use different modes of transportation. This proposal seeks to curtail destruction of habitat, environmental degradation, deterioration of quality hunting experience, game and hunter harassment, unsportsmanlike conduct and unsightliness of trails. Destruction of habitat and environmental degradation are land management issues under authority of the Department of Natural Resources. Current game regulations are adequate to manage moose harvests in this portion of Unit 20A.
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PROPOSAL 39

EFFECT OF THE PROPOSAL: Change archery season for moose in Unit 20B.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See analysis and recommendation for proposal 30.
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PROPOSAL 40

EFFECT OF THE PROPOSAL: Modify Unit 20E Brown Bear sealing requirements.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See issue statement and analysis and recommendation for department proposal 41.
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PROPOSAL 41
EFFECT OF THE PROPOSAL: Eliminate in-unit sealing requirement for brown bear taken in Unit 20E.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.

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PROPOSAL 42

EFFECT OF THE PROPOSAL: Allow take of grizzly bears over bait in Unit 20B.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See analysis and recommendation for proposal 20.
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PROPOSAL 43

EFFECT OF THE PROPOSAL: Restrict airboat usage until after 3:00 a.m. following the day of travel outside navigable waterways on the Salcha and Tanana Rivers in Units 20B and 20D.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue between hunters that use different modes of transportation. Moose hunters using airboats south of the Salcha River in Unit 20B and north of the Tanana River in Unit 20D are a small proportion of all hunters and there is no biological need to impose same-day-hunting restrictions on this method of access. The average number of hunters and moose killed during the 2005–2007 seasons in Unit 20B south of the Salcha River was 24 hunters who killed 9 moose and in Unit 20D north of the Tanana River was 7 hunters who killed 5 moose.
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PROPOSAL 44

EFFECT OF THE PROPOSAL: Prohibit big game hunters from hunting until 3:00 a.m. following the day they rode along an established trail in Units 20A, 20D and 20E.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue, and therefore the Department has no recommendation. The proposal attempts to deal with the very controversial topic of habitat destruction caused by all terrain vehicles, which is further complicated by the lack of a definition of established trails in the proposal. The Department is generally able to adequately manage wildlife populations in these units using current regulations and prefers to address access-related issues on a case-by-case basis.
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PROPOSAL 45

EFFECT OF THE PROPOSAL: Prohibit big game hunting within the city limits of Delta Junction in Unit 20D.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This proposal addresses a public safety issue, and therefore the Department has no position. The public safety concerns by the Delta Junction City Council arose in reaction to the 2007 cow moose hunt in Unit 20D and their concern that cow moose hunters inside the city limits would cause safety issues. The city limits of Delta Junction are within the Delta Junction Management Area that was closed to moose hunting during 1971–1995. Limited moose hunting began within the Delta Junction Management Area in 1996 with a drawing permit hunt, and 10 permits are issued each year to hunt bull moose in the Area. The city limits of Delta Junction are a small proportion of the DM799 cow moose drawing permit hunt, for which 180 permits were issued in 2007. The city considered prohibiting the discharge of firearms but decided to submit this regulation proposal instead.

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PROPOSAL 46

EFFECT OF THE PROPOSAL: Increase brown bear bag limit to 2 bears/year in Units 21A and 21D.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The department does not support bag limits for more than 1 brown bear per year under hunting regulations. Increased bag limits have been supported as part of predator control programs where kill is closely controlled by permit, and where potential impacts on bear populations and their prey have been addressed in predation control implementation plans.

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PROPOSAL 47

EFFECT OF THE PROPOSAL: Shorten the moose season in Unit 21A and add antler restrictions for resident hunters.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: A decline in the moose population has not been detected. The Innoko River drainage is used for moose hunting by residents of Unit 21E, Takotna, McGrath, other Alaskans, and nonresidents. Maintaining this hunting opportunity is consistent with the Yukon–Innoko Moose Management Plan. The most recent moose density data were collected by the Innoko National Wildlife Refuge staff and do not indicate a decline in this moose population. Density estimates in the northern portion of the refuge in 1994, 1998, and 2002 were 0.4, 0.6, and 0.5 moose/mi^2, respectively. In the southern portion density estimates in 1996 and 2000 were 0.7 moose/mi^2 during each year. Fall composition surveys conducted by ADF&G during November 2007 do not indicate problems with the bull:cow ratios (36 bulls:100 cows) and antler restrictions are not necessary. Additionally, success rates of 22%–37% during the 2003–2007 seasons do not provide a compelling argument to restrict hunting. Given the restrictions proposed to the resident

subsistence season, the board will need to evaluate whether adopting the proposed regulation would still provide a reasonable opportunity for subsistence uses.
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PROPOSAL 48

EFFECT OF THE PROPOSAL: Require nonresident moose hunters in Unit 21A and 21E to attend an ADF&G-approved hunter orientation course or be accompanied in the field by a registered guide or a resident family member within the second degree of kindred.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The nonresident hunter orientation in Units 17B and 19B requires these hunters to watch a meat care video and a video about judging moose antlers. The department has no indication whether this requirement is effective in reducing waste in those units, so the usefulness of extending this program to Units 21A and 21E is questionable. Requiring nonresident hunters to be accompanied by a guide or family member is unnecessarily restrictive. Although hunting with a guide is easier and more efficient for most nonresident hunters, the added cost of hiring a guide would deter many from hunting in Units 21A and 21E. Finally, the Board does not have the authority to require nonresidents to hire guides.

An average of 40 bulls per year were killed by nonresident hunters in Units 21A and 21E during the 2004–2006 hunting seasons. This harvest is sustainable, while affording adequate opportunity for local and nonlocal Alaska residents to harvest moose.
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PROPOSAL 49

EFFECT OF THE PROPOSAL: Establish a 5-day "To Be Announced" moose season on native lands in Unit 21B below the Little Mud River to be opened concurrent with Federal hunts during the period of Dec. 1–March 31.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: A winter hunt that contributes to additional cow mortality would be detrimental to the growth of the moose population. The department's strategy is to increase the subsistence harvest of bulls during fall hunts, so that the demand for cows is less during winter, promoting growth of the moose population. Opening a winter hunt in Unit 21B would contradict this strategy.

The Unit 21B moose season has occurred from September 5-25 for 27 years. Since 1961, moose hunting seasons after December 31 (the period when most bulls have shed antlers for the winter) occurred only during 1970–73. In 2004, drawing permit regulations were adopted to reduce bull harvest within the Nowitna River Corridor to improve bull:cow ratios and to disperse hunting pressure. Also in 2004, concerns about harvest of cows during the winter subsistence seasons in adjacent Unit 21D prompted the Department to recommend closure of the winter season in that

unit, in an attempt to increase the reproductive component of the moose population. At the 2006 BOG meeting, a 10-day August subsistence season was added in Unit 21B to provide for additional opportunity. The Department's strategy is to increase the subsistence harvest of bulls during fall hunts, so that the demand for moose during the winter is less.

The drawing permit strategy implemented in Unit 21B in 2004 has contributed to increases in the bull:cow ratio in 3 of the last 4 years from 13 bulls:100 cows in RY 03 to 26 bulls:100 cows in RY 07. However, part of the increase in bull:cow ratios is due to an apparent decline in adult cows. The winter season adopted by the Federal Subsistence Board in 2007 was opposed by the Department as well as the Koyukuk/Nowitna National Wildlife Refuge.

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PROPOSAL 50

EFFECT OF THE PROPOSAL: Establish Sept. 1–4 and Sept. 26–Oct. 1 moose seasons for any bull on native lands in Unit 21B, downstream of the Little Mud River.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: Ten days additional hunting opportunity would be detrimental to the management objective to increase the low bull:cow ratios in Unit 21B. Bull numbers are estimated to be increasing on the order of less than 0.3% annually.

In 2004, drawing permit regulations were adopted to reduce bull harvest within the Nowitna River Corridor in order to improve bull:cow ratios and to disperse hunting pressure. At the 2006 Board of Game meeting, a 10-day August subsistence season was added in Unit 21B to provide for additional opportunity. The Department opposed the 2007 Federal Subsistence Board adoption of the Sept. 26–Oct. 1 season and the companion State proposal that was rejected at the 2006 Board of Game meeting.

The drawing permit strategy implemented in Unit 21B in 2004 has contributed to increases in the bull:cow ratio in 3 of the last 4 years from 13 bulls:100 cows in 2003 to 26 bulls:100 cows in 2007. However, part of the increase in bull:cow ratios is due to an apparent decline in adult cows.

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PROPOSAL 51

EFFECT OF THE PROPOSAL: Establish a bulls-only March "To Be Announced" moose season in Unit 21D, Koyukuk Controlled Use Area (CUA).

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The current management strategy in the Unit 21D portion of the Koyukuk CUA is to increase the moose population. The moose population was at the highest levels within the Koyukuk CUA areas during 1992–1994, then declined through 2000–2002. In order to respond

to population declines, the management strategy was initially to eliminate fall cow harvest, then eliminate winter hunts that resulted in high cow harvest. This strategy, by increasing productivity and survival, contributed to the stabilization of the population by 2003–2004, but the management objective of growth of the population has yet to be realized. Harvest of cows in a March season, in addition to those already being taken but not reported and those harvested under the existing Federal seasons, would not be consistent with this strategy.

Concurrent with this strategy was the effort to increase bull:cow ratios so that fall hunter success rates would increase for local subsistence hunters, therefore reducing the dependence on winter seasons. This strategy was effective in providing for higher fall harvest levels for local subsistence hunters throughout the Galena area, where drawing and registration permits were adopted.

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PROPOSAL 52

EFFECT OF THE PROPOSAL: Eliminate the nonresident wolf tag fee in Unit 21A, lengthen the hunting season to Aug 10−May 31, and increase the bag limit to 10 wolves per day.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The Board does not have authority to delete nonresident tag fees. The department does not support extending the wolf hunting season or increasing the bag limit. The proponent feels that these changes would increase harvest of wolves and enhance moose survival, as well as provide additional hunting opportunity. It is doubtful that an increase in harvest would occur because current liberal hunting opportunity likely exceeds hunter demand. In addition, residents and nonresidents interested in taking more than 10 wolves can do so under a trapping license during Oct. 1−Apr. 30.

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PROPOSAL 53

EFFECT OF THE PROPOSAL: Open a beaver hunting season in Unit 21A with no limit and no closed season.

DEPARTMENT RECOMMENDATION: **AMEND AND ADOPT**

RATIONALE: The department submitted proposal 82 to liberalize and simplify beaver regulations throughout Region III. Proposal 82 recommends the beaver hunting season in Unit 21E and trapping seasons in all surrounding units be standardized to Sept. 1–Jun. 10, with no bag limit. Therefore we recommend that this proposal be amended to align the beaver hunting season in Unit 21A with the proposed beaver trapping season of Sept. 1–Jun. 10, with no bag limit. This will provide additional opportunity, as requested, and align the season with trapping seasons in surrounding units and with the hunting season in Unit 21E.

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PROPOSAL 54

EFFECT OF THE PROPOSAL: Close the nonresident caribou and moose seasons in Unit 21A.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue, and therefore the Department has no recommendation. The Innoko River drainage is used for moose hunting by residents of Unit 21E, Takotna, McGrath, other Alaskans, and nonresidents. Maintaining this moose hunting opportunity is consistent with the Yukon Innoko Moose Management Plan.

Two small caribou herds are present in Unit 21A (Beaver Mountains Herd, and Sunshine Mountains Herd caribou). Caribou harvest over the past 4 hunting seasons has averaged 1/year for both residents and nonresidents. Low moose densities were measured by Innoko National Wildlife Refuge staff. Density estimates in the northern portion of the refuge in 1994, 1998, and 2002 were 0.4, 0.6, and 0.5 moose/mi^2, respectively. In the southern portion density estimates in 1996 and 2000 were 0.7 moose/mi^2 during each year. Moose harvest during the 2006 hunting season was 20 for residents and 9 for nonresidents. The caribou and moose populations can likely sustain the current small harvest.

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PROPOSAL 55

EFFECT OF THE PROPOSAL: Allocate a portion of drawing permits to nonresidents and nonresident guided hunters in Unit 21B, Upper Nowitna drawing permit hunt DM810 on the Nowitna National Wildlife Refuge.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: The department has no recommendation concerning allocation of permits to nonresidents. However, the department is concerned about the extreme complexity and high cost of the proposed changes to the hunt boundaries and permit administration procedures in this proposal. As the department understands it, this proposal would require the creation of 4 distinct hunts that would be tied to the boundaries of the Nowitna National Wildlife Refuge for the 20 permits that are currently available in that area. It would also require the development of an unprecedented online registration process to distribute unused permits, and in the case of cancelled hunts, to re-distribute those permits. Also, the department currently has the authority and procedures in place to distribute undersubscribed permits. The board does not have authority to regulate guiding requirements.

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PROPOSAL 56

EFFECT OF THE PROPOSAL: Increase the bag limit for black bears from 3 to 5 per year in Units 21A and 21E.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The proponent feels that increasing the black bear bag limit from 3 to 5 would increase harvest of bears and enhance moose survival. It is doubtful that an increase in harvest would occur because current regulations are likely not limiting black bear hunting opportunity in Units 21A and 21E.

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PROPOSAL 57

EFFECT OF THE PROPOSAL: In Unit 21A west of the Iditarod Historic Trail, change the general season moose hunt to a drawing permit hunt, in the winter drawing supplement, with a bag limit of one bull with spike-fork or 50" antlers or antlers with 4 brow tines on at least 1 side.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The Innoko River drainage is used for moose hunting by residents of Unit 21E, Takotna, McGrath, other Alaskans, and nonresidents. Maintaining this hunting opportunity is consistent with the Yukon–Innoko Moose Management Plan and subsistence statute and regulation. The most recent moose density data were collected by the Innoko National Wildlife Refuge staff and do not indicate a decline in this moose population. Density estimates in the northern portion of the refuge in 1994, 1998, and 2002 were 0.4, 0.6, and 0.5 moose/mi^2, respectively. In the southern portion density estimates in 1996 and 2000 were 0.7 moose/mi^2 during each year. Fall composition surveys conducted by the department during November 2007 do not indicate problems with the bull:cow ratios (36 bulls:100 cows) and antler restrictions are not necessary. Additionally, success rates of 22%–37% during 2003–2007 hunting seasons do not provide a compelling argument to restrict hunting. If the board chose to adopt this proposal, the board would need to follow the subsistence steps in regulation, which would require reduction or elimination of nonsubsistence uses before restricting the resident subsistence hunt to a drawing permit hunt

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PROPOSAL 58

EFFECT OF THE PROPOSAL: In Unit 21A, 21D, and 21E, require nonresident and nonresident alien moose hunters to be accompanied by an Alaskan licensed guide or a resident relative.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: The Board does not have authority to regulate guiding requirements.

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PROPOSAL 59

EFFECT OF THE PROPOSAL: Establish late fall moose hunt (Sept. 26–Oct. 1) on native lands in Kanuti Controlled Use Area (CUA) of Unit 24B.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: Although bull:cow ratios are relatively high, moose densities are very low in Unit 24B. Additional harvest will compound the issues of low hunter success rates, extended days in the field, and concentrated hunting activities along river corridors. It will also compromise attempts to increase the population.

Federally-managed lands within the Kanuti CUA, are open only to federally qualified hunters. Federal regulations on those lands allow up to 18 days of additional hunting opportunity, including the potential harvest of cows. Hunters have difficulty harvesting moose because densities are low (0.2 moose/mi^2 or less) and moose tend to be concentrated in 15–25 year-old burns away from the river corridors. Federal land closures in the Kanuti CUA focus hunting activity of non-locals onto non-federal lands along the rivers, increasing hunting pressure in these travel corridors.

Bull:cow ratios in Unit 24B are 60–65 bulls:100 cows, and harvest rates for the 2004–2006 seasons averaged 2.9% of the observable moose population. Since 1993, the moose population has declined by more than 65% on the Kanuti NWR, and apparently also in much of the remainder of Unit 24B and in Unit 24A.

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PROPOSAL 60

EFFECT OF THE PROPOSAL: Modify the bull moose drawing permit conditions for the Dalton Highway Corridor Management Area so that permit winners must hunt and are not qualified for any other moose hunts.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue. Making Dalton Highway Corridor moose drawing permit winners ineligible to hunt moose elsewhere would reduce their hunting opportunity because they would not be able to hunt elsewhere if they were unsuccessful. Also, enforcement of the prohibition on hunting elsewhere would be difficult. Currently, 70 drawing permits are issued for the Dalton Highway Corridor Management moose hunts (DM920 and DM922). The success rate for those who hunted was 11%.

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PROPOSAL 61

EFFECT OF THE PROPOSAL: Establish a May archery season for wolves in the Unit 24A portion of the Dalton Highway Corridor Management Area.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: Big game hunting within the Dalton Highway Corridor Management Area is currently restricted to archery only, and the current wolf hunting season is Aug. 10–Apr. 30. The proponent feels that extending the season through May would increase harvest of wolves and enhance moose and caribou survival, as well as provide additional hunting opportunity. Although this proposal would provide some increased opportunity, it would not significantly reduce wolf numbers and, therefore, would have little effect on moose and caribou survival. During May wolf hides are of inferior quality, and few hunters are in the field. Therefore, there would be little effort by hunters to take wolves, and the restrictive nature of an archery-only season will further decrease this effort. This would also make the wolf hunting season in Unit 24A within in the Dalton Highway Corridor inconsistent with the remainder of Unit 24.

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PROPOSAL 62

EFFECT OF THE PROPOSAL: Establish a winter "To Be Announced" season in Units 24C and 24D on native lands in the Koyukuk CUA.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The current management strategy in the Unit 24C and 24D portion of the Koyukuk Controlled Use Area is to increase the moose population. Harvest of cows in a March season, in addition to those already being taken but not reported and those harvested under the existing Federal seasons, would conflict with this strategy.

The moose population was at the highest levels within the Koyukuk CUA areas during 1992–1994. The population declined through 2000–2002 and appeared to stabilize through 2003–2007, due to high productivity and improved survival. In order to respond to population declines, the management strategy was to eliminate the fall cow harvest initially, then eliminate winter hunts, which resulted in high cow harvest. This strategy was successful in contributing to stabilization of the population by 2003–2004, but the management objective of population growth has not been realized. Concurrent with this strategy was the effort to increase bull:cow ratios so that fall hunter success rates would increase for local subsistence hunters, thereby reducing the dependence on winter seasons. This strategy was effective in providing for higher fall harvest levels for local subsistence hunters throughout the Galena area, where drawing and registration permits were adopted.

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PROPOSAL 63

EFFECT OF THE PROPOSAL: Change moose registration permit hunt season dates in Units 24C and 24D Koyukuk Controlled Use Area (CUA), from Aug. 27–Sept. 20 to Sept. 1–27.

DEPARTMENT RECOMMENDATION: **AMEND AND ADOPT**

RATIONALE: The department recommends adoption of this proposal with amended registration permit hunt season dates of Sept. 1–25 in the Koyukuk CUA in Units 24C, 24D, and 21D. Season timing would be changed to provide enhanced hunting opportunity, while avoiding excessive harvest and complying with the Koyukuk River Moose Management Plan. In addition, closing the season on Sept. 25 would align registration hunt closing dates with drawing hunt closing dates, reducing hunter confusion.

The August registration permit hunting opportunity was initially established by the Koyukuk River Moose Management Plan in 2000 as a preference for local hunters to reduce conflict among user groups. With fewer drawing permit hunters as a result of declining moose numbers and low bull:cow ratios, hunter congestion has declined. Although this proposal recommends dropping 5 days at the beginning of the season and adding seven days at the end of the season, the department recommends an equal exchange of days of hunting opportunity (shifting the season 5 days later).

Implementation of drawing permit hunts and a reduction in the number of permits available was the primary strategy employed to increase bull:cow ratios. With additional bulls now available for harvest, the department will begin the process of reversing those restrictions in a manner consistent with the former Management Plan. Registration permit hunters will benefit from the higher bull:cow ratios through improved hunter success and reductions in hunter effort during the fall, further reducing dependency of winter hunts. Drawing permit hunters will benefit from increased opportunity by the increased number of drawing permits issued. The Department also anticipates, and has accounted for, an associated increase in the registration permit use by hunters accompanying successful drawing permit hunters.
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PROPOSAL 64

EFFECT OF THE PROPOSAL: Require antler destruction for all moose hunts in Unit 24C.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: Current regulations effectively achieve management objectives, and additional antler destruction requirements are unnecessary. Analysis of surveys for the Koyukuk Controlled Use area indicate bull:cow ratios are above the objective of 30 bulls:100 cows for the first time since 2000, when the current combination of permits and antler destruction were implemented. Antler destruction in 24C and 24D applies to the RM832 and RM834 registration permit hunts. Cutting through one antler in the middle of the palm and forfeiting the upper half of the palm is the current requirement, and is an effective way to limit hunters who do not have meat acquisition as their highest priority. Nonresidents do not qualify for this registration permit. Additionally, the drawing permit hunts that do not require antler destruction are limited. Combined, these two permits have increased the bull:cow ratio at a rate of about 2.8% annually.
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PROPOSAL 65

EFFECT OF THE PROPOSAL: Change RM832 season dates in Unit 24D Controlled Use Area, to Sept. 1–20 (any bull), and Sept. 21–30 (spike/fork bulls only).

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See analysis and recommendation for proposal 63.
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PROPOSAL 66

EFFECT OF THE PROPOSAL: Change moose season dates in Unit 24D Koyukuk CUA, to Sept. 1–30.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See analysis and recommendations for proposal 63.
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PROPOSAL 67

EFFECT OF THE PROPOSAL: Open an antlerless (cow) moose drawing permit season in Unit 24D (5 permits).

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: A hunt that contributes to additional cow mortality would be detrimental to the growth of the moose population. The department's strategy is to increase the subsistence harvest of bulls during fall hunts, so that the demand for cows is less. Opening a cow season in Unit 24D would contradict this strategy.

The moose population was at the highest levels within the Koyukuk CUA areas during 1992–1994. The population declined through 2000–2002 and appeared to stabilize through 2003–2007, due to high productivity and improved survival. In order to respond to population declines, the management strategy was to eliminate the fall cow harvest initially, then eliminate winter hunts, which resulted in high cow harvest. This strategy was successful in contributing to stabilization of the population by 2003–2004, but the management objective of population growth has not been realized. Concurrent with this strategy was the effort to increase bull:cow ratios so that fall hunter success rates would increase for local subsistence hunters, thereby reducing the dependence on winter seasons. This strategy was effective in providing for higher fall harvest levels for local subsistence hunters throughout the Galena area, where drawing and registration permits were adopted.
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PROPOSAL 68

EFFECT OF THE PROPOSAL: Modify the bag limit for black bears in Unit 25D to allow the take of any bear using traditional predator management.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The Department does not generally support taking black bear cubs or sows with cubs under hunting regulations. This management tool has been supported as part of predator control programs where kill is closely controlled by permit, and where potential impacts on bear populations and their prey have been addressed in predation control implementation plans. To address ongoing concerns about the low density moose population in Unit 25D, the Department will present an update on the status of intensive management plan development to the Board.
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PROPOSAL 69

EFFECT OF THE PROPOSAL: Clarify the boundary for the Tier II moose hunt in Unit 25D west.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
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PROPOSAL 70

EFFECT OF THE PROPOSAL: Create a drawing permit for sheep in a portion of Unit 25A that incorporates the Cane Creek and Red Sheep Creek drainages.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: Since the federal closure to non-subsistence users was removed from this area in 2006, hunter participation and harvest has been stable and sustainable under full-curl regulation. During 2006 and 2007, a total of 12 hunters reported hunting in the Cane and Red Sheep Creek drainages and harvest averaged 5 rams annually under the general season. ANWR permits one guide in Cane and Red Sheep Creek drainages, and no guided harvest occurred during 2006 or 2007. Any reduction in resident opportunity, such as moving from a general hunt to a drawing hunt, would require the Board to utilize the subsistence procedures in statute (AS 16.05.258) and regulation (5 AAC 99.010) to evaluate whether the regulatory change would still provide a reasonable opportunity for subsistence uses. The Department has no biological concerns associated with a general season harvest and there is not a current biological basis to implement a drawing permit hunt. Studies by the USFWS have indicated that sheep populations are stable in this area and conflicts between federally qualified subsistence users and other hunters are likely minimal.

The Federal subsistence season is August 10–April 30 with a bag limit of 2 rams. Federally qualified subsistence hunters can access the area by snowmachine during winter. State regulations authorize residents and nonresidents to harvest full-curl rams during August 10–

September 20. Due to remoteness, non-federally qualified hunters access the Cane and Red Sheep creek drainages exclusively by aircraft.

In 1991, the Federal Subsistence Board (FSB) established the Arctic Village Sheep Management Area (AVSMA) in Unit 25A to close the area to sheep hunting except by federally qualified subsistence hunters. The AVSMA is entirely within Arctic National Wildlife Refuge (ANWR). In 1995, the Cane and Red Sheep Creek drainages were added to the AVSMA. Due to a lack of reported harvest or use of these drainages by local subsistence hunters, the FSB temporarily removed the closure to this portion of the AVSMA for the fall 2006 season, which resulted in the state regulations being applicable. In 2007, the FSB permanently lifted this closure.
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PROPOSAL 71

EFFECT OF THE PROPOSAL: Extend the brown bear season in Unit 26B.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
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PROPOSAL 72

EFFECT OF THE PROPOSAL: Extend the brown bear season in Unit 26B and increase the number of permits available for the drawing permit hunt from 20 to 50.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See issue statement in department proposal 71.
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PROPOSAL 73

EFFECT OF THE PROPOSAL: Open a moose hunting season by registration permit in Unit 26C for residents for 1 bull during Sept. 5–April 15, and for nonresidents for 1 bull with 50 inch antlers or 4 or more brow tines on one side during Sept. 5–Nov. 30.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: Opening a registration permit hunt for bulls will likely result in overharvest. The moose population on the eastern North Slope in Units 26A, 26B, and 26C declined dramatically during the early 1990s. The Unit 26C hunting season has remained closed since 1996 because the population has not increased.

The nature of the terrain and sparse, low vegetation makes it possible for trend surveys to account for a large percentage of the moose in areas supporting major concentrations. Recent

trend surveys conducted by Arctic National Wildlife Refuge (ANWR) staff along drainages of the coastal plain, indicate a population of 47–52 moose. At a 3% harvest rate, 1–2 bull moose can be taken from this population. This quota is already being harvested under federal regulations.

No recent survey data is available south of the coastal plain. During a fall 2002 trend survey in the upper Kongakut and Firth/Mancha drainages, 227 moose were observed. More recent surveys are needed to verify population status in this area. The department intends to work cooperatively with staff from ANWR to determine if some hunting opportunity in the future could be established in these drainages.

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PROPOSAL 74

EFFECT OF THE PROPOSAL: Reduces November bag limit on lynx from 5 to 1 in Units 12 and 20E.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: After receiving further input from area trappers, the Upper Tanana/Fortymile Advisory Committee has indicated they intend to withdraw their proposal and work with area trappers and Fish and Game to use education, through the local media and one-on-one communication, to encourage voluntary compliance with the current regulation. There is no biological concern at this time because the lynx population is nearing a high in their cycle and the November harvest is limited to a few trappers primarily concentrated along the road system.

The original intent of the Unit 12 and 20E November lynx season was to allow trappers to retain up to 5 lynx caught while trapping other furbearer species (marten, fox, coyote, wolf and wolverine) in November. Observations by area trappers, the Alaska Wildlife Trooper in Tok and ADF&G staff, over the past 2 winters, indicate a few trappers are setting traps specifically targeting lynx, as early as the first week in November primarily along the Alaska and Glenn Highways in Unit 12. During the past 2 years, in Unit 20E, there have been few reported observations of trappers specifically targeting lynx in November. In addition, the Taylor highway is not maintained in the winter and is generally more difficult to access than the Glenn and Alaska Highways in Unit 12.

During the 2005 and 2006 seasons, there were no individual trappers reporting more than 5 lynx harvested in November, in Units 12 or 20E. However, it is likely a few trappers have exceeded their November limit and illegally reported harvesting the additional lynx in December.

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PROPOSAL 75

EFFECT OF THE PROPOSAL: Allow black bear trapping in Units 21 and 24.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: The Department does not support trapping of black bears by the general public. The potential for capture of cubs or females with cubs and non-target species such as brown bears would be high. Over the past few years, liberalized regulations for the take of black bears in Unit 19 have not significantly increased bear harvest. Participant interest has been relatively limited and the department does not recommend further liberalized methods that are nonselective and that do not have broad public support, even under the auspices of predator control.
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PROPOSAL 76

EFFECT OF THE PROPOSAL: Split the Tok Management Area (TMA) Dall sheep season into two parts to spread out hunter concentrations.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: One of the management objectives for the TMA (DS102) is to "Prevent unacceptable increases in hunter concentration." Over the past 3–4 years, complaints have increased from hunters, guides and transporters about crowded hunting conditions in the TMA (DS102) during the first 10–14 days of the season. During the 1998–2007 seasons, 69% of DS102 hunter effort occurred during the first 16 days of the hunt (August 10–25). This resulted in greater concentrations of hunters during this period compared to later in the season. Splitting the permits into 2 time periods would more evenly distribute hunters and reduce hunter concentrations to meet the management objective to prevent hunter crowding. A split season is unlikely to affect total harvest, as success rate is closely related to hunter effort, with 66% of the harvest occurring during the first 16 days (August 10–25). Therefore, the number of permits issued is unlikely to change. In addition, the proposed shorter first season (August 10–25) could allow hunters to plan a hunt when the weather is more mild and predictable, while a longer late season (Aug. 26–Sept. 20) will allow hunters more flexibility when weather conditions become more severe and less predictable.
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PROPOSAL 77

EFFECT OF THE PROPOSAL: Allocate 20% of nonresident permits for Tok Management Area Dall sheep hunt to nonresidents who hunt with second-degree kindred Alaska residents.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue. When the Tok Management Area (DS102) was originally developed in 1974, the number of permits issued to nonresidents was limited to a maximum of 10% of the total permits issued annually. This provision was retained through 1985, but discontinued in 1986. During the March 2006 meeting, the Board of Game reinstated this limit beginning in the 2007 season. If the Board chooses to adopt this proposal, the Department recommends specifying up to a certain percentage of permits be allocated to nonresidents hunters who hunt with second degree, rather than a set percentage. "Up to" language is needed because

the numbers of nonresidents permit winners, including those who hunt with second-degree kindred Alaska residents, cannot be predicted prior to the drawing.
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PROPOSAL 78

EFFECT OF THE PROPOSAL: Allow taking any black bear from dens in Units 21 and 24.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: The Department does not typically support taking black bear cubs or females with cubs under hunting regulations. Rather, the department usually recommends that any bear bag limits be considered only as part of predator control programs where kill is closely controlled by permit, and where potential impacts on bear populations have been addressed in predation control implementation plans. However, the department recognizes that hunting bears in dens is a long-practiced tradition for the purpose of securing food in Units 21 and 24. If the Board chooses to accommodate this existing practice, it will be important to limit it only to residents and only to areas where it is a long-term traditional practice. Monitoring will be important. Another possibility would be to create a special permit for this activity.

The board has not yet made a customary and traditional use determination for black bears in Units 21 and 24.
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PROPOSAL 79

EFFECT OF THE PROPOSAL: Allow taking black bear from dens in Units 21 and 24 using artificial light.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: Hunting bears in dens in Units 21 and 24 is a long-practiced tradition for the purpose of securing food. Allowing use of a light would enable hunters to make good shot placements.
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PROPOSAL 80

EFFECT OF THE PROPOSAL: Extend moose season in Units 21D and 24 (Koyukuk CUA) by 5 days to Sept. 25.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See analysis and recommendation for proposal 63.
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PROPOSAL 81

EFFECT OF THE PROPOSAL: Increase the caribou bag limit to 2 bulls within the Dalton Highway Corridor Management Area during July 1–Sept. 31 in Units 20, 24, 25, and 26.

DEPARTMENT RECOMMENDATION: **AMEND AND ADOPT**

RATIONALE: The department recommends amending this proposal to apply to Unit 26B only. The bag limit within the Dalton Highway Corridor Management Area (DHCMA) in Unit 26B during July 1–Sept. 31 is 1 bull caribou for both residents and nonresidents. This proposal would align the DHCMA bag limit with the 2 bull bag limit in the remainder of Unit 26B for both residents and nonresidents. The Central Arctic caribou herd could support additional bull harvest because the herd is increasing, and the current harvest rate of < 3% is sustainable. Additionally, harvest is predominantly bulls (less than 50 females were reported killed annually). Although, more than 70% of the harvest of the Central Arctic caribou herd occurs during the time frame proposed, it is unlikely that a 2 bull bag limit within the DHCMA would substantially increase the overall harvest. The proposal also requests a bag limit of any caribou after October 1 for the DHCMA. This is part of the current regulation.

The department does not support changing the bag limit to 2 bull caribou within the DHCMA in Units 20F, 24, and 25 because there are several caribou populations inhabiting the south side of the Brooks Range, each with different management needs. In some areas, the bag limit is liberal because of potential caribou movement patterns. In other areas, small herds (< 1500 caribou) have ranges that include the DHCMA and harvest is intentionally restricted to protect these herds.

There are some non-biological issues to consider if this proposal is adopted: During the past 6–7 years, several public proposals were submitted to the board in response to concerns about a decline in the quality of hunting conditions related to hunting activity along the road. Issues about hunt quality included use of vehicles to pursue, intercept, or stalk caribou, shooting at running and out-of-range animals, complaints about wounding loss, lower hunter success rates caused by other hunters interfering with a stalk, general disregard for regulations, increased littering, and public image of hunting suffering. Particular user conflicts included conflict with other traffic along the road, specifically commercial traffic and tourism.
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PROPOSAL 82

EFFECT OF THE PROPOSAL: Simplify and align beaver seasons and methods in Region III.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
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PROPOSAL 83

EFFECT OF THE PROPOSAL: Allow use of scent lures in Region III to attract black bears while drifting in a boat.

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.

Changes to allow this type of activity should be brought up in a statewide meeting. Regulation 5 AAC 92.044 was open for consideration at the January 2008 statewide meeting and will next be open for consideration at the 2012 statewide meeting.

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PROPOSAL 84

EFFECT OF THE PROPOSAL: Establish preference point system for Region III.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: The Board considered several such proposals at the statewide meeting in January. The Board asked the department to gather more information on preference point systems in other western states and to present its findings at the Region I meeting in the fall, 2008.

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PROPOSAL 85

EFFECT OF THE PROPOSAL: Longer resident hunting season for Dall sheep in Region III

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue. Providing a longer resident season is used to separate resident and nonresident hunters in many areas, and this proposal might alleviate some conflicts between users. This proposal is less likely to impact the Delta Controlled Use Area and the Tok Management Area where the number of hunters is controlled by the number of permits.

This proposal is not likely to adversely affect sheep populations. It is theoretically possible to take all full-curl rams every year and still have a healthy sheep population. However, adding additional time to the season has the potential to increase harvest in the short-term, decreasing age of harvested rams and overall hunter success in the long-term. Additionally, this proposal

would create 2 different general seasons in the state. Most of the state has a sheep season of Aug. 10–Sept. 20 (excluding subsistence hunts), and the department generally prefers standard seasons and simple regulations whenever possible.

Adding 5 days at the end of the season for resident hunters has the most potential to increase take because sheep are commonly forced to lower elevations by snow. Alternatively, hunters are less likely to hunt during this time because of adverse weather. To lessen the possibility of decreasing the number of full-curl rams available for harvest, alternatives to this proposal could be to 1) decrease nonresident seasons by 2 days in August and/or 5 days in September; 2) add only 2 days to the resident season in August; or 3) add only 5 days to the resident season in September.

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PROPOSAL 86

EFFECT OF THE PROPOSAL: This proposal establishes a wildlife refuge on recently conveyed state lands along the eastern Denali Highway (north of the road).

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: This important wildlife area is involved in a proposal for open pit mining. A large open pit mine would destroy valuable habitat that currently provides wildlife use, recreation use, harvests, etc. and have long-term negative effects on such uses.

There are several avenues available to give special recognition to areas important for game resources. The Legislature has the ability to designate "State Range Areas" such as the Matanuska Valley Moose Range; "Critical Habitat Areas" such as the Chilkat river Critical habitat Area; "State Game Refuges" such as the Minto Flats State Game Refuge; and "State Game Sanctuaries" such as the McNeil River State Game Sanctuary. These designations provide varying levels of recognition and protection to wildlife and habitat resources.

If it is the Board's intent to afford a new category of recognition/protection to wildlife resources under the Board's authority, the department recommends additional discussion and direction to department staff to identify intent and desired outcomes. Dialog with other state agencies (Law, Natural Resources) may also be useful.

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PROPOSAL 87

EFFECT OF THE PROPOSAL: Eliminate the 40 hp boat motor restriction within Holitna–Hoholitna Controlled Use Area (CUA), effectively eliminating the CUA.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The current moose regulations are consistent with the Central Kuskokwim Moose Management Plan and no changes are warranted. Moose hunting has been closed in the Unit 19A portion of the Holitna-Hoholitna CUA since the 2006 season, after measuring low and falling

moose densities (1.25 moose/mi^2 in 1998 to 0.27 moose/mi^2 in 2005). The proposer feels the CUA is unnecessary because there is no current season in Unit 19A. However, the department recommends no change at this time because we expect wolf control programs implemented to increase the moose population will be successful, the season will be reopened, and the CUA will again be needed.

In Unit 19B, densities were considered to be similar to those found in Unit 19A. The current hunt with antler restrictions maintains some hunting opportunity for residents and nonresidents. Fall 2005 composition data (66 bulls:100 cows) indicated the unit could support a modest harvest. The Holitna-Hoholitna CUA, which extends into Unit 19B, helps keep hunting pressure at an appropriate level.

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PROPOSAL 88

EFFECT OF THE PROPOSAL: Reduce the size of the Upper Kuskokwim Controlled Use Area (CUA) to a 5-mile wide corridor along the Kuskokwim River from the Black River to the Swift Fork, and along the Takotna River to Takotna and along the South Fork to Nikolai.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue between hunters that use different modes of transportation. The Upper Kuskokwim CUA was established to address conflicts between hunters using boats and those using aircraft and to provide a reasonable opportunity for subsistence uses. After March 31, 2008, the CUA will be reduced in size to its former geographic area according to a sunset provision in 5 AAC 92.540(7). This will permit aircraft access to a larger portion of Unit 19D, including areas where moose numbers have responded to predator control. If the board adopts this proposal, the Department recommends that a 4-mile wide corridor be established rather than a 5 mile wide corridor, consistent with similar corridors in other parts of Unit 19. The board should also evaluate whether a reduced CUA would still provide a reasonable opportunity for subsistence uses.

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PROPOSAL 89

EFFECT OF THE PROPOSAL: Change closure date for Wood River Controlled Use Area (WRCUA).

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue between hunters that use different modes of transportation. The WRCUA encompasses 972 mi^2 in southcentral 20A. It was established in 1976 to include the Yanert drainage to the south and the Tanana Flats to the north. The purpose of the WRCUA was to reduce conflicts between ATV users and airplane and horse users. Boats and aircraft were the only motorized access allowed for hunting. In 1977 the Tanana Flats portion was removed. In 1983 the Yanert drainage was removed and made into the Yanert

Controlled Use Area with year-round restrictions on use of motorized vehicles for big game hunters, except aircraft. The same year, the WRCUA's most current boundaries were adopted (with the exceptions that the boundary along the Wood River downstream from Snow Mountain Gulch was clarified in 2000 and the western boundary was changed and changed back again in the early 2000s), and motorized vehicles, except aircraft, were restricted from use for the purpose of hunting big game during Aug. 1-Sept. 30.

Most hunters currently access the area via aircraft and horse. Since its inception, the WRCUA has had substantial use by guides accessing the area by aircraft and horseback for moose, sheep, caribou, and grizzly bear. If this proposal is adopted, we would expect to see increased use of the area, increased harvest, and increased user conflicts. Current sheep horn restrictions and caribou drawing permits would prevent overharvest of those species, but the grizzly bear season may need to be shortened. This change would likely have minimal effect on whether antlerless harvest goals are reached in that area because there are few trails emanating from the eastern portion of the WRCUA and antlerless quotas can likely be met with late season hunts, especially as harvest goals are reduced commensurate with reductions in the Unit 20A moose population.
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PROPOSAL 90

EFFECT OF THE PROPOSAL: Eliminate the Wood River Controlled Use Area (WRCUA).

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue between hunters that use different modes of transportation.

The WRCUA encompasses 972 mi^2 in southcentral 20A. It was established in 1976 to include the Yanert drainage to the south and the Tanana Flats to the north. The purpose of the WRCUA was to reduce conflicts between ATV users and airplane and horse users. Boats and aircraft were the only motorized access allowed for hunting. In 1977 the Tanana Flats portion was removed. In 1983 the Yanert drainage was removed and made into the Yanert Controlled Use Area with year-round restrictions on use of motorized vehicles for big game hunters, except aircraft. The same year, the WRCUA's most current boundaries were adopted (with the exceptions that the boundary along the Wood River downstream from Snow Mountain Gulch was clarified in 2000 and the western boundary was changed and changed back again in the early 2000s), and motorized vehicles, except aircraft, were restricted from use for the purpose of hunting big game during Aug. 1-Sept. 30.

Most hunters currently access the area via aircraft and horse. Since its inception, the WRCUA has had substantial use by guides accessing the area by aircraft and horseback for moose, sheep, caribou, and grizzly bear. If this proposal is adopted, we would expect to see increased use of the area, increased harvest, and increased user conflicts. Current sheep horn restrictions and caribou drawing permits would prevent overharvest of those species, but the grizzly bear season may need to be shortened. This change would likely have minimal effect on whether antlerless harvest goals are reached in that area because there are few trails emanating from the eastern

portion of the WRCUA and antlerless quotas can likely be met with late season hunts, especially as harvest goals are reduced commensurate with reductions in the Unit 20A moose population.
****

PROPOSAL 91

EFFECT OF THE PROPOSAL: Create a controlled use area in Unit 20C to stop airboat access on the Kantishna River.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: This is an allocation issue between hunters using different modes of transportation. See analysis and recommendation of Proposal 92 for a broader discussion of the subject that includes this area.
****

PROPOSAL 92

EFFECT OF THE PROPOSAL: Reinstate the Nenana Controlled Use Area in Units 20B and 20C.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue. The Nenana Controlled Use Area existed from 1996 to 2004. It covered northwestern Unit 20A and northeastern Unit 20C, and was about 2419 mi^2 in size. It was bounded on the west by the Kantishna River, on the east by the Wood River, and on the north by the Tanana River. After 1998, it did not restrict airboat use on the main channels of Unit 20C rivers. Its main purpose was to reduce conflicts between airboat users and more traditional travel means and to provide a reasonable opportunity for customary and traditional uses. The conflicts under which it was established primarily concerned moose hunting. It remained controversial throughout its existence.

Airboat use began in the Tanana Flats in the early 1960s. Early airboats were heavy and limited to relatively larger and deeper waterways. Use of airboats was not common until the Trans-Alaska Pipeline construction days. Airboat use first became common on military land in the Tanana Flats. In 1989, the 6th (Light) Infantry Division requested the Army Cold Regions Research and Engineering Laboratory (CCREL) to conduct an evaluation of the environmental impacts of airboat use on military lands. The results of that study were published in a final report in January 1990. The investigators were not able to reach firm conclusions on many aspects of the potential environmental effects of airboats. However, people on both sides of the issue frequently cite portions of the report.
****

PROPOSAL 93

EFFECT OF THE PROPOSAL: Clarify trails with motorized restrictions in the Ladue River Controlled Use Area.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 94

EFFECT OF THE PROPOSAL: Eliminate airborne prohibition for moose hunters in the Koyukuk Controlled Use Area (KUCA) in Units 21D and 24D.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: This is an allocation issue between hunters that use different modes of transportation. Conflict among users groups has greatly decreased since the implementation of permit hunts recommended by the Koyukuk River Moose Management Plan in 2000. However, there are still strong feelings among some users (local and non-local) that airplane hunters would have unfair access or be detrimental to the moose resource within the KCUA if fly-in restrictions were removed. Previous public comments suggest that allowing unrestricted airborne access into all of the KCUA could potentially upset the balance achieved during the planning process.

The KCUA was established in 1978 in an effort to reduce the number of nonlocal hunters accessing the lower Koyukuk River drainage, reduce conflicts between local and nonlocal hunters, and to provide a reasonable opportunity for subsistence uses. The regulation eliminated hunters using aircraft, but the total number of hunters increased because people wishing to hunt moose in the KCUA simply adjusted their method of transportation for accessing the area. From 1983 through 1999, number of hunters increased from 164 to a high of 736 and a registration permit hunt was implemented that did not curb growth in hunter numbers. As a result of the increase in hunters and a concurrent decline in the moose population, it was determined that the level of harvest was not sustainable

In 2000, the Board of Game adopted regulations that created a drawing permit, as a result of recommendations of the Koyukuk River moose management planning effort. Although the number of non-subsistence hunters was effectively capped by the drawing permit, the department and the planning group were concerned about the ability to control the increasing number of hunters participating in the registration permit hunt. Hunt conditions that reflected traditional and customary practices were applied to the registration permit (requirements to saw through the palm of moose antlers and meat-on-the-bone). Those measures have been effective in creating a substantial disincentive for non-subsistence hunters and have regulated the number of hunters who participate in the registration permit hunt.

Hunter numbers and subsequent harvest within the KCUA are now well managed with the issuance of drawing permits. Management of harvest levels and distribution of hunters have also improved with the adoption of the drawing and registration permits in the surrounding areas.

Within the KCUA, bull:cow ratios were steadily declining from 1993–2003. With only 50–51 permits issued in 2004–2007, bull:cow ratios within the KCUA have steadily increased so that the management objective of 30 bulls:100 cows was achieved in 2007.
****

PROPOSAL 95

EFFECT OF THE PROPOSAL: Develop a drawing or registration permit for a 10-day September-only use of licensed motorized vehicles on existing mining roads and trails in Unit 24A to access hunting areas in the Dalton Highway Corridor Management Area.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: The Dalton Highway Corridor Management Area allows the use of licensed highway vehicles on publicly-maintained roads, in compliance with other state and federal laws. The Board of Game does not have the authority to grant access on non-publicly maintained roads on state or federal lands. In addition, under current regulations BLM and DNR do not issue access permits on mining roads or trails for recreational purposes.
****

PROPOSAL 96

EFFECT OF THE PROPOSAL: Allow the use of licensed highway vehicles on existing mining roads and trails during Aug. 31–Sept. 10 in Unit 24A within the Dalton Highway Corridor Management Area.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: The Dalton Highway Corridor Management Area allows the use of licensed highway vehicles on publicly-maintained roads, in compliance with other state and federal laws. The Board of Game does not have the authority to grant access on non-publicly maintained roads on state or federal lands. In addition, under current regulations BLM and DNR do not issue access permits on mining roads or trails for recreational purposes.
****

PROPOSAL 97

EFFECT OF THE PROPOSAL: This proposal requests that a predator control implementation plan be developed in Subunit 9B, 9C and 9E

DEPARTMENT RECOMMENDATION: **AMEND AND ADOPT**

RATIONALE: The Board of Game considered this proposal (original proposal 170) in March 2007 and voted to defer it to the Spring 2008 meeting.

This proposal addresses the concerns for the population status of the Northern Alaska Peninsula Caribou Herd in Subunits 9C and 9E, the Mulchatna Caribou Herd in Subunit 9B, and moose populations. Similar proposals were submitted in 2005 that were not adopted.

The decline of the Northern Alaska Peninsula Caribou Herd is attributed primarily to nutritional limitations. Predation and disease have also influenced the herd's decline. While management of predator populations in Subunits 9C and 9E may slow the population decline, nutritional limitations will prevent recovery. Restrictions on the use of land-and-shoot and aerial-wolf control on federal refuge lands and poor snow conditions during winter will also limit the effectiveness of a predator management program for caribou in this area. Attempting to increase the caribou population may have consequences if range conditions do not improve.

The Mulchatna Caribou Herd is declining, but the reduction of predators in Unit 9 will not reverse the current population trend. Availability of Mulchatna caribou for harvest in Unit 9 varies annually with herd distribution.

The proposal is primarily intended to benefit caribou, however, the author suggests that the moose population will also benefit. The size and status of moose herds in Subunit 9 are difficult to assess. Population trends and harvest indices appear stable. Populations are likely limited by predation on neonates, but it is unlikely that the habitat can support significantly larger populations in most areas. Illegal harvest of cows has also been reported and may contribute to local shortages in easily accessible areas. No reduction in moose harvest opportunity has occurred or is anticipated at this time.

The Department is concerned for the decline in the South Alaska Peninsula Caribou (SAP) Herd. Recent trend counts for this herd have revealed near total calf loss during the past two years. While the Department feels that a predator control plan is not warranted at this time to assist the NAP or the Mulchatna caribou herd we feel there is an opportunity to address the decline in the SAP herd through localized wolf control. Therefore we recommend that the proposal be amended to **include Unit 9D** in a draft predator control plan for Unit 9 to address this declining caribou herd.

****

PROPOSAL 98

EFFECT OF THE PROPOSAL: Establish a wolf control program in GMUs 17B & C, in areas important to Mulchatna caribou.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The Board of Game considered this proposal (original proposal 175) during the March 2007 meeting and voted to defer it to the March 2008 meeting.

Wolf numbers in GMU 17 are healthy, and have likely increased substantially during the last 10 years. Wolves are likely an important predator on caribou in this herd, but we do not know the extent to which that predation might be influencing herd dynamics. This recommendation

remains consistent with past Department recommendations to oppose predator control programs in areas where we have not conducted studies documenting the influence of predation on ungulate populations. The Department feels that the proposed season and bag limit for caribou will continue to provide reasonable opportunity to meet the Amount Necessary for Subsistence.

The Mulchatna Caribou Herd utilizes portions of 5 Game Management Units. Movement patterns from radio-collared animals in this herd indicate much of their movements are unpredictable, which would reduce the effectiveness of any control program. A portion of the Mulchatna calving area is included in the Unit 19A predator control area, providing protection to those calves.

Creation of an area in Unit 17 would likely cause some current control permit holders for Unit 19 to switch to the Unit 17 area, creating an impact on that program. In addition, the Board has recently liberalized brown bear bag limits and seasons, wolf bag limits have been raised to 10 per day, and the use of snow machines allowed.

****

PROPOSAL 99

EFFECT OF THE PROPOSAL: Allow trapping of black and grizzly bears by permit in Unit 19.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The Department does not support trapping of black and brown bears by the general public. The potential for capture of cubs or sows with cubs would be high. Over the past few years, liberalized regulations allowing the take of black and brown bears in Unit 19 under predator control regulations have not significantly increased bear harvest. Participant interest in the existing bear control program has been relatively limited and the department does not recommend further liberalized methods that are nonselective and that do not have broad public support, even under the auspices of predator control.

****

PROPOSAL 100

EFFECT OF THE PROPOSAL: Allow the taking of black bear cubs and females with cubs in intensive management areas and keep the black bear season open all year in Unit 19.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The department does not support taking black bear cubs or females with cubs under hunting regulations. However, within the predation control area (EMMA) in Unit 19D East, the Board may want to consider allowing the practices currently allowed under permit in Unit 16B. These include the take of black bear cubs and black bear females with cubs, same day airborne take of black bears, and the sale of tanned black bear hides under predation control permits. The current hunting regulations in the remainder of Unit 19 provide substantial opportunity to take black bears.

****

PROPOSAL 101

EFFECT OF THE PROPOSAL: Extend the Unit 19A wolf control implementation plan through June 30, 2015.

DEPARTMENT RECOMMENDATION: **DEFER**

RATIONALE: The Unit 19A predation control implementation plan does not expire until June 30, 2009. The department recommends deferring reauthorization of the program until the March 2009 board meeting to allow an additional year of operation before it is evaluated for renewal.
****

PROPOSAL 102

EFFECT OF THE PROPOSAL: Terminate the Unit 19A predator control program.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The department presents to the Board an annual report on all active predator control programs, including whether they should continue. Thus far the Department has not recommended terminating the Unit 19A program, primarily because it has not been in place long enough to evaluate its effectiveness. Termination at this point would be premature
****

PROPOSAL 103

EFFECT OF THE PROPOSAL: Allow take of wolves from dens in Unit 19 predator control areas.

DEPARTMENT RECOMMENDATION: **DEFER**

RATIONALE: During the January statewide Board meeting a similar proposal to allow wolves to be taken from dens was deferred until the November 2008 meeting in Juneau. This proposal should also be considered at that time.
****

PROPOSAL 104

EFFECT OF THE PROPOSAL: Extend the Unit 19D East predation control implementation plan through June 30, 2014.

DEPARTMENT RECOMMENDATION: **DEFER**

RATIONALE: The Unit 19D East predation control implementation plan does not expire until June 30, 2009. The department recommends deferring reauthorization of the program until the March 2009 board meeting to allow an additional year of operation before it is evaluated for renewal.
****

PROPOSAL 105

EFFECT OF THE PROPOSAL: Allow brown and black bear trapping in the EMMA in Unit 19D.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See analysis and recommendation for proposal 99.
****

PROPOSAL 106

EFFECT OF THE PROPOSAL: Terminate the Unit 19D East wolf control program.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The department presents to the Board an annual report on all active predator control programs, including whether they should continue. Thus far the Department has not recommended terminating the Unit 19D East program, primarily because it has not been in place long enough to evaluate its effectiveness. Termination at this point would be premature.
****

PROPOSAL 107

EFFECT OF THE PROPOSAL: Establish additional methods and means for increasing the take of grizzly bears in the Unit 20E brown bear predation control area.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The Department does not support the taking of any grizzly bear by trapping, snaring, or same-day-airborne, or the sale of tanned bear hides, even in brown bear predator control areas. Over the past few years, existing liberalized methods of take in the Upper Yukon/Tanana Brown Bear Predation Control Area have not significantly increased bear harvest. The department does not recommend further liberalized methods that do not have broad public support, and may only detract from on-going control efforts.
****

PROPOSAL 108

EFFECT OF THE PROPOSAL: Modify the Unit 20A wolf predation control plan.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: Modifying the wolf predation control plan in Unit 20A to increase moose calf survival would likely result in additional moose being available for harvest. That harvest would have to include liberal antlerless hunts to prevent the population from increasing and causing further damage to the habitat and adding nutritional stress to the animals. However, public opposition to antlerless hunts has been increasing and the future of these hunts is uncertain. The department proposes to maintain the moose population at its current level while continuing to monitor nutritional status and obtaining public input concerning population and harvest objectives.

****

PROPOSAL 109

EFFECT OF THE PROPOSAL: Change Intensive Management moose population objective in Unit 20A.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: We recommend the Intensive Management population objective be retained at 10,000–12,000 moose. The moose population was reduced from 17,000–18,000 moose in 2003 to 14,500 moose in 2007, and we predict the 2008 population to be 13,000–14,000 moose. The Department proposes to reduce harvest rates in 2008 to stabilize the population at that level, while continuing to monitor nutritional status and obtaining public input concerning population and harvest objectives.

****

PROPOSAL 110

EFFECT OF THE PROPOSAL: Implement the Unit 20A wolf predation control plan to reverse the decline of the Delta caribou herd.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: Wolf control is most likely to benefit the Delta caribou herd on their calving grounds, which are within the Unit 13 wolf control area. During other times of the year, the caribou occupy the same areas in Unit 20A where moose are found and implementing the existing control plan in Unit 20A is not recommended at this time because of moose management considerations. Wolf control would likely increase moose calf survival and result in additional moose being available for harvest. That harvest would have to include liberal antlerless hunts to prevent the population from increasing and causing further damage to the habitat and nutritional stress to the animals. However, public opposition to antlerless hunts has been increasing and the future of these hunts is uncertain. The department proposes to maintain the moose population at its current level while continuing to monitor nutritional status and obtaining public input concerning population and harvest objectives.

****

PROPOSAL 111

EFFECT OF THE PROPOSAL: Modify the Upper Yukon/Tanana Predation Control Program bear control area.

DEPARTMENT RECOMMENDATION: **TAKE NO ACTION**

RATIONALE: See analysis and recommendation for department proposal 107.
****

PROPOSAL 112

EFFECT OF THE PROPOSAL: Adopt a wolf predation control plan for Unit 21E.

DEPARTMENT RECOMMENDATION: **DEFER**

RATIONALE: Currently, the moose population in Unit 21E appears to be stable; however there is concern among local residents that moose numbers have declined since the late 1990s. The department will present an intensive management plan for board consideration that will outline moose management strategy to address this situation. Part of that strategy is to implement wolf control if the moose population declines from its present level. The department recommends deferring board adoption of the wolf control portion of the intensive management plan until the March 2009 board meeting in Anchorage, which would allow time to obtain population data.
****

PROPOSAL 113

EFFECT OF THE PROPOSAL: Terminate the aerial predator control program for Units 20E and 25C.

DEPARTMENT RECOMMENDATION: **DO NOT ADOPT**

RATIONALE: The department presents to the Board of Game an annual report on all active predator control programs, including the Upper Yukon-Tanana program which includes units 20E and 25C. Each report includes a recommendation to the Board whether to continue the program. Thus far the Department has not recommended terminating the Upper Yukon-Tanana predator control program, primarily because it has not been in place long enough to evaluate its effectiveness. Termination at this point would be premature.
****

PROPOSAL 114

EFFECT OF THE PROPOSAL: Reauthorize the antlerless moose season at Berners Bay in Unit 1C.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 115

EFFECT OF THE PROPOSAL: Reauthorize the antlerless moose season in the Gustavus area in Unit 1C.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 116

EFFECT OF THE PROPOSAL: Reauthorize the antlerless moose season at Nunatak Bench in Unit 5A.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 117

EFFECT OF THE PROPOSAL: Reauthorize the antlerless moose season in Unit 6A.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 118

EFFECT OF THE PROPOSAL: Reauthorize the antlerless moose season in Unit 6B.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 119

EFFECT OF THE PROPOSAL: Reauthorize the antlerless moose season in Unit 6C.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 120

EFFECT OF THE PROPOSAL: Reauthorize the antlerless moose season in Unit 14A.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 121

EFFECT OF THE PROPOSAL: Reauthorize the antlerless moose season in portions of Units 7 and 14C.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 122

EFFECT OF THE PROPOSAL: Reauthorize antlerless moose season in the Fort Richardson Management Area in Unit 14C.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 123

EFFECT OF THE PROPOSAL: Reauthorize antlerless moose season in the Anchorage Management Area in Unit 14C.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 124

EFFECT OF THE PROPOSAL: Reauthorize the antlerless moose season in the Birchwood Management Area and the remainder of Unit 14C.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 125

EFFECT OF THE PROPOSAL: Reauthorize the antlerless season on Elmendorf Air Force Base in Unit 14C.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 126

EFFECT OF THE PROPOSAL: Establish a registration moose hunt and reauthorize the antlerless portion of the any-moose drawing permit in the upper Ship Creek drainage in Unit 14C.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 127

EFFECT OF THE PROPOSAL: Reauthorize antlerless moose season in Skilak Loop Wildlife Management Area of Unit 15A.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 128

EFFECT OF THE PROPOSAL: Reauthorize antlerless moose season in a portion of Unit 15C.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 129

EFFECT OF THE PROPOSAL: Reauthorize the antlerless moose season on Kalgin Island in Unit 16B.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 130

EFFECT OF THE PROPOSAL: Reauthorize the antlerless moose season in Unit 20A.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 131

EFFECT OF THE PROPOSAL: Reauthorize the antlerless moose season in Unit 20B.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 132

EFFECT OF THE PROPOSAL: Reauthorize the antlerless moose season in Unit 22C and remainder of Unit 22D.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 133

EFFECT OF THE PROPOSAL: Reauthorize the antlerless moose season in 23.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 134

EFFECT OF THE PROPOSAL: Reauthorize the antlerless moose season in 26A.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 135

EFFECT OF THE PROPOSAL: Reauthorize and modify the antlerless moose season in Unit 20D.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 136

EFFECT OF THE PROPOSAL: Reauthorize the brown bear tag fee exemptions in Region II.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 137

EFFECT OF THE PROPOSAL: Reauthorize the brown bear tag fee exemptions in Region III.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL 138

EFFECT OF THE PROPOSAL: Reauthorize the brown bear tag fee exemptions in Region V.

DEPARTMENT RECOMMENDATION: **ADOPT**

RATIONALE: Staff proposal; see issue statement.
****

PROPOSAL A (deferred Proposal 59 from January 2008 meeting)

EFFECT OF THE PROPOSAL: Prohibit certain traps in Chugach State Park to reduce the take of wolverine, wolves and domestic dogs.

DEPARTMENT RECOMMENDATION: **NO RECOMMENDATION**

RATIONALE: The Board of Game considered this proposal (Proposal 59) during the January 2008 meeting. During that meeting they passed an amended version to limit the use of Conibear style traps (220 or larger) within 100 feet of a trail. Later in the meeting they reconsidered the proposal, further amended it to exclude all snares within 100 feet and voted to defer it to the March meeting to allow the Alaska State Parks the opportunity to comment and/or change their draft proposed regulation package.

During deliberation the Department recommended that the Board consider the recommendation of a previous Board of Game subcommittee of a 50 yard set back for trapping activity even though the subcommittee dissolved before finalizing these recommendations. In addition the Department recommended the Board consider a ¼ mile set back from developed trailheads and campgrounds. Both of these recommendations were to reduce the potential conflict between trappers and other Park users.

Dogs are not required to be leashed within the park, except in campgrounds and at trailheads, and most trails are heavily used. There is the likelihood that dogs could be killed or injured by trapping in these areas. During the winter of 2007-2008 at least 6 dogs have been reported caught by trappers in the Anchorage area. One dog was snared, three caught in foot hold traps and two in Conibear style traps. Two of the six were caught in Chugach State Park. A setback from trailheads, campgrounds and developed trails may alleviate some of these issues.

Wolves and wolverines are among the top viewing species in Chugach State Park. This proposal is partly an allocation issue between wildlife viewing and trapping, because trapping could result in overharvest, considering the small number of wolverines in the unit and the relatively large number of trappers who reside in the Mat-Su Borough and Anchorage.

Tab B. Wood Bison Project Update

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

DIVISION OF WILDLIFE CONSERVATION

SARAH PALIN, GOVERNOR

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December 21, 2007

Dear Alaska wood bison restoration enthusiast:

I want to express my thanks to all the individuals and organizations who contributed comments on the report "Wood Bison Restoration in Alaska: A Review of Environmental and Regulatory Issues and Proposed Decisions for Project Implementation" (Environmenal Review or "ER"). The Alaska Department of Fish and Game (ADF&G) received nearly 100 written comments on the ER, the vast majority of which supported continuing the effort to restore wood bison in Alaska.

I recently approved the attached Review of Public Comment and Notice of Decision on the Environmental Review. The Notice of Decision reviews some of the most significant issues raised in the public comment and outlines how DWC intends to proceed with wood bison restoration in Alaska based on the public comment and other considerations. DWC staff has also prepared a more detailed summary of public comment on the ER which provides a complete description of the extensive public review process and the comments received (available on request).

Based on the local, statewide, and national support expressed during the ER public review process, the ADF&G will continue efforts to restore wood bison in Alaska. The Department will work towards restoring wood bison on Minto Flats first and then proceed with efforts to restore wood bison on Yukon Flats and the lower Innoko/Yukon River area as opportunies arise. The decision notice includes a list of the factors taken into consideration in establishing Minto Flats as the initial location for wood bison restoration, as well as the Department's review and response to several other key issues raised in the public comment.

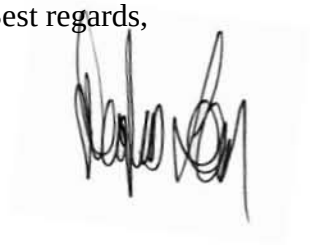
During the last several months DWC staff has been working to obtain the permits necessary to import additional wood bison from Canada in early 2008 or at the earliest opportunity. We have completed a Memorandum of Understanding with the Alaska Wildlife Conservation Center (AWCC) to care for the wood bison and conduct additional health monitoring until the bison are approved to be released into the wild. ADF&G and AWCC have received invaluable support and cooperation from many different agencies and organizations.

As we continue our efforts to make wood bison restoration in Alaska a reality, it will remain important to have continued public support and involvement in the project. In the coming months we will begin site-specific planning for wood bison restoration on Minto Flats and will be seeking volunteers to participate in this cooperative planning effort. We will also prepare another issue of the Wood Bison News to keep you informed about the project.

As always, the Department welcomes any additional ideas or recommendations on how we can best proceed with this important wildlife conservation initiative. If you have any questions or need additional information please feel free to contact Bob Stephenson, Wood Bison Project Biologist (459-7236) or Randy Rogers, Wildlife Planner (459-7335).

Thank you.

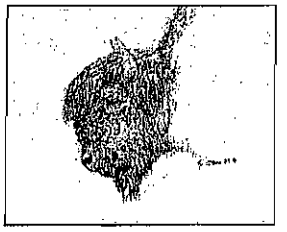
Best regards,



Doug Larsen
Division Director

Enclosure: Summary of Public Comment and Notice of Decision on the Report: "Wood Bison Restoration in Alaska: A Review of Environmental and Regulatory Issues and Proposed Decisions for Project Implementation"

Review of Public Comment
and
Notice of Decision
on the Report:



"Wood Bison Restoration in Alaska: A Review of Environmental and Regulatory Issues and Proposed Decisions for Project Implementation"

December 12, 2007

INTRODUCTION

The report "Wood Bison Restoration in Alaska: A Review of Environmental and Regulatory Issues and Proposed Decisions for Project Implementation" (Environmental Review or "ER") was released for public review and comment on April 17, 2007. The public review process for the ER also provided an opportunity for public review and comment on the draft findings of the Alaska Department of Fish and Game (ADF&G or Department) Wood Bison Restoration Wildlife Transplant Policy Review Committee (WTP Review Committee). ADF&G staff compiled all public comments received through September 30, 2007 and conducted a detailed review and analysis of the comments. This decision notice reviews the general results of the public comment, highlights a few of the main issues raised and provides ADF&G's response to those issues. An outline summarizing the key points about how ADF&G intends to proceed with wood bison restoration in Alaska based on the public comment on the ER and other considerations is provided at the end of this decision notice.

NUMERICAL SUMMARY OF THE PUBLIC COMMENTS

A total of 94 written responses were received during the ER public review process. Of these responses, 57 were provided on the Public Comment Response Forms enclosed in the spring 2007 issue of the Wood Bison News, 21 were e-mails, 14 were letters and 2 were resolutions. The numerical totals of the responses to the three questions included in the Public Comment Response Form provide an indication of the overall public sentiment on a few fundamental questions involving the wood bison restoration program.

Of the 94 comments received 92.5% (87) expressed support for the project and 2% (2) indicated opposition. A few responses that did not clearly express support or opposition to the project, or that placed conditions on their support for the project to an extent that their viewpoint was unclear, were categorized as "other" (5 comments). Most comments received (60%) expressed agreement with ADF&G's proposal to start site-specific planning on both Yukon Flats and Minto Flats, and continue discussing possible wood bison restoration with residents of the lower Innoko/Yukon River area. Among those

comments that addressed the proposed findings of the WTP Review Committee, 95% agreed that wood bison are not likely to adversely affect other species of wildlife or existing human uses of wildlife.

Overall, public comment on the ER demonstrates that there continues to be strong public support for wood bison restoration in Alaska from local, statewide and national interests.

REVIEW AND RESPONSE TO THE MAIN ISSUES RAISED IN PUBLIC COMMENTS

A. Conservation benefits and public support for wood bison restoration in Alaska

Review of Comments: Numerous comments indicated a belief that wood bison restoration is an important wildlife conservation initiative and that wood bison restoration will enhance Alaska's natural and cultural heritage and ecosystem biodiversity. Several international wildlife conservation organizations including the Safari Club International, Wildlife Conservation Society (WCS) and World Wildlife Fund endorsed wood bison restoration in Alaska as a significant wildlife conservation initiative. Comments from the WCS emphasized the importance of wood bison restoration in Alaska as part of the effort to restore the ecological role of bison in their historic range in North America. The Alaska Outdoor Council stated "The concept of restoring wood bison to their former range is a conservation goal of the highest order in terms of ecosystem and human values." Two respondents expressed strong disagreement with the concept of regarding wood bison as part of the natural ecological diversity of wildlife in Alaska. These comments also questioned whether extirpation of wood bison in Alaska was the result of habitat change or human interference and whether it is appropriate for humans to return wood bison to Alaska.

Response: Comments received indicate that the vast majority of the interested public believes that wood bison restoration will enhance the Alaska's wildlife diversity and will not result in adverse ecological effects. During the more than ten years since wood bison restoration in Alaska was first considered there has been extensive review of the history of wood bison in Alaska and the potential biological and ecological effects of wood bison restoration. Despite whatever uncertainty may exist regarding the cause of wood bison extirpation in Alaska, there is no indication that there was ever a point in time when substantial suitable wood bison habitat did not exist, and there is no way to explain the disappearance of wood bison in Alaska in the absence of significant human influence. The conclusion that humans played a role in the extirpation of wood bison in Alaska is consistent with published historical information and is generally accepted by the scientific community. ADF&G finds that existing scientific information supports the conclusion that wood bison should be considered an extirpated indigenous species in Alaska and that restoration of wood bison will not result in adverse ecological impacts. The Department will continue efforts to restore wood bison in Alaska to enhance the wildlife and ecological diversity of our state and provide new opportunities for human use and enjoyment of wildlife.

B. Priority location for initial wood bison restoration efforts

Review of Comments: Most comments received (60%) agreed with ADF&G's proposal to start site-specific planning on both Yukon Flats and Minto Flats, and continue discussing possible wood bison restoration with residents of the lower Innoko/Yukon River area. Only 3 responses indicated disagreement with the proposed course of action. A significant number of responses (37%) were categorized as "other" because they recommended different priorities for moving forward, did not express a preference for which site should be pursued first or did not address that topic.

Of those comments that recommended a preference or priority for a particular site other than the proposed action, support was fairly even between Minto Flats (16 comments) and Yukon Flats (14) with fewer responses recommending the lower Innoko/Yukon River area (5) as the preferred location. There were a significant number of comments that recommended putting wood bison on state lands at Minto Flats where implementation costs would be lower because of road access and which is largely under the control of state land managers and the Alaska Board of Game.

Doyon, Ltd. and some residents of Yukon Flats expressed concerns that wood bison restoration might cause complications in developing oil and gas resources on the Yukon Flats if there was a change in the status of wood bison populations in Alaska under the Endangered Species Act (ESA, see additional discussion under topic *G* below). Doyon also has concerns about wood bison restoration affecting possible oil and gas development on Minto Flats however, the main area being considered for oil and gas development is south of the Tanana River, outside of the Minto Flats State Game Refuge.

Response: Based on the number of comments that advocated placing wood bison on state lands in the Minto Flats area and other considerations, ADF&G will shift the priorities described in the proposed action in the ER and work first to initiate site-specific planning for wood bison restoration on Minto Flats. Additional reasons for working to restore wood bison Minto Flats first include:

1. The majority of lands in the Minto Flats area are within the Minto Flats State Game Refuge which was established to ensure protection and enhancement of habitat, conservation of fish and wildlife, and continuation of hunting, fishing, trapping and other compatible uses.

2. The Minto-Nenana, Tanana-Manley-Rampart and Fairbanks State Fish and Game Advisory Committees (AC) have all expressed support for wood bison restoration on Minto Flats.

3. Availability of road access to Minto Flats will help to reduce logistical complications and costs.

4. Because there is little to no federal land in the Minto Flats area the Alaska Board of Game will have responsibility for decisions about subsistence use and future harvest allocation.

5. The ADF&G Wildlife Transplant Policy Review Committee recommended pursuing wood bison restoration on Minto Flats first.

6. Working to restore wood bison on Minto Flats first will allow more time to address concerns about the possible impacts of wood bison restoration on oil and gas development on Yukon Flats. This will allow residents of the area and others an opportunity to more fully discuss these two proposals and resolve concerns before a decision is made to proceed with site-specific planning for wood bison restoration on Yukon Flats.

While the above factors provide strong reasoning to work towards establishing wood bison on Minto Flats as the initial site, the size of the area and proximity to other development limit the potential size of the herd to about 500 animals. Habitat assessments indicate that Yukon Flats can easily support a herd of 2,000 or more bison and ADF&G remains committed to the objective of establishing one or more larger herds of wood bison to help maintain the genetic diversity of the subspecies.

The Grayling-Anvik-Shageluk-Holy Cross Advisory Committee and residents of the lower Innoko/Yukon River have expressed strong support for wood bison restoration in the lower Innoko/Yukon River area. In November 2007 the Yukon Flats Advisory Committee passed a motion supporting continuing efforts to resolve issues involving wood bison restoration on Yukon Flats and requesting that ADF&G continue discussions about possible wood bison restoration ADF&G with residents of Yukon Flats. The ADF&G will proceed with wood bison restoration in one or both areas based on the level of support from local residents and others and as opportunities arise in the future. If substantial concerns remain about the possibility that wood bison will adversely affect oil development on the Yukon Flats because of the potential future application of the ESA or other issues, the lower Innoko/Yukon River area may become the second priority site for wood bison restoration.

The ADF&G wood bison restoration program is not intended to continue indefinitely. The Department must work with local residents and others to implement restoration programs in suitable locations as efficiently and expeditiously as possible, while wood bison stock and other resources are available. We hope that concerns about wood bison restoration and oil development on Yukon Flats can be adequately resolved in the near future so that wood bison can be restored on Yukon Flats while the opportunity exists.

C. Hunting and future allocation of wood bison harvest

Review of Comments: Many people submitted comments emphasizing the importance of both local and non-local hunters having opportunities to share in future harvest of wood bison. Several comments stated that wood bison have been absent from Alaska for many years and that state or federal subsistence laws should not apply to wood bison. Some comments expressed concern that if wood bison are placed on federal lands, the Federal Subsistence Board (FSB) could allocate the entire harvestable surplus to rural residents and that others will not have an opportunity to hunt wood bison. Some comments that opposed subsistence use of wood bison also acknowledged that local residents have some proprietary interest in the use of local resources, and that there does need to be

mechanisms to ensure that local residents have adequate opportunities to harvest wood bison.

Several comments from local residents highlighted the importance of having opportunities to benefit from the harvest of wood bison near local villages, and the need to protect wood bison from illegal harvest, especially while the herds are growing. Some of the comments from Yukon Flats noted the very low moose population in the area and the need for additional subsistence resources. One comment stated that the ER was inadequate in explaining how Native owned lands will be impacted and what use of the bison resource will be available to the local people. Some comments that supported Minto Flats as the initial site also supported eventually restoring wood bison at one or both of the other sites and acknowledged that these areas, which can support larger herds of wood bison, can eventually provide more harvest opportunities for all users, even if federal lands are involved. Finally, several comments recognized that different interest groups must first work together to get wood bison restored in Alaska or there will be no harvest opportunities for anyone.

Response: ADF&G remains committed to ensuring that the benefits of wood bison restoration are shared among local and non-local residents of Alaska and others. Whether or not wood bison are identified by the Board of Game (BOG) and/or FSB as a subsistence species, there are challenges involved in establishing harvest management programs that provide opportunities for various user groups. ADF&G believes that by working with local and non-local hunters and others we can develop recommendations to the BOG and FSB to provide a framework for sharing in the future benefits of wood bison restoration. Future harvest management will be an important topic during site-specific planning efforts in which both local and non-local interests will be involved.

D. Cooperative management of wood bison

Review of Comments: Some comments emphasized the importance of involving tribal councils and Native corporations in management of wood bison. A few comments suggested that wood bison should be managed by tribes and not the state or federal government. Comments from Stevens Village requested the state's cooperation in efforts to establish captive wood bison herds on lands near their village.

Response: ADF&G has always expressed an interest in close cooperation with local residents, Native organizations and others in managing wood bison. We recognize the need for cooperative agreements with local landowners for use of land for temporary wood bison holding facilities which in many cases may be located on Native village and regional corporation lands. When suggestions for tribal management of wood bison have been made ADF&G staff has explained that the state can only pursue wood bison restoration under the existing legal framework of wildlife management in Alaska and the Department has no authority to place wood bison herds under tribal management. Nonetheless, this does not prevent ADF&G from working closely with local and non-local interests in wood bison restoration and management, and cooperative management will be an important part of the restoration program.

E. Predator management in relation to wood bison restoration

Review of Comments: Several respondents agreed that predation should not be a significant threat to wood bison restoration in Alaska, while others expressed concern that wolf predation on wood bison could be significant and limit success of the restoration effort. One comment recommended that the option for predator control should not be categorically eliminated since there is some uncertainty about what will be required to ensure the restoration effort is successful.

Response: Based on experience in Canada ADF&G continues to believe that predator control is not likely to be required to ensure that wood bison restoration is successful. We also agree that we cannot foresee all future circumstances. Predator management to benefit wood bison could be considered at some time in the future if a compelling reason exists. If predator management for the benefit of wood bison were proposed there would be additional opportunity for public review and comment through the BOG process.

F. Wildlife diseases and wood bison genetics

Review of Comments: A few concerns were expressed about possible transmission of disease to wildlife and the regulatory difficulties associated with the closure of the U.S. – Canada border to import of cattle and bison due to concerns about Bovine Spongiform Encephalopathy (BSE or Mad Cow Disease). One comment suggested that based on experience with the Delta Bison Herd that was established with only a small founding herd and has done fine, at least in the short term, it is not necessary to worry about maintaining genetic diversity in wood bison herds.

Response: In November 2007 the U.S. Department of Agriculture (USDA) finalized regulations that now allow import of wood bison from Canada to Alaska. This action removes one of the major obstacles to wood bison restoration in Alaska that has existed for several years.

ADF&G is working closely with the Alaska State Veterinarian, USDA and others to ensure to the greatest extent possible that any wood bison imported or released in Alaska are free of disease. ADF&G and a variety of wildlife and health agencies in Canada have contracted with the Centre for Coastal Health in British Columbia to complete a full evaluation of the risk of wood bison from Elk Island National Park carrying Mycobacterium avium paratuberculosis into Alaska. Disease testing procedures will comply with USDA requirements to test for tuberculosis and brucellosis. Wood bison will also be tested for bacterial diseases (Leptospirosis, Anthrax, and Mycobacterium avium paratuberculosis) and treated for ectoparasites according to the requirements of the Alaska State Veterinarian and the DWC Wildlife Veterinarian.

The WTP Review Committee considered public comments on genetic diversity and in their final recommendations to the Director stated "ADF&G has properly considered the importance of large herds in maintaining genetic diversity in its wood bison restoration plans and should continue to emphasize that objective." In addition to pursuing wood bison restoration on the Minto Flats, the Department will pursue opportunities to

establish larger herds to maximize the genetic diversity of wood bison and the benefits to people and the environment in Alaska.

G. Status of wood bison under the Endangered Species Act

Review of Comments: Several comments addressed the status of wood bison under the ESA. Most of these comments emphasized the need for ADF&G to continue to work with the U.S. Fish and Wildlife Service (USFWS) and others to ensure that wood bison are properly addressed according to the ESA and that any risk of wood bison restoration interfering with other resource development is minimized. Comments from Doyon, Ltd. expressed concern that wood bison brought into Alaska would eventually be listed under the ESA as an endangered species, and that this could cause significant impacts to other resource development projects.

Response: Since the ER was released ADF&G has continued to consult with the USFWS to obtain clarification of the legal basis for their determination that the status of wood bison under the ESA as "endangered in Canada" does not need to be revised if populations of wood bison are established in Alaska. The Department has also attempted to identify any other options that would provide additional assurance that wood bison will not become listed under the ESA. Because of the on-going concerns of Doyon, Ltd. and others regarding the potential future legal status of wood bison in Alaska under the ESA, ADF&G staff assembled all available information on this topic and requested an informal legal review from the Department of Law (DOL). In their preliminary findings DOL attorneys concluded that the existing correspondence from the USFWS does not provide a solid legal rationale for their policy determination that wood bison brought into Alaska would not be listed under the ESA. DOL concurred with ADF&G staff that a review of the 5 factors listed in Section 4 of the ESA to be taken into consideration in determining if a species should be listed suggests that listing would not likely be warranted. DOL did, however, conclude there remains some legal risk of wood bison in Alaska being listed under the ESA, even though no organization has advocated for that result up to this point.

In November 2007 Canada's Wood Bison Recovery Team filed a petition with the USFWS to downlist wood bison from "endangered" to "threatened" to match the current status of wood bison under Canadian law. Because the USFWS needs to address a backlog of listing issues first, it is likely to be at least two years before a downlisting petition would be addressed. ADF&G is working in cooperation with DOL and others to consider the possibility of submitting a request to the USFWS to designate wood bison in Alaska as a "non-essential experimental population" under Section 10(j) of the ESA. If this action were to occur, wood bison would be treated as "proposed for listing" on state and private lands and "threatened" on National Park and Wildlife Refuge lands and there would be no requirement to designate "critical habitat."

ADF&G will continue to work with the USFWS, Doyon and others to evaluate options and develop strategies to minimize the risk that wood bison in Alaska will become listed as an endangered species. The Department will continue to work to cooperatively to minimize impacts to other resource development activities that could result from wood bison restoration due to provisions of the ESA.

H. Wood Bison Project Funding

Review of Comments: The main concern expressed about wood bison project funding is that funds contributed nationally through taxes on firearms and ammunition (Pittman-Robertson Funds) and hunting license sales in Alaska (Alaska Fish and Game Fund) would be used to establish a species that might only be available for subsistence harvest. There was also a request for more specific information on how the project is being funded and a recommendation to pursue funding sources in addition to Pitman-Robertson and the Alaska Fish and Game Fund.

Response: Pittman-Robertson and the Alaska Fish and Game Fund has been used to pay salaries and support some other aspects of the wood bison project but ADF&G does not plan to rely on these funds as the only source of financial support for the project. There has been significant interest among private wildlife conservation organizations and other private entities in contributing funding and other support for the wood bison project. As is acknowledged in the Environmental Review, that report was funded, in part, by contributions from the Safari Club International Club Foundation (SCI), the Pope & Young Club and the federal State Wildlife Grant (SWG) program. SCI has also contributed a substantial amount for the development of temporary wood bison holding facilities at the Alaska Wildlife Conservation Center (AWCC) at Portage.

The Turner Endangered Species Fund, a private wildlife conservation foundation has pledged a substantial amount of money to help pay the cost of purchasing and transporting wood bison stock from Canada. In addition, ADF&G has completed a Memorandum of Understanding with AWCC that includes a provision to establish an Alaska Wood Bison Conservation Fund. This fund can be used to receive donations and grants from a wide variety of sources to pay for wood bison restoration project costs. The Department is preparing a SWG project proposal for wood bison restoration planning and implementation and can use private funds for the required 50: 50 cost sharing requirement. ADF&G may also submit a legislative proposal for Capital Improvement Project funding for the wood bison restoration project at some time in the future. Any Pittman-Robertson and State Fish and Game Fund dollars used to support wood bison restoration have not and will not detract from the Department's ability to manage other wildlife species. As noted previously, the Department remains committed to ensuring that the benefits of wood bison restoration are shared among local and non-local hunters, regardless of the sources of money that are used to fund the project.

DECISIONS FOR PROCEEDING WITH WOOD BISON RESTORATION IN ALASKA

- ADF&G will continue efforts to restore wood bison in Alaska to enhance the wildlife and ecological diversity of our state and provide new opportunities for human use and enjoyment of wildlife.

- Minto Flats will be the first area where the Department will conduct site-specific planning and work to implement wood bison restoration.

- While Minto Flats will be the first priority for wood bison planning and restoration, the Department will also pursue opportunities to restore wood bison on Yukon Flats and the lower Innoko/Yukon River areas.

- ADF&G will consider the level of support from local residents and others in making decisions about proceeding with site-specific planning for wood bison restoration on the Yukon Flats and in the lower Innoko/Yukon River area. The Department hopes to proceed with wood bison restoration in one or both areas at the earliest opportunity.

- Diverse interests in wildlife and land management, including representatives of state fish and game advisory committees, local and non-local hunters, landowners and conservation organizations will have an opportunity to be involved in site specific wood bison restoration planning efforts.

- ADF&G remains committed to ensuring that the benefits of wood bison restoration are shared among local and non-local residents of Alaska as well as others. Future harvest management will be an important topic during site-specific planning efforts. In this setting, local and non-local interests can work cooperatively to develop recommendations to the BOG and/or the FSB for principles to guide harvest allocation in the future.

- ADF&G will seek to develop agreements with landowners and others to provide temporary facilities necessary for wood bison restoration and to involve local residents and other wildlife users in cooperative management of wood bison.

- Predator control is not likely to be required and is not part of the program necessary to ensure that wood bison restoration Alaska is successful. The Department does, however, recognize that all future circumstances cannot be foreseen. Predator management to benefit wood bison could be considered at some time in the future if a compelling reason exists. If predator management for the benefit of wood bison were proposed there would be additional opportunity for public review and comment through the BOG process.

- ADF&G will continue to coordinate health monitoring efforts with the Alaska State Veterinarian, U.S. Department of Agriculture and others to ensure that any wood bison imported into Alaska and released into the wild are free of disease.

- ADF&G will continue to work with the Alaska Department of Law, U.S. Fish and Wildlife Service, Doyon, Ltd. and others to minimize the risk that wood bison in Alaska will become listed as "endangered" under the U.S. Endangered Species Act and, if listing were somehow to occur, work within the provisions of the ESA to prevent or minimize impacts on other resource development activities.

- ADF&G will continue to seek funding for wood bison restoration from a variety of private and governmental sources, and will not allow allocation of resources to the wood bison restoration project to limit the Department's ability to manage other resident species of wildlife.

DECISION BY THE DIRECTOR, DIVISION OF WILDLIFE CONSERVATION

I have reviewed the summary of public comment on the ER and conclude there is strong public support to continue the effort to restore wood bison in Alaska. I concur with the findings of the WTP Review Committee that wood bison restoration is not likely to effect a significant reduction in the range, distribution, habitat, or pre-existing human use of other species. I direct Division of Wildlife Conservation staff to proceed with efforts to restore wood bison in Alaska according to the decision points listed above, continue efforts to import additional wood bison stock from Elk Island National Park in Canada, initiate cooperative planning for wood bison restoration on the Minto Flats and proceed with further consideration of wood bison restoration on Yukon Flats and the lower Innoko/Yukon River as expeditiously as possible.

Douglas N. Larsen, Director

12/17/07

Date

Tab C. Statewide Harvest for Intensive Management Areas

Reported harvest by regulatory year from Survey and Inventory reports for caribou herds or by Game Management Unit (GMU) for moose populations in Alaska. Harvest objective is the lower range under intensive management (5 AAC 92.108), with harvest at or above the objective listed in bold font. Treatments to increase prey populations or harvest included antlerless harvest, habitat enhancement, antlerless and habitat, predator control by permit, and liberalized predator harvest. Effectiveness of treatments in achieving harvest objectives cannot be inferred from this table. Figures for regulatory year 2007 are preliminary.

Herd / GMU	Objective	2000	2001	2002	2003	2004	2005	2006	2007
Caribou:									
Central Arctic	1400	493	515	423	419	626	660	--	--
Delta[a]	300	24	33	37	33	46	35	25	58
Fortymile[b]	1000	145	693	860	799	846	741	852	--
Macomb[c]	30	22	**43**	25	29	7	18	21	--
Mulchatna[c2]	6000	4096	3830	2537	3182	2236	2175	921	--
Nelchina[d]	3000	1090	1500	1344	1087	1261	2816	**3090**	1206
N. AK Penins.[e]	800	91	89	82	124	34	0	0	0
Porcupine[f]	1500	72	114	76	128	67	42	--	--
S. AK Penins.[g]	200	71	56	70	50	77	61	58	0
Teshekpuk	900	--	--	--	--	--	--	--	--
West. Arctic	12,000	778	505	689	549	799	762	714	--
Moose:									
9B	100	48	48	38	38	39	39	26	30
9C	165	126	119	131	133	117	115	97	73
12	250	112	101	124	134	137	136	117[h]	112
13A[i]	210	115	122	169	175	**214**	187	**225**	**173**
13B[i]	310	148	125	163	179	129	148	173	**123**
13C[i]	155	101	63	80	71	62	61	57	**62**
13D[i]	75	**77**	59	62	68	68	72	68	**54**
13E[i]	300	96	86	90	117	120	121	155	**112**
14A[j]	360	320	**383**	**544**	**594**	**498**	**529**	**529**	**379**
14B	100	55	67	67	56	48	47	57	48
14C[k]	90	88	87	**97**	**117**	83	**101**	**113**	**110**
15A	180	131	**228**	141	176	131	123	130	102
15C[k2]	200	**208**	**313**	**287**	**339**	**301**	**302**	**232**	191
16A	190	140	153	154	167	139	108	114	77
16B excl Kalg	310	242	122	72	163	164	138	109	--
17B[l]	200	**226**	186	183	163	168	117	113	--
17C[m]	165	136	**222**	**210**	**251**	**193**	**232**	**233**	--
18	60	**181**	**164**	**225**	**233**	**226**	**342**	**335**	**336**
19A[n]/B	750	259	209	197	120	154	218	70	81
19D East[o]	400	--	73	98	75	60	72	62	85
19D Rem.	250	--	21	17	16	10	23	20	21
20A[p]	1400	613	615	479	507	986	1133	1059	819
20B[q]	600	**678**	591	**788**	**605**	571	**600**	**779**	**674**
20C exc NPS	150	130	142	131	105	99	134	143	133
20D[r]	500	246	182	228	227	202	245	354	**773**
20E[s]	500	135	138	170	129	94	137	129	139
21D[t]	450	335	298	326	320	227	214	210	205
21E[u]	550	201	179	157	148	118	123	130	99
22[v]	300	210	130	174	198	195	164	176	176
23[w]	210	132	126	138	143	116	82	81	--

Herd / GMU	Objective	2000	2001	2002	2003	2004	2005	2006	2007
24A[x]	75	39	36	37	27	34	30	25	21
24B	150	59	51	56	36	27	41	29	43
24C[y]	50	31	27	31	25	20	16	13	13
24D[y]	225	83	75	74	75	44	74	74	101
25D[z]	600	21	16	24	12	8	--	--	--

[a]Drawing hunt DC827
[b]Registration hunts RC860 and 867
[c]Registration hunt RC835
[c2]Includes registration hunt RC504
[d]Tier II hunt TC566, drawing hunt DC590, and Federal Subsistence hunts FS412, 513, and 514
[e]Tier II hunt TC505
[f]Harvest reporting from Canada unavailable
[g]Registration hunt RC510
[h]GMU 12 north of the Alaska Highway became part of upper Yukon/Tanana Predation Control Area
[i]Includes Tier II hunt TM300, and Federal Subsistence hunts FM313 and 314
[j]Includes drawing hunts DM400-412
[k]Includes registration hunts RM435 and 445 and drawing hunts DM210, 422-425, 427, 428, 430, 441, 443, 445-449, and 666
[k2]Includes drawing hunt DM549 and Tier II hunt TM549
[l]Includes registration hunts RM583, 585, and 587
[m]Includes registration hunts RM575, 583, and 585
[n]Includes Tier II hunts TM680 and 684
[o]Registration hunt RM 650 since regulatory year 2001 (1 July 2001 to 30 June 2002), although prior to RY04 there was also a winter hunt in GMU 19D that is not included in these figures
[p]Includes registration hunts RM764 and 768 and drawing hunts DM768-774
[q]Includes registration hunts RM775 and 785 and drawing hunts DM776-779 and 788
[r]Includes drawing hunts DM790, 792, and 797-799
[s]Includes registration hunt RM865 and drawing hunts DM794 and 796
[t]Includes registration hunts RM832 and 834 and drawing hunts DM815-820, 823, 825, and 827-830
[u]Includes drawing hunts DM837 and 839
[v]Includes registration hunts RM840, 849, 850, and 852 and drawing hunts DM840 and 845.
[w]Includes registration hunt RM880 and drawing hunts DM871-877.
[x]Includes drawing hunts DM920 and 922. Unit 24 was subdivided in 2006, so harvest by subunit for previous years was calculated by Uniform Coding Units. Harvest reported as "24Z" was allocated by proportional area of subunit.
[y]Includes registration hunt RM832 and drawing hunts DM823, 825, 827-830, and 896
[z]Includes Tier II hunt TM940 and community hunt CM001

Estimated harvest by regulatory year from Survey and Inventory reports for caribou herds or by Game Management Unit (GMU) for deer and moose populations in Alaska. Harvest objective is the lower range under intensive management (5 AAC 92.108), with estimated harvest at or above the objective listed in bold font. Estimated harvest for deer is based on a mail survey of hunters, whereas for caribou and moose it is the reported harvest corrected by subsistence surveys or other means for non-reported harvest and illegal take (assumes high salvage rate for charity). Treatments to increase harvest included antlerless harvest, habitat enhancement, predator control by permit, liberalized predator harvest, and antlerless and habitat. Effectiveness of treatments in achieving harvest objectives cannot be inferred from this table. Figures for regulatory year 2007 are preliminary. ADF&G does not condone illegal take for achieving IM objectives.

Herd / GMU	Objective	2000	2001	2002	2003	2004	2005	2006	2007
Deer:									
1A	700	268	367	250	212	391	268	509	--
1C	450	241	380	358	**467**	352	**506**	**641**	--
2	2700	**3028**	**2865**	2169	1823	2147	**2820**	**3027**	--
3	900	**1024**	858	624	**938**	**921**	718	681	--
4	7800	5912	7456	5115	7622	6797	6983	7741	--
6	2200	2121	**3301**	**2389**	**3759**	--	**3370**	**3011**	--
8	8000	2,491	2,899	3,143	4,984	--	6,471	5,428	--
Caribou:									
Central Arctic	1400	743	765	673	669	876	910	--	--
Delta[a]	300	28	39	44	39	54	41	29	68
Fortymile[b]	1000	150	708	903	839	880	759	868	--
Macomb[c]	30	22	**43**	25	29	7	18	21	--
Mulchatna[c2]	6000	**9000**	**6330**	5037	5682	4236	3675	1921	--
Nelchina[d]	3000	1140	1550	1394	1137	1311	2866	**3140**	1256
N. AK Penins.[e]	800	120	120	110	200	60	0	10	10
Porcupine[f]	1500	372	514	376	628	267	542	--	--
S. AK Penins.[g]	200	100	90	100	80	110	90	90	30
Teshekpuk	900	**2766**	**2805**	**4463**	**3307**	**3996**	**4129**	**2766**	--
West. Arctic	12,000	**15,678**	**14,905**	**14,689**	**11,549**	**15,799**	**14,762**	**14,714**	--
Moose:									
9B	100	**100**	**100**	90	90	90	90	80	80
9C	165	**180**	**170**	**180**	**180**	**170**	**170**	150	120
12	250	172	161	184	194	197	196	167[g]	162
13A[i]	210	125	132	179	185	**224**	197	**235**	185
13B[i]	310	158	135	173	189	139	158	183	163
13C[i]	155	106	68	85	76	67	66	62	68
13D[i]	75	**87**	69	72	**78**	**78**	**82**	**78**	72
13E[i]	300	111	101	105	132	135	136	170	132
14A[j]	360	**402**	**467**	**627**	**683**	**582**	**615**	**617**	**445**
14B	100	82	94	94	82	83	72	83	73
14C[k]	90	**108**	**107**	**117**	**137**	**103**	**121**	**133**	**130**
15A	180	171	**268**	**181**	**216**	171	163	170	142
15C[k2]	200	**238**	**343**	**317**	**369**	**331**	**332**	**262**	**221**
16A	190	175	189	**191**	**205**	174	141	147	107
16B excl Kalg	310	287	157	107	203	204	173	144	--
17B[l]	200	**226**	186	183	163	168	117	113	--
17C[m]	165	137	**224**	**210**	**251**	**193**	**232**	**233**	--
18	60	**181**	**164**	**225**	**233**	**226**	**342**	**335**	**336**
19A[n]/B	750	344	275	198	145	179	243	95	106

Herd / GMU	Objective	2000	2001	2002	2003	2004	2005	2006	2007
19D East[o]	400	--	78	103	80	65	72	65	90
19D Rem.	250	--	26	22	21	15	28	25	26
20A[p]	1400	731	786	540	703	1187	1334	1246	964
20B[q]	600	842	731	974	760	730	706	917	793
20C exc NPS	150	153	167	154	124	118	157	167	156
20D[r]	500	310	231	274	279	251	303	432	925
20E[s]	500	150	153	185	144	109	153	145	154
21D[t]	450	515	461	490	484	389	377	377	371
21E[u]	550	267	238	209	197	157	164	173	132
22[v]	300	311	217	262	288	286	189	201	202
23[w]	210	557	551	563	568	541	507	506	--
24A[x]	75	--	--	--	--	--	--	30	--
24B	150	--	41	47	--	--	--	78	--
24C[y]	50	--	87	67	--	--	--	44	--
24D[y]	225	--	--	--	--	--	--	126	--
25D[z]	600	200	200	200	200	200	200	200	--

[a]Drawing hunt DC827
[b]Registration hunts RC860 and 867
[c]Registration hunt RC835
[c2]Includes registration hunt RC504
[d]Tier II hunt TC566, drawing hunt DC590, and Federal Subsistence hunts FS412, 513, and 514
[e]Tier II hunt TC505
[f]Harvest reporting from Canada unavailable
[g]Registration hunt RC510
[h]GMU 12 north of the Alaska Highway became part of upper Yukon/Tanana Predation Control Area
[i]Includes Tier II hunt TM300, and Federal Subsistence hunts FM313 and 314
[j]Includes drawing hunts DM400-412
[k]Includes registration hunts RM435 and 445 and drawing hunts DM210, 422-425, 427, 428, 430, 441, 443, 445-449, and 666
[k2]Includes drawing hunt DM549 and Tier II hunt TM549
[l]Includes registration hunts RM583, 585, and 587
[m]Includes registration hunts RM575, 583, and 585
[n]Includes Tier II hunts TM680 and 684. Correction for unreported harvest since RY03 is estimated at 25 moose primarily from Unit 19A.
[o]Registration hunt RM 650 since regulatory year 2001 (1 July 2001 to 30 June 2002), although prior to RY04 there was also a winter hunt in GMU 19D that is not included in these figures. Correction for unreported harvest in RM 650 is estimated at 5 moose and the same in 19D remainder.
[p]Includes registration hunts RM764 and 768 and drawing hunts DM768-774
[q]Includes registration hunts RM775 and 785 and drawing hunts DM776-779 and 788
[r]Includes drawing hunts DM790, 792, and 797-799
[s]Includes registration hunt RM865 and drawing hunts DM794 and 796
[t]Includes registration hunts RM832 and 834 and drawing hunts DM815-820, 823, 825, and 827-830
[u]Includes drawing hunts DM837 and 839
[v]Includes registration hunts RM840, 849, 850, and 852 and drawing hunts DM840 and 845.
[w]Includes registration hunt RM880 and drawing hunts DM871-877.
[x]Includes drawing hunts DM920 and 922. Unit 24 was subdivided in 2006, so harvest by subunit for previous years was calculated by Uniform Coding Units. Harvest reported as "24Z" was allocated by proportional area of subunit.
[y]Includes registration hunt RM832 and drawing hunts DM823, 825, 827-830, and 896
[z]Includes Tier II hunt TM940 and community hunt CM001

Format for Preparing an Intensive Management Plan

Version 2, August 24, 2007

This Intensive Management Plan (IM Plan) format provides a framework for Division of Wildlife Conservation staff to use to compile the key biological and human use information necessary for Intensive Management (IM) decision-making. Developing a standardized approach for preparing IM Plans is an on-going project and this format will be revised and updated as needed based on input for Area Biologists and others. This IM Plan format has been designed primarily to address situations where there is a desire to increase moose or caribou populations to provide for more harvest. The format can also be adapted to address a situation where there is already an abundant ungulate population and the objectives are to increase harvest, manage population growth, maintain habitat and manage predation through hunting and trapping.

Appendix A outlines the procedures needed to ensure compliance with the current IM laws and identify what Board of Game (Board) findings and determinations may be needed to support a proposal to establish a Predation Control Areas Implementation Plan under 5 AAC 92.125. This can serve as a checklist for compliance with the current IM law, however, if the IM laws are changed the procedures outlined in Appendix A will also likely need to be changed. Appendix B outlines the justifications and other information recommended by the Department of Law to be included in regulatory proposals for wolf and/or bear predation control implementation plans.

An IM Plan may or may not include a recommendation for a wolf and/or bear predation control program. If a predation control program is recommended a regulatory proposal to the Board must be prepared to establish a Predation Control Areas Implementation Plan under 5 AAC 92.125. Most all of the information needed for a regulatory proposal is included in the proposed IM Plan format. Once an IM Plan has been developed the necessary information can be cut, pasted and reformatted into a regulatory proposal.

Each IM Plan should be written to address the specific situation and do not necessarily need to include each and every point in this outline. IM Plans should incorporate adaptive management and may require updates and changes as experience is gained and when modifications to the management program are proposed.

PROPOSED INTENSIVE MANAGEMENT PLAN FORMAT

I. Introduction

A. Prey species and population being considered for IM and description of the geographic area

1. State whether the IM Plan is directed at moose or caribou or, in some cases it may be intended to benefit both species.

2. Provide a description of the geographic area – for moose this would most likely be a Game Management Unit (GMU) or subunit that corresponds to the IM objectives. There may be a compelling reason to propose IM for only a portion of a GMU based on identification of prey or predator populations or knowledge of access and harvest patterns. If IM is proposed for only a portion of a GMU a description of the area should be provided. For caribou herds a more detailed explanation is needed because IM objectives do not correspond to GMU boundaries.

3. Provide a map of the proposed IM area.

4. Identify the anticipated time frame of the plan.

B. Problem statement, purpose, need

1. Provide a statement of the problem the plan is intended to address.

2. State the main purpose, need, and expected results of the IM Plan.

3. Explain why the IM Plan has been developed. Is the plan a result of the recommendations of an advisory committee, a planning team, prepared at the request of the Board, or is it a working draft to assist an Area Biologist and other managers in evaluating the situation?

C. Identify the main recommendations involved in the IM Plan , and expected results

1. Indicate whether the plan recommends public information and education programs (e.g., protect cow moose, take more bears), habitat improvement, reductions in harvest of the prey population, liberalized hunting and trapping regulations for predators, or a wolf and/or bear predation control program.

2. Identify the anticipated time frame of the management treatments in the plan.

3. Define the time period in which results are expected.

II. Proposed Goals and Objectives for the IM Program

A. Identify the overall goals of the IM program (e.g.; increasing the harvestable surplus of moose).

B. Include objectives for all aspects of the proposed IM program including public information and education programs, improving habitat, reductions in harvest of the prey population, liberalized hunting and trapping regulations for predators, or a wolf and/or bear predation control program. Objectives need to be quantifiable.

- Objectives may include intermediate (process) objectives, such as the number of wolves or bears that must be killed to reduce predation, increased calf survival, or acres burned for habitat improvement and ultimate (fundamental) objectives (e.g.; attaining the IM population and harvest objectives.

- Individually tailored objectives may be listed, such as achieving an increase in local harvest or reducing the time and effort required to harvest a moose.

- IM population and harvest objectives should be stated. The IM Plan should include a review of the basis for the IM objectives and recommendations for change if data indicate that revisions are warranted. For example, information indicates that habitat in the proposed IM area will not support the number of animals listed in the IM population objective or if it may not be possible to get enough hunters into a remote area to take the number of animals specified in the IM harvest objective.

- Identify any other population management objectives included in a management report or management plan for the species and area. If there are inconsistencies between IM and other management objectives, provide a brief explanation of how these can be reconciled. For example, an IM harvest objective may require a large increase in number of hunters to achieve, whereas a management objective may be to maintain the current number of hunters.

C. Status of the population in relation to the IM population and harvest objectives

- Provide a comparison of the IM objectives for the prey population and the current estimates of the population and harvest. A table can be used as in the example below.

Intensive Management Objectives for Moose in Unit 21E (5 AAC 92.108)	Current Estimated Moose Population and Harvest (reported and unreported) for Unit 21E
Population: 9,000 – 11,000 moose Harvest: 550 – 1,100 moose	Population: 7,000 – 9,000 Estimated Harvest: 360

III. Biological and Management Situation Analysis

Much of the detail in this section is based on an outline provided by the Department of Law to establish a consistent format for regulatory proposals for predation control areas implementation plans. All of this detail may not be necessary for IM Plans that do not propose a wolf and/or bear predation control program. In cases where data specific to the area is not available information extrapolated from other predator/prey studies or

management results may be used, but the limitations of this information should also be identified (e.g.; calf mortality studies that identify the portion of total mortality attributed to various predator species and other causes).

A. Prey population information

1. Current population size estimate, with description of survey methods used and any qualifications that may be necessary (include explanation of use of sight ability correction factors and other calculations that have a substantial influence on ungulate population estimates).

2. Age and sex structure of the population.

3. Birth rates and recruitment into the hunted or reproductive population.

4. Mortality factors including estimated predation, harvest, and other factors.

5. Harvestable surplus, including an explanation of the harvest rate used.

6. Provide a comparison of the current population level with historic population levels, including a description of methods used to obtain historic population data and how reliably it can be compared to current data.

7. Explain whether the population is depleted or reduced in productivity. For this purpose the term "productivity" means annual recruitment or calf survival to one year of age (see Appendix A).

8. Expected trends in the population, with or without implementation of an IM program. It is recommended that modeling with PredPrey be used to forecast prey response to management scenarios for the duration of the IM program and help define benchmarks for measuring interim progress.

B. Human use information for the prey population

1. Reported harvest broken down by local and non-local Alaska resident and non-resident.

2. Estimated total harvest, include estimated unreported harvest.

3. Historical and current subsistence harvest.

4. Customary and Traditional (C&T) subsistence use determination and Amount Necessary for Subsistence (ANS) established by the Board (5 AAC 99.025).

5. Compare current harvest to historic harvest levels.

6. Explain the history of regulations controlling harvest of the prey population.

7. Predicted trends for demand and harvest, with and without IM.

C. Predator population information (provide information for all major predator species; e.g., wolves, black bears and brown bears, as appropriate)

1. Current population size estimates, with description of methods used and any qualifications that may be necessary.

2. Predator/prey ratios.

3. Alternative prey species available and their abundance, including seasonal distribution if migratory.

4. Portion of prey species mortality attributed to different predator species.

5. Management goals and population and harvest objectives for each predator species.

D. Human use information for predator populations

1. Historical and current hunter harvest.

2. Historical and current trapper harvest.

3. Explain the history of regulations and programs affecting the predator populations and discuss the current difficulties and challenges in harvest of predator species, especially if current harvest is lower than historical harvest.

4. Describe the predicted trends in predator populations with and without IM.

E. Condition of the habitat available to the prey population

1. Describe any browse surveys or other information available on the amount and condition of the habitat.

2. Describe information on the prey population that may be indicative of habitat quality (e.g., twinning rates, rump fat measurements, calf birth weights, and yearling weights).

3. Provide a qualitative evaluation of disturbance factors (fire, flooding, others) and vegetative succession in the context of habitat changes, particularly for a declining prey population.

4. Summarize information that indicates whether the habitat can likely support a higher prey population, particularly with respect to the IM population objective.

F. Current survey and inventory program and additional resources that may be needed.

1. Describe the baseline survey and inventory program expected for prey and predator populations and prey habitat.

2. Identify any additional information that is needed or will be needed as the program is implemented (e.g.; is a browse use assessment needed to verify that habitat is not limiting growth of the prey population, or will additional moose and wolf surveys be needed?).

3. Provide an estimate of the cost of the additional resources that are needed to support the IM program.

G. Hunting experience and effects on subsistence users

1. Describe the type of hunting opportunity are we seeking to provide in this area (e.g., high density hunting, low density wilderness experiences).

2. Describe available access to hunt the prey population and how that might be affected by an increase in the number of hunters. If the prey population is increased, is it likely that there will be sufficient numbers of hunters able to access the area to take advantage of the increased harvest opportunities?

3. Review the possible implications of having a higher number of hunters in the area and how that might affect local residents, subsistence uses, and other current users.

4. Consider if an increase in hunting pressure is consistent with the type of hunting experience intended for the area, especially in the context of existing management plans.

IV. Analysis of the Options for Increasing the Prey Population Size and/or Harvest

Consideration should be given to all options that can be used to increase the harvestable surplus of the prey population proposed for IM. Limits to implementing any of the options reviewed should be identified. For example, if a portion of a GMU proposed for IM includes NPS lands, the analysis should indicate aerial wolf predation control cannot occur there and also indicate if the program is projected to be successful with that limitation.

A. Public information and education programs

1. Public information programs to reduce illegal harvest (e.g., information on the effects of cow moose harvest on reduced moose populations).

2. Provide public information and education on the effects of predation to encourage increased harvest of predators.

3. Conduct trapping workshops.

B. Reduction in Harvest of the Prey Species

1. Description of actions taken in the past to reduce human harvest.

2. Description of recommendations to reduce human harvest.

3. Description of additional reductions in human harvest that may be needed if the population continues to decline.

C. Habitat Restoration and Enhancement

1. Wildland fire management options and recommendations.

2. Prescribed burns.

3. Mechanical habitat improvement.

D. Options to reduce predation through management practices not involving predation control (address predation by wolves, black bear and grizzly bears, as appropriate).

1. Changes to hunting and trapping regulations for predator species, including the seasons and bag limits, methods and means.

2. Authorize the taking of wolves using snowmachines and/or ATVs (5 AAC 92.080).

3. Allowing registered guides to conduct big game hunting services for predator species in an IM area, in addition to the normal limit of 3 guide use areas [see AS 08.54.750(f)].

E. Options for Predator Control (address predation by wolves, black bear and grizzly bears, as appropriate)

1. Predator control through public action (e.g., issuing permits to the public for aerial and land-and-shoot wolf control).

2. Predator control through ADF&G actions.

F. Options for increasing harvest of an abundant ungulate population.

1. Liberalizing seasons, bag limits and methods and means.

2. Encouraging harvest of antlerless moose to help control overall ungulate population size and maintain quality habitat.

G. Options for maintaining harvest of predators at a level sufficient to limit the growth of wolf and bear populations following predation control efforts.

H. Provide a brief analysis of costs to the Department to implement different IM treatments (e.g.; cost of issuing permits for public aerial taking of wolves vs. Department staff in helicopters).

V. Recommended Techniques for Achieving the Objectives

Some IM Plans may be written with the main focus on fully achieving the IM objectives while others may focus on achieving other objectives but still represent progress towards the IM objectives. For example, an area may have an IM population objective of 4,000 moose but initially the main objective may be to increase the moose population from 1,000 to 2,000 and reduce the amount of time and effort required to harvest a moose in the area.

The proposed IM methods should be fully described in this section and evaluated for potential effectiveness. The plan should identify both the initial methods that are recommended to achieve objectives as well as additional methods that might be employed if adaptation of the plan becomes necessary. The purpose is to allow for meaningful public review and comment and provide a potential framework for adaptive management if the initial method(s) are unsuccessful. Specific methods, such as allowing baiting of grizzly bears, must be identified in the plan. For example, it will not be sufficient to propose a bear predation control program by generically stating the intent to use the methods contained in the Board policy on Bear Predation Management and then wait until the Board meeting to identify the specific IM methods to be used.

A. Public information and education.

B. Reducing harvest of the prey species.

C. Habitat restoration and enhancement.

D. Recommended changes in hunting and trapping regulation to help reduce predation.

E. Recommendations for wolf and/or bear predation control implementation plans.

F. Options for maintaining harvest of predators at a level sufficient to limit the growth of wolf and bear populations following predation control efforts.

G. Predicted outcome of the IM program: Use the PredPrey model or other available means to (1) illustrate the potential outcome of IM programs and harvest scenarios out to 5 years post-treatment and (2) evaluate the accuracy of estimated population parameters that are based on minimal data. Include a description of the PredPrey

inputs used for each scenario and the level of confidence in the population forecasts and estimated parameters.

H. An adaptive management framework that identifies interim benchmarks of success (see part E in next section), some of which may be based on PredPrey modeling. Alternative treatments should be included to identify when and how an IM program would change based whether pre-determined benchmarks of success are achieved at specified time periods.

I. Options for increasing harvest of an abundant ungulate population following a successful IM program, including an evaluation of hunter access and potential for harvest of cows.

VI. Recommended Board of Game Actions

A. Identify what actions are needed by the Board to implement the IM plan. Identify the Board determinations that are needed and if there is a need for the Board to adopt regulations, issue findings or take other actions (see Appendix A for IM determinations or findings that may be needed).

B. This section could also include information on how the department views this proposed IM plan in the context of other IM proposals, department priorities and resource limitations need to implement the program (i.e.; how the proposed IM program ranks relative to other proposals for IM in the Region).

VII. Implementation, Evaluation, and Modification of the IM Plan

A. Describe the biological monitoring of prey and predator species and habitat conditions necessary to implement the plan. This should include standard S&I activities and additional monitoring that may be needed for the IM Plan.

B. Identify the benchmarks to measure success or failure of the IM program and to define when predation control efforts or other aspects of the program will be discontinued.

C. If a predation control program is part of the IM plan, describe how the benefits of the predation program will be maintained once the control program is discontinued (e.g.; explain how predator numbers can be regulated through hunting and trapping or other methods).

D. Describe plans for taking advantage of additional harvest opportunities once the objectives for increasing the moose or caribou population have been achieved (this does not necessarily have to be fully achieving the IM objectives).

For example, identify benchmarks for when harvest management can change from Tier II to registration, drawing permits, or harvest tickets, or when nonresident seasons can be reestablished. Explain when antlerless seasons can be considered to provide additional harvest or when they may need to be instituted to maintain productivity of the population and habitat. Benchmarks do not need to be limited to prey population numbers and in many cases should include productivity indices, such as twinning rates and recruitment.

E. Describe how will the IM program be monitored, reviewed and adapted as experience and new information is gained. Include interim benchmarks for progress (e.g., % increase in predator kill, % increase in calf survival, % increase in calf:cow ratio in autumn counts, increased harvest per unit effort) and performance measures for the eventual increase in population and harvest (including catch per unit effort) by specified time periods. Discuss the means the Department will use to define when to halt control efforts yearly and on a permanent basis.

Appendix A:

Procedures to Review the Status of the Prey Population under the Intensive Management Laws

This section can serve as a checklist for compliance with the IM statutes and regulations. This review will help to identify specific Board determinations or findings that may be necessary to document compliance with IM procedures and increase the probability that the program can withstand legal challenge.

A. Board determination that consumptive use of the big game prey population is the preferred use [AS 16.05.255(e)(1)].

- Indicate whether the Board has made a positive finding that the prey species proposed for IM is important for providing high levels of harvest for human consumptive use [5 AAC 92.108].

B. Status of the population in relation to the IM population and harvest objectives

- Refer to previous sections of the IM Plan that describe the IM objectives established by the Board for the prey population, the current estimate of the prey population and the current level of harvest.

- Provide a description of the basis of the IM objectives established by the board and indicate if they are biologically reasonable or if they may need to be revised.

- Provide a comparison of the IM objectives for the prey population and the current estimates of the population and harvest. A table can be used as in the example below.

Intensive Management Objectives for Moose in Unit 21E (5 AAC 92.108)	Current Estimated Moose Population and Harvest (reported and unreported) for Unit 21E
Population: 9,000 – 11,000 moose Harvest: 550 – 1,100 moose	Population: 7,000 – 9,000 Estimated Harvest: 360

- Provide a concluding statement indicating whether the objectives for the big game prey population established by the Board have been achieved.

C. Board determination that depletion of a big game prey population or reduced productivity of a big game prey population has occurred [AS 16.05.255(e)(2)].

According to 5 AAC 92.106, the Board of Game will:

"(3) find that depletion of a big game prey population or reduction of the productivity of a big game prey population has occurred when

(A) the number of animals, estimated by the department, that can be removed by human harvest from a population, or portion of a population, on an annual basis without reducing the population below the population objective, preventing growth of the population toward the population objective at a rate set by the board, or altering a composition of the population in a biologically unacceptable manner is less than the harvest objective for the population; and (emphasis added)

(B) the population size is less than the population objective for the population;"

- Provide a statement indicating whether the biologically acceptable harvest of the prey species in the proposed IM area is less that the IM harvest objective; and whether the population of the prey species in the proposed IM area is less than the IM population objective.

- Explain whether the population is depleted or "reduced in productivity" (i.e., reduced recruitment) and whether that already has or will result in reductions in the allowable harvest (Refer to information provided in Section III-A-7 in the IM Plan format).

***Board of Game determination** (as appropriate)*: The Board should be requested to make a determination that depletion or reduced productivity of the prey population in the proposed IM area has occurred.

D. Might the board determination (from C above) result in a significant reduction in the allowable human harvest of the population?

According to 5 AAC 92.106, the Board of Game will:

"(4) determine whether a finding made under (3) of this section may result in a significant reduction in the allowable human harvest of the population;
(5) not consider as significant:

(A) any reduction in taking that continues to allow a level of harvest equal to or greater than the minimum harvest objective established by the board; or (emphasis added)

(B) 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."

- Provide a description of any reductions in the allowable harvest from the prey population that have occurred in the past, are proposed at the same time as the IM Plan, or that may be needed in the future. Address whether the reductions in harvest are "significant" according to the criteria in the box above.

Board of Game determination *(as appropriate)*: The Board should be requested to make a determination that the depleted population of the prey species in the proposed IM area has or will result in a significant reduction in the allowable harvest.

E. Demonstrate that enhancement of abundance or productivity of the big game prey population is feasibly achievable utilizing recognized and prudent management techniques [AS 16.05.255(e)(3)]. Section IV of the IM Plan format involves a complete analysis of options for increasing the prey population. This section can state the main conclusions from that analysis.

- If information specific to the area proposed for IM is not available, cite scientific literature and/or recent examples of success in other IM programs (e.g.; McGrath or Unit 13 moose, Fortymile caribou) and how those examples can reasonably be extrapolated to the prey species and IM area under consideration. Include consideration of habitat enhancement options. On the other hand, if techniques not available to the department (e.g.; aerial taking of grizzly bears) would be required to enhance the prey population, that should also be stated.

Board of Game determination *(as appropriate)*: The Board should be requested to make a determination that increasing the abundance and productivity of the prey species in the IM area is feasible and achievable using recognized and prudent active management techniques.

F. If reductions in taking of the prey species are recommended, provide a review of whether the Board has adopted or scheduled for adoption regulations that provide for intensive management to increase the take of the population consistent with the population and harvest objectives [AS 16.05.255(f)].

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

(1) determines that intensive management would be
(A) ineffective, based on scientific information;
(B) inappropriate due to land ownership patterns; or
(C) against the best interest of subsistence uses; or

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

- If reductions in taking the prey species are necessary, provide a brief analysis of whether IM would be ineffective based on scientific information, inappropriate due to land ownership patterns (e.g.; NPS or FWS lands), or against the best interest of subsistence users.

- Indicate whether the Board has declared that a biological emergency exists and has taken action to protect or maintain the prey population or whether there is a need for the Board to make that declaration.

- Indicate whether the Board has adopted or scheduled for adoption regulations to provide for IM for the prey species in the proposed IM area.

Recommended Board of Game actions: (choose the appropriate option)

1. Reductions in harvest are not necessary – the Board is not required to schedule consideration of regulations to implement IM based on making significant reductions in harvest. This does not preclude the Board from recommending IM based on other considerations.

2. Board determination that IM would be ineffective, inappropriate, or against the best interest of subsistence uses [AS 16.05.255(f)(1)] – the Board may significantly reduce the taking of the big game prey species without implementing IM.

3. Board determination that a biological emergency exists [AS 16.05.255(f)(2)] – the Board may take immediate action to protect or maintain the prey population in conjunction with scheduling for adoption regulations to implement IM.

4. Board determination that significant reductions in harvest of the prey species is necessary, and AS 16.05.255(f)(1) sections B and C do not apply – If the Board adopts regulations to significantly reduce harvest, the Board must adopt, or schedule for adoption at their next regularly scheduled meeting, regulations to provide for IM.

Conclusions: Prepare a brief narrative that explains whether the prey population proposed for IM meets the criteria of the IM laws and any key points that emerge from the analysis.

Appendix B:

Additional Requirements for Wolf and/or Bear Predation Control Area Implementation Plans

Predation control implementation plans adopted by the Board since May 2006 include the following justifications identified by the Department of Law. These justifications should be included in a regulatory proposal for a wolf or bear predation control implementation plan (in addition to information already included in Section III of the IM Plan format). Recently approved predation control implementation plans should be reviewed as examples to see how this information has been inserted into the regulations.

A. Justification for the predator control plan
   1. Summarize/translate prey data to illustrate current and long-term need for increased numbers.
   2. State that the population and/or harvest objectives are not being met and explain why.
   3. State the conclusion that predator control is likely to improve the situation and explain why.
   4. Summarize/translate predator data to illustrate current and long-term need for decreased numbers.
   5. State that predator population and/or harvest objectives are not being met and explain why.
   6. Explain how predator control is likely to cause the desired reduction in predator numbers.
   7. Discuss the gains or improvements in the prey population or harvest that are expected to result from predator control.
   8. Discuss all previous measures that have been taken but failed to achieve predator and prey population and/or harvest objectives and explain why.
   9. Discuss reasonable alternatives to predator control and explain why each would be unlikely to work or is undesirable (e.g.; ordinary hunting and trapping, sterilization, relocation, habitat manipulation, supplemental feeding, stocking) and then affirmatively state that the alternatives are not likely to be effective in achieving the desired level of predator harvest.

B. Methods and means
   1. Aerial
   2. Land and shoot
   3. Ground-based or ground assisted
   4. Others

C. Anticipated time frame (not to exceed 5 years unless the plan is readopted) and schedule for update and reevaluation

D. Other specifications the Board considers necessary
   1. Discuss the means the Department will use to know when to halt control efforts yearly and on a permanent basis (ideally part of an adaptive management plan).

Customary and Traditional Use Overview: Black Bear, GMU 19

Prepared for
Alaska Board of Game
March 2008

RC 2, Tab E

Proposals 8, 99, and 100

5 AAC 84.270. Furbearer Trapping.
5 AAC 92.085(6). Unlawful methods of taking big game; exceptions.
5 AAC 92.990(21). Definitions.

Establish a trapping season for black bear in Unit 19 from April 1 to May 31.

Department Recommendation: Do Not Adopt proposed regulations.

Board may make a C&T finding for black bear and establish an amount reasonably necessary for subsistence uses (ANS) in Unit 19.

2

Current State Regulations, Unit 19 Black Bear

- No C&T finding
- No closed season
- Annual limit of 3 bears in 19B and C
- Annual limit of 5 bears in 19A and D
- Black bears taken in portion of GMU 19D upstream of the Selatna and Black River drainages must be sealed.

3

State Subsistence Procedures

Board Findings on black bears in Unit 19:

- Is there Customary and Traditional Use of black bears in Unit 19?
  - No finding has been made.
- Is there a "Harvestable Surplus" of black bears in Unit 19?
  - Yes, based on biological information.
- What is the Amount reasonably Necessary for Subsistence uses (ANS)?
  - No finding has been made.
- Does the harvestable surplus allow for all or only some uses?
  - This is a Board of Game determination.

4

C&T Harvest and Use Patterns

Criterion 1. Long-term, consistent pattern of use.

- Black bears have been harvested for food and raw materials by people living in Unit 19 since before historic contact up to the present.
- An average annual harvest of 29 black bears were reported in ADF&G harvest ticket database in Unit 19 between 1986 and 2006.
- Department household surveys documented an average 32 black bears annually harvested by Unit 19(A) residents alone, 2003-2006 (Aniak, Kalskag, Red Devil, Stony River, Chuathbaluk, Crooked Creek, Sleetmute).

5

C&T Harvest and Use Patterns

Criterion 1. Long-term, consistent pattern of use, cont'd.

Black Bear Harvests (ADF&G, CSIS 2007)

Community	Year	Harvest Estimate
Chuathbaluk	1983	6
McGrath	1984	15
Nikolai	1984	6
Crooked Creek	2003	8

6

C&T Harvest and Use Patterns

Criterion 2. A use pattern recurring in specific seasons of each year.

- Black bears are hunted primarily in the spring when bears begin emerging from their dens, opportunistically in the fall during other hunting, fishing, or gathering activities, and in early winter when meat is considered prime.
- Some communities also hunt black bears in the late winter, especially when moose and caribou harvests were low the preceding winter.

7

C&T Harvest and Use Patterns

Criterion 3. Methods and means of harvest characterized by efficiency and economy of effort and cost.

- Traditionally taken with deadfalls, snares, and pitfalls, spearing, shooting with bows and arrows, smoking out of den, lassoing and drowning while swimming, using dogs to track and find dens, and baiting them with coiled baleen.
- Today, taken largely with large caliber rifles, often during moose hunts and using other methods.
- Access to hunting areas for local residents is by snowmachine, dog team, boat, and walking.

8

C&T Harvest and Use Patterns

Criterion 4. The area in which the pattern of use has been established.

- For local residents, black bear hunting areas are generally the same as those for moose hunting.
- Most black bear hunting occurs along river drainages in the productive areas around villages in GMU 19, including the Stony, Stink, Swift, Tatlawiksuk, Kuskokwim, Holitna, George, Aniak, Holokuk, Big, and Oskawalik Rivers and their tributaries.
- Maps of some community black bear hunting areas used in Unit 19 are found in supporting RC 3.

9

C&T Harvest and Use Patterns

Criterion 5. Means of handling, preserving, and storing game that have been traditionally used by past generations, but not excluding recent technological advances.

- Traditionally, Unit 19 hunters treated black bears with high regard due to their physical and spiritual power. Skull often buried in field. Meat shared.
- Black bear meat is prepared by drying, boiling, baking, and roasting.
- Historically, bear products were used as door coverings, clothing, gut rain jackets, and medicine. Presently, black bear meat and hide are most commonly used for food and rugs or wall hangings, respectively; the fat sometimes used for cooking, e.g. baking pastries or making "Eskimo ice cream."

10

C&T Harvest and Use Patterns

Criterion 6. The handing down of knowledge of hunting skills, values, and lore from generation to generation.

- Communities existed in Unit 19 from before historic contact until the present. Knowledge of hunting passed generationally usually through families.
- Local oral traditions feature stories about bear hunting and the spiritual aspects of bears.
- Young men and women learn how to hunt and process black bear meat by observing beginning in childhood.

11

C&T Harvest and Use Patterns

Criterion 7. The harvest effort or the products of that harvest are distributed or shared.

- Bear meat is shared widely between Unit 19 communities, particularly if it is harvested during lean times.
- In addition to general community patterns of sharing black bear, the first black bear killed by young hunters often is shared throughout the community.
- Bear meat is often served at funeral and memorial potlatches and certain parts, such as hindquarters, heart and kidneys are normally given to community elders.

12

C&T Harvest and Use Patterns

Criterion 8. A pattern that includes taking, use, and reliance for subsistence purposes upon a wide diversity of the fish and game resources.

- Baseline surveys conducted in 2 communities in Unit 19 (Nikolai and McGrath). Based on these, residents harvest on average 484 lbs of wild resources per capita annually.
- In 2001, for example, Nikolai households used at least 53 individual resources with a household average of 14 resources used, ranging from salmon, other fish, land mammals, migratory birds, and various plants and berries.

13

Considerations

- AS 16.05.258 specifies process for each board to make C&T use determinations for fish or game populations that are customarily and traditionally taken or used for subsistence.
- C&T worksheets previously prepared including Unit 19 black bear for BOG in RC 1 at the March 1998 regulatory meeting (see RC 3).

14

Proposal 8

Summary:

- This proposal would establish a trapping season for black bear in Unit 19 from April 1 to May 31.

Department Recommendation: Do Not Adopt proposed regulation changes.

Board may:

- Make a C&T finding for black bear in Unit 19.
- Establish an amount reasonably necessary for subsistence uses (ANS) in Unit 19.

15

Customary and Traditional Use Overview: Black Bear, GMU 21 & 24

Prepared for
Alaska Board of Game
March 2008

RC 2, Tab F

Proposals 75, 78, and 79

5 AAC 84.270. Furbearer Trapping.
5 AAC 92.085(6). Unlawful methods of taking big game; exceptions.
5 AAC 92.990(21). Definitions.
5 ACC 92.260. Taking cub bears and female bears with cubs prohibited.
75 – Allow black bear trapping Mar 1- June 10.
78 – Allow taking of bears from dens.
79 – Allow taking of bears from dens with artificial light.

Department Recommendation: No Recommendation

Board may make a C&T finding for black bear and establish an amount reasonably necessary for subsistence uses (ANS) in Units 21 & 24.

2

Current State Regulations, Unit 21 & 24 Black Bear

- No C&T finding
- No closed season
- Annual limit of 3 bears in Unit 21 & 24

3

State Subsistence Procedures

Board Findings on black bears in Units 21 & 24:

- Is there Customary and Traditional Use of black bears in Units 21 & 24?
  - No finding has been made.
- Is there a "Harvestable Surplus" of black bears in Units 21 & 24?
  - Yes, based on biological information.
- What is the Amount reasonably Necessary for Subsistence uses (ANS)?
  - No finding has been made.
- Does the harvestable surplus allow for all or only some uses?
  - This is a Board of Game determination.

4

C&T Harvest and Use Patterns

Criterion 1. Long-term, consistent pattern of use.

- Black bears have been harvested for food and raw materials by people living in Units 21 & 24 since before historic contact up to the present.
- Limited black bear harvest represented in ADF&G harvest ticket database (an average annual harvest of 6 black bears in Unit 21 from 1986 – 2006 and 4 from Unit 24; sealing is not required).
- Documented harvests and uses by residents of local communities in department household surveys (e.g., Galena, Kaltag, Nulato, Tanana, Ruby, Huslia, Allakaket, Koyukuk, GASH communities reported an estimated 73 black bears harvested in 2002-03).

5

C&T Harvest and Use Patterns

Criterion 1. Long-term, consistent pattern of use, cont'd.

Black Bear Harvests (ADF&G, CSIS 2007)

Community	Year	Harvest Estimate
Huslia	1983	40
Galena	1985	36
Huslia	2003	20
Grayling	2003	9

6

C&T Harvest and Use Patterns

Criterion 2. A use pattern recurring in specific seasons of each year.

- Black bear are hunted primarily in the spring when bears begin emerging from their dens, opportunistically in the fall during other hunting, fishing, or gathering activities, and in early winter when meat is considered prime.

7

C&T Harvest and Use Patterns

Criterion 3. Methods and means of harvest characterized by efficiency and economy of effort and cost.

- Traditionally taken with deadfalls, snares, and pitfalls, spearing, shooting with bows and arrows, smoking out of den, lassoing and drowning while swimming, using dogs to track and find dens, and baiting them with coiled baleen.
- Today, taken largely with large caliber rifles, often during moose hunts and using other methods.
- Access to hunting areas for local residents is by snowmachine, dog team, boat, and walking.

8

C&T Harvest and Use Patterns

Criterion 4. The area in which the pattern of use has been established.

- For local residents, black bear hunting areas are generally the same as those for moose hunting.
- Most black bear hunting occurs along river drainages in the productive areas around villages in GMUs 21 & 24.
- Maps of some community black bear hunting areas used in Units 21 & 24 are found in supporting RC 3.

9

C&T Harvest and Use Patterns

Criterion 5. Means of handling, preserving, and storing game that have been traditionally used by past generations, but not excluding recent technological advances.

- Traditionally, Unit 21 & 24 hunters treated black bears with high regard due to their physical and spiritual power. Skull often hung in a tree or burned in a clean fire. Meat is shared. Social taboos associated with young women are found in the Koyukuk River area.
- Black bear meat is used for food and often included in special events such as potlatch or "bear parties" in the Koyukuk River area.
- Historically, bear products were used as door coverings, clothing, gut rain jackets, and medicine. Presently, black bear meat and hide are most commonly used for food and rugs or wall hangings, respectively; the fat sometimes used for cooking, e.g. baking pastries or making "Eskimo ice cream."

10

C&T Harvest and Use Patterns

Criterion 6. The handing down of knowledge of hunting skills, values, and lore from generation to generation.

- Communities existed in Units 21 & 24 from before historic contact until the present. Knowledge of hunting passed generationally usually through families.
- Local oral traditions feature stories about bear hunting and the spiritual aspects of bears.
- Young men and women learn how to hunt and process black bear meat by observing beginning in childhood.

11

C&T Harvest and Use Patterns

Criterion 7. The harvest effort or the products of that harvest are distributed or shared.

- Bear meat is shared widely between Units 21 & 24 communities, particularly if it is harvested during lean times.
- In addition to general community patterns of sharing black bear, the first black bear killed by young hunters often is shared throughout the community.
- Bear meat is often served at funeral and memorial potlatches and certain parts, such as hindquarters, heart and kidneys are normally given to community elders. In Unit 24 and parts of Unit 21, the common practice is for only men and older women to eat bear meat.

12

C&T Harvest and Use Patterns

Criterion 8. A pattern that includes taking, use, and reliance for subsistence purposes upon a wide diversity of the fish and game resources.

- Units 21 & 24 residents harvest on average 850 lbs of wild resources per capita annually, representing some of the most subsistence-dependent communities statewide.
- In 2001, for example, Huslia households used at least 32 individual resources, ranging from salmon, other fish, land mammals, migratory birds, and various plants and berries, including 31 lbs per capita of black bear.

13

Considerations

- AS 16.05.258 specifies process for each board to make C&T use determinations for fish or game populations that are customarily and traditionally taken or used for subsistence.
- C&T worksheets previously prepared including Units 21 & 24 black bear for BOG in RC 1 at the March 1998 regulatory meeting (see RC 3).

14

Proposals 75, 78, and 79

Summary:

- These proposals would establish trapping season for black bear in Units 21 & 24, allow the taking of cubs, and allow the use of artificial light.

Department Recommendation:

No Recommendation

Board may:

- Make a C&T finding for black bear in Units 21 & 24.
- Establish an amount reasonably necessary for subsistence uses (ANS) in Units 21 & 24.

15

Tab G. Trends in September Temperature. Region III

This study investigated possible multi-decadal mean temperatures changes in Interior Alaska during the first half of September.

For the period 1960-2006, September weeks 1 (Sept 1 through 8) and 2 (Sept 9 through 15) average maximum temperatures and average minimum temperature were calculated for locations with complete data sets for this time period from daily data on file at the National Weather Service Forecast Office in Fairbanks. In order to reduce the impact of extreme outliers on this comparatively small data set, the highest and lowest values of each parameter in each week were removed and the remaining data analyzed. This left 45 years with data.

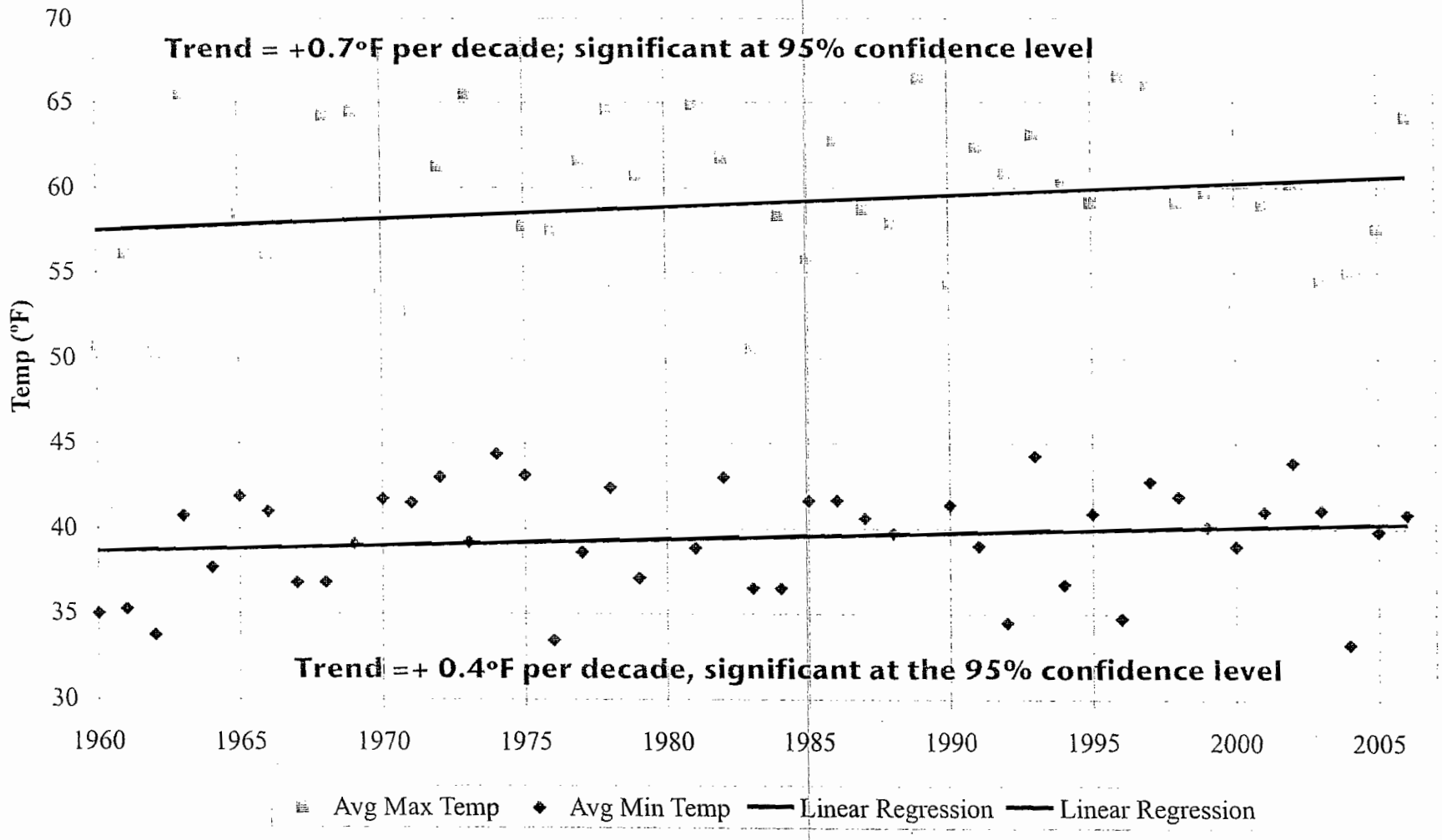
The resulting analyses showed statistically significant warming trend of maximum temperatures in week 1 at the all locations except Bettles. Additionally, Fairbanks and McGrath also showed warming of minimum temperatures. In contrast, no location had statistically significant trends during week 2 of either average maximum or average minimum temperatures.

Data for Galena was also analyzed, although there is no data 1994-1996. The trends were not significant with the extremes removed, although without removing the extremes the positive trend of maximum temperatures was statistically significant.

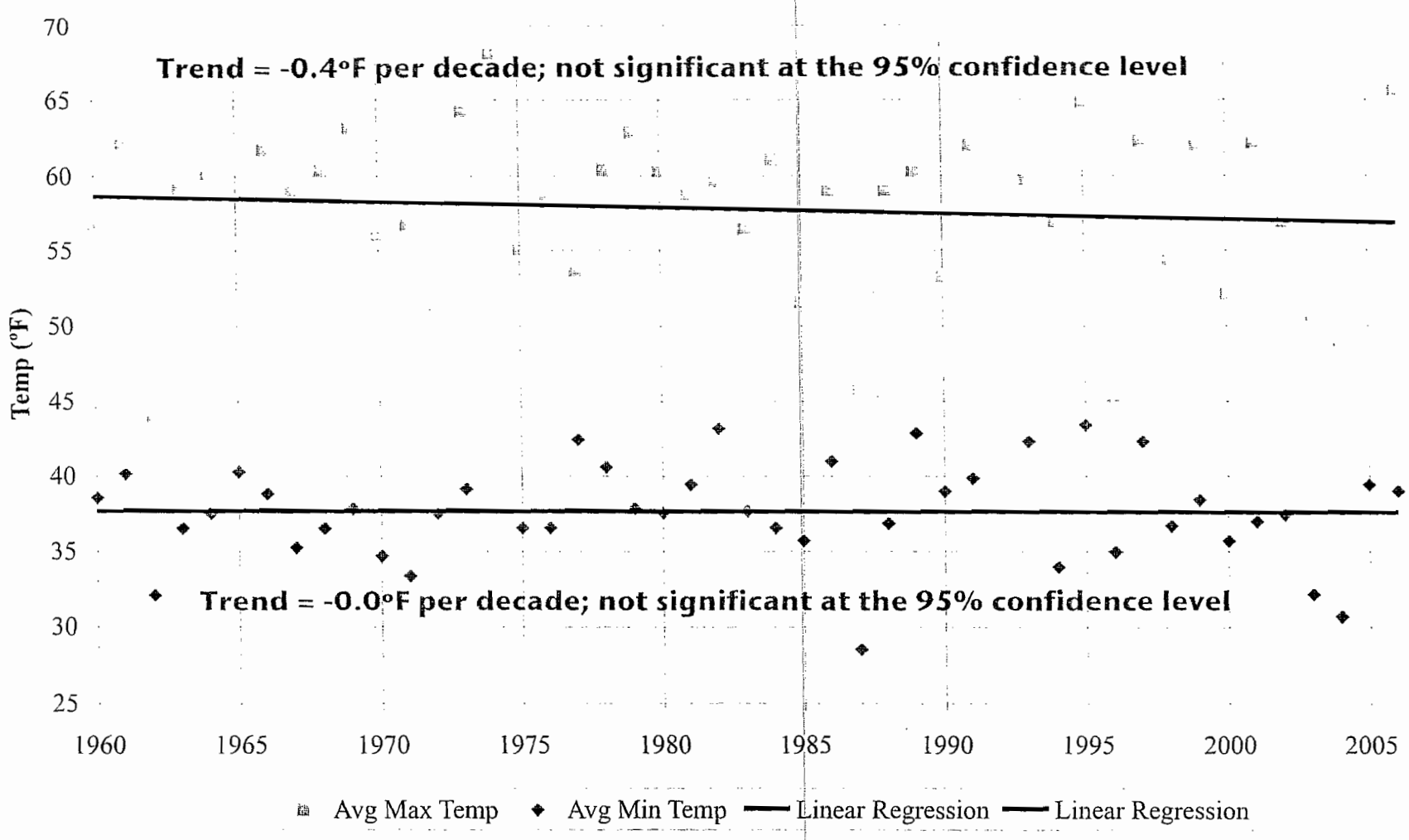
		Fairbanks	Bettles	Northway	McGrath	Tanana	Galena
Sept 1-8 Max Temp	Regression Trend	0.069°F/ year	0.022°F/ year	0.058°F/ year	0.060°F/ year	0.073°F/ year	0.034°F/ year
	Correlation	0.207	0.061	0.178	0.182	0.223	0.113
	z-test	**2.72**	0.79	**2.33**	**2.38**	**2.94**	1.42
Sept 1-8 Min Temp	Regression Trend	0.036°F/ year	0.022°F/ year	0.015°F/ year	0.057°F/ year	0.040°F/ year	-0.011°F/ year
	Correlation	0.162	0.082	0.072	0.228	0.136	0.039
	z-test	**2.12**	1.07	0.93	**3.01**	1.78	-0.48
Sep 9-15 Max Temp	Regression Trend	-0.040°F/ year	-0.033°F/ year	0.010°F/ year	0.029°F/ year	0.003°F/ year	0.005°F/ year
	Correlation	-0.101	-0.084	0.029	0.087	0.009	0.015
	z-test	1.32	1.09	0.37	1.13	0.11	0.18
Sep 9-15 Min Temp	Regression Trend	-0.003°F/ year	0.027°F/ year	-0.027°F/ year	0.012°F/ year	0.037°F/ year	-0.002°F/ year
	Correlation	-0.012	0.079	-0.124	0.040	0.106	-0.006
	z-test	0.15	1.03	1.61	0.52	1.38	0.07

z-test threshold for 95 percent confidence ($\alpha = .05$) is ≥ 1.96

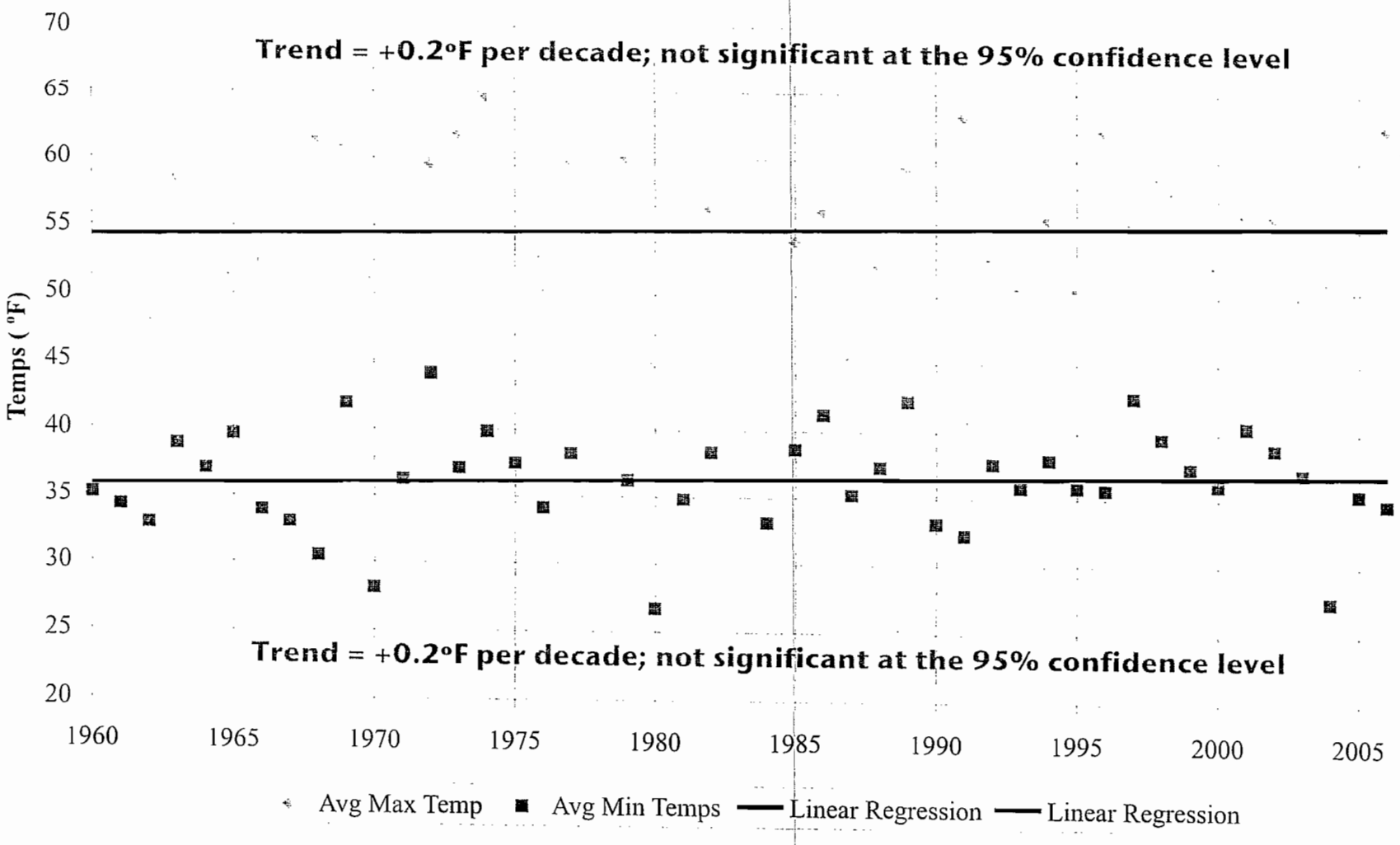
Fairbanks
September 1-8 Average Temperatures



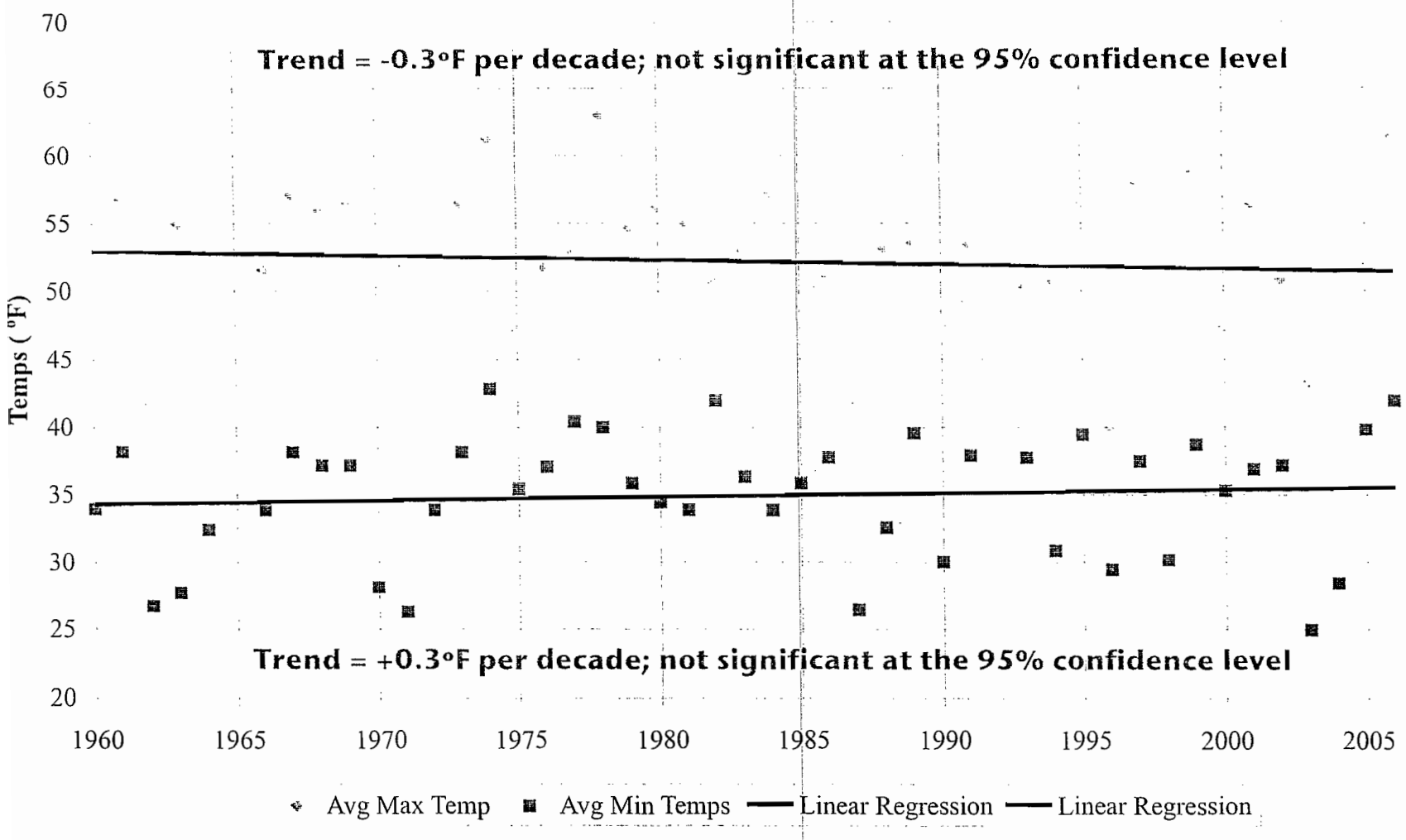
Fairbanks
September 9-15 Average Temperatures



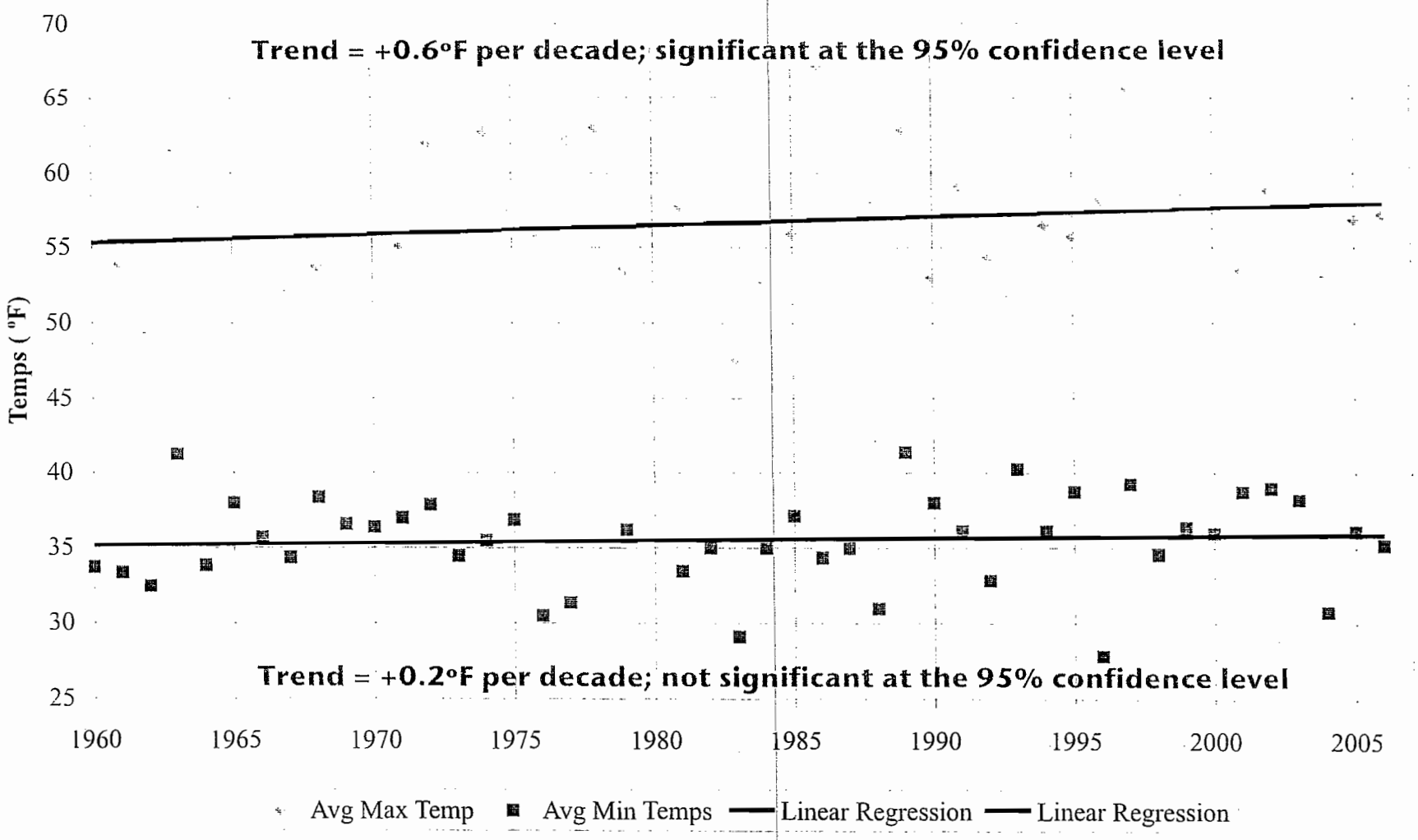
Bettles
September 1-8 Average Temperatures



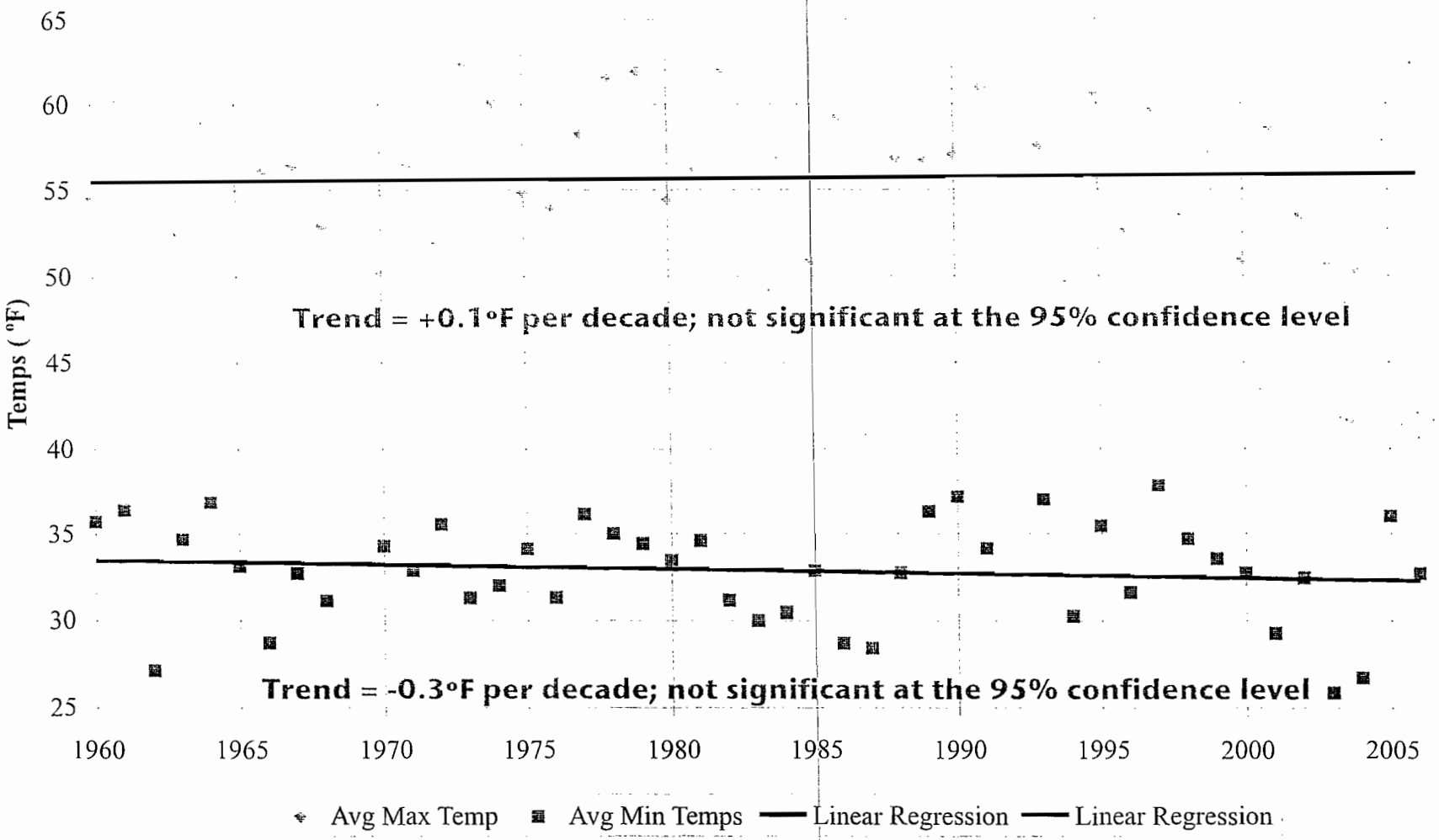
Bettles
September 9-15 Average Temperatures



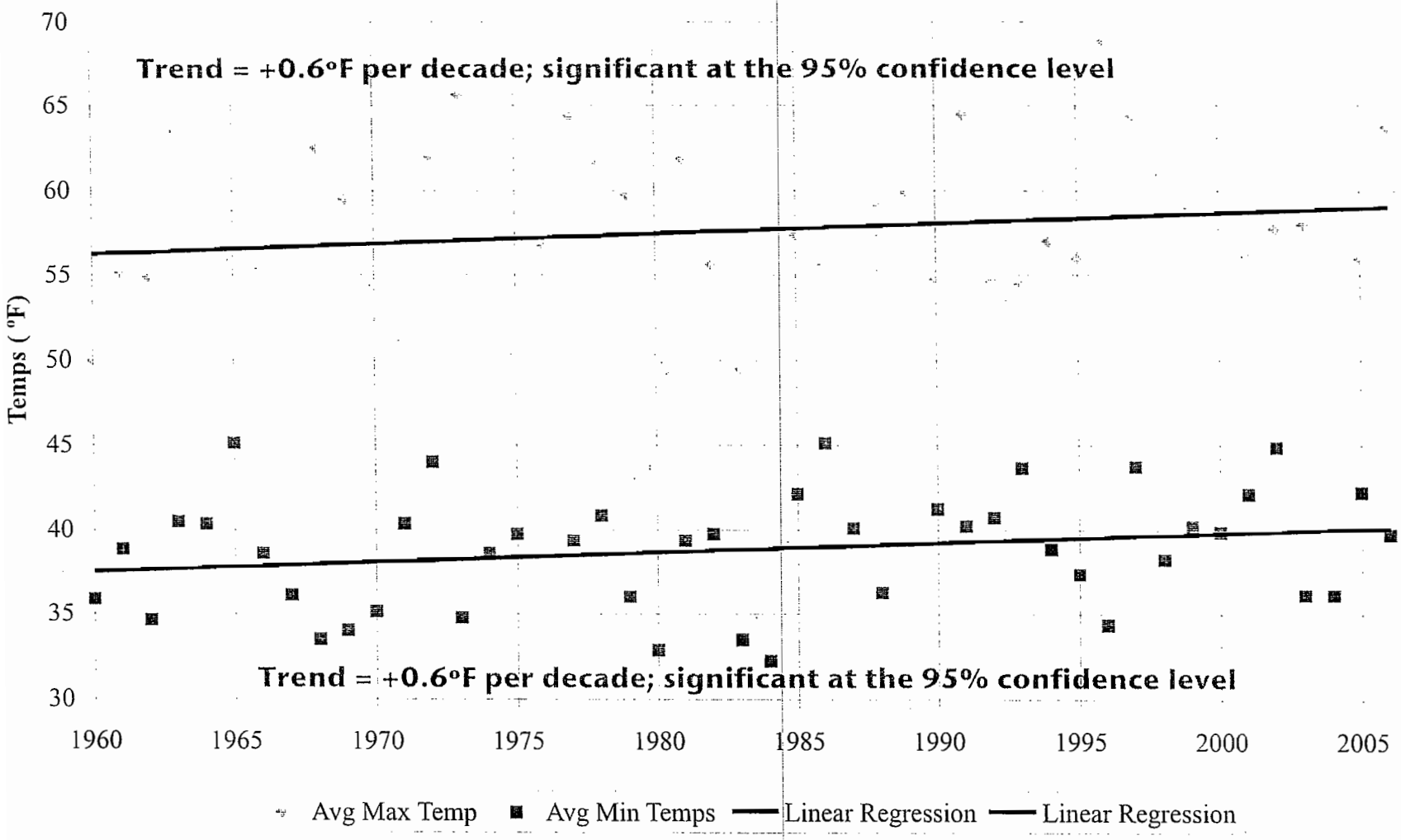
Northway
September 1-8 Average Temperatures



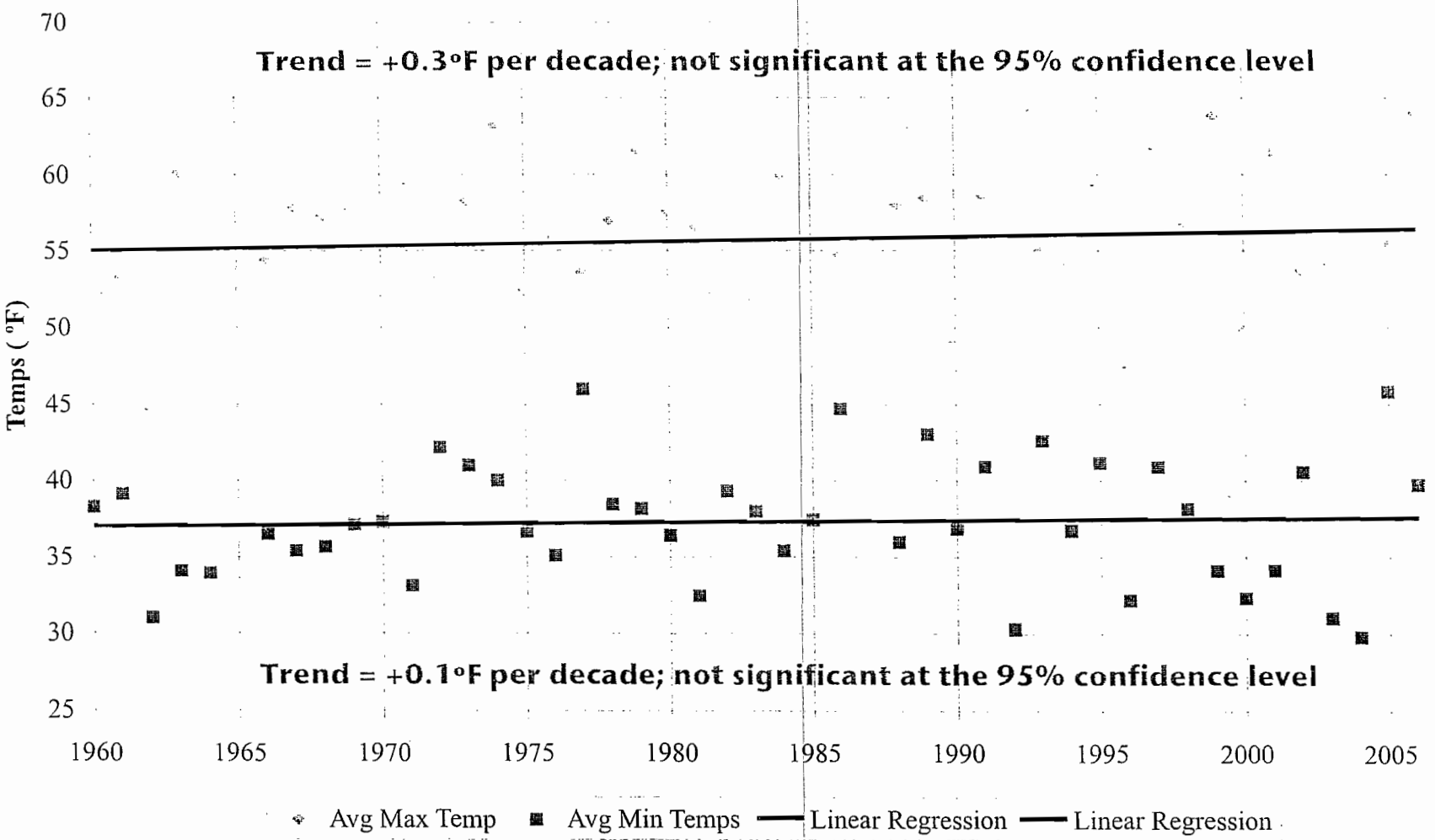
Northway
September 9-15 Average Temperatures



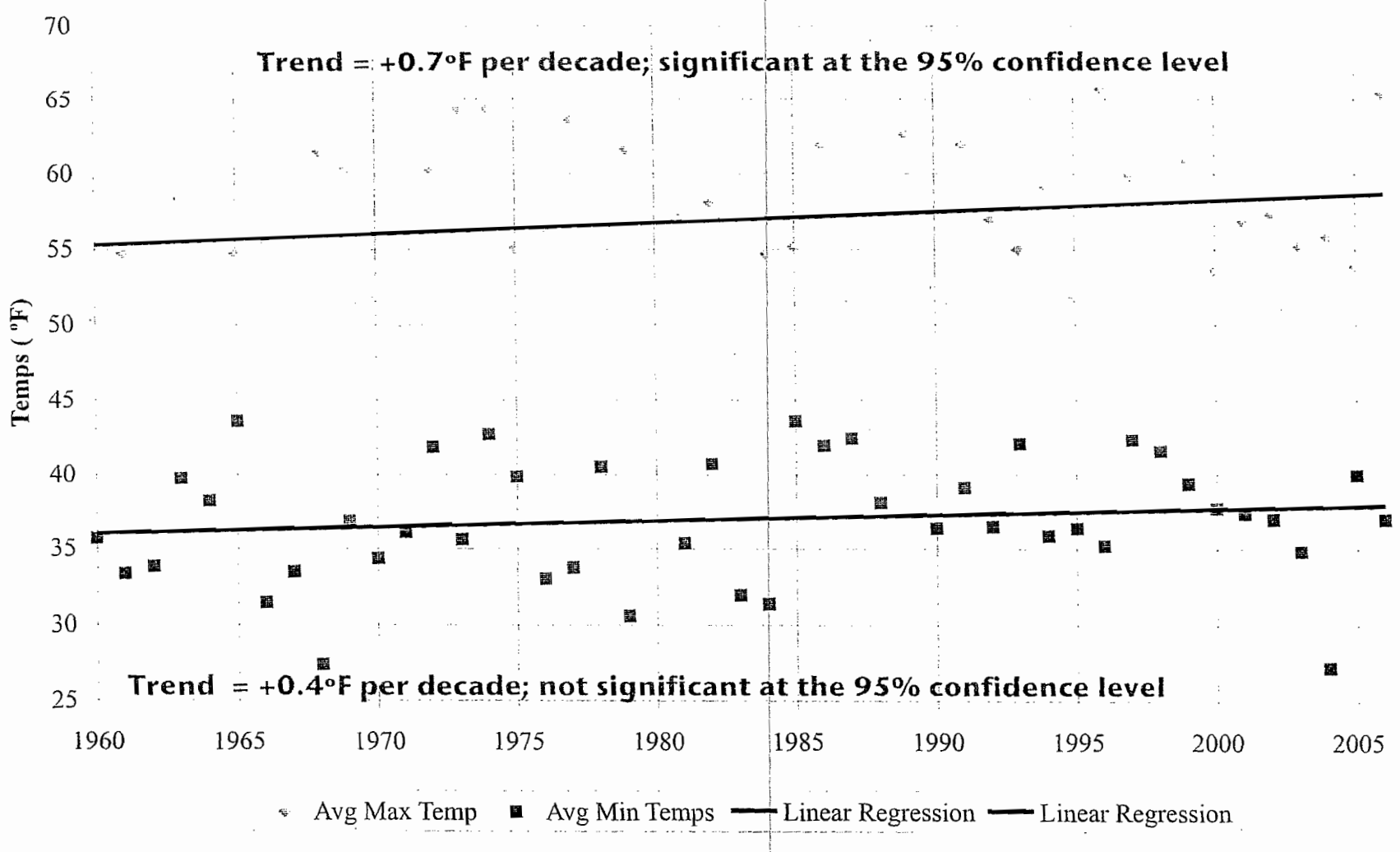
McGrath
September 1-8 Average Temperatures



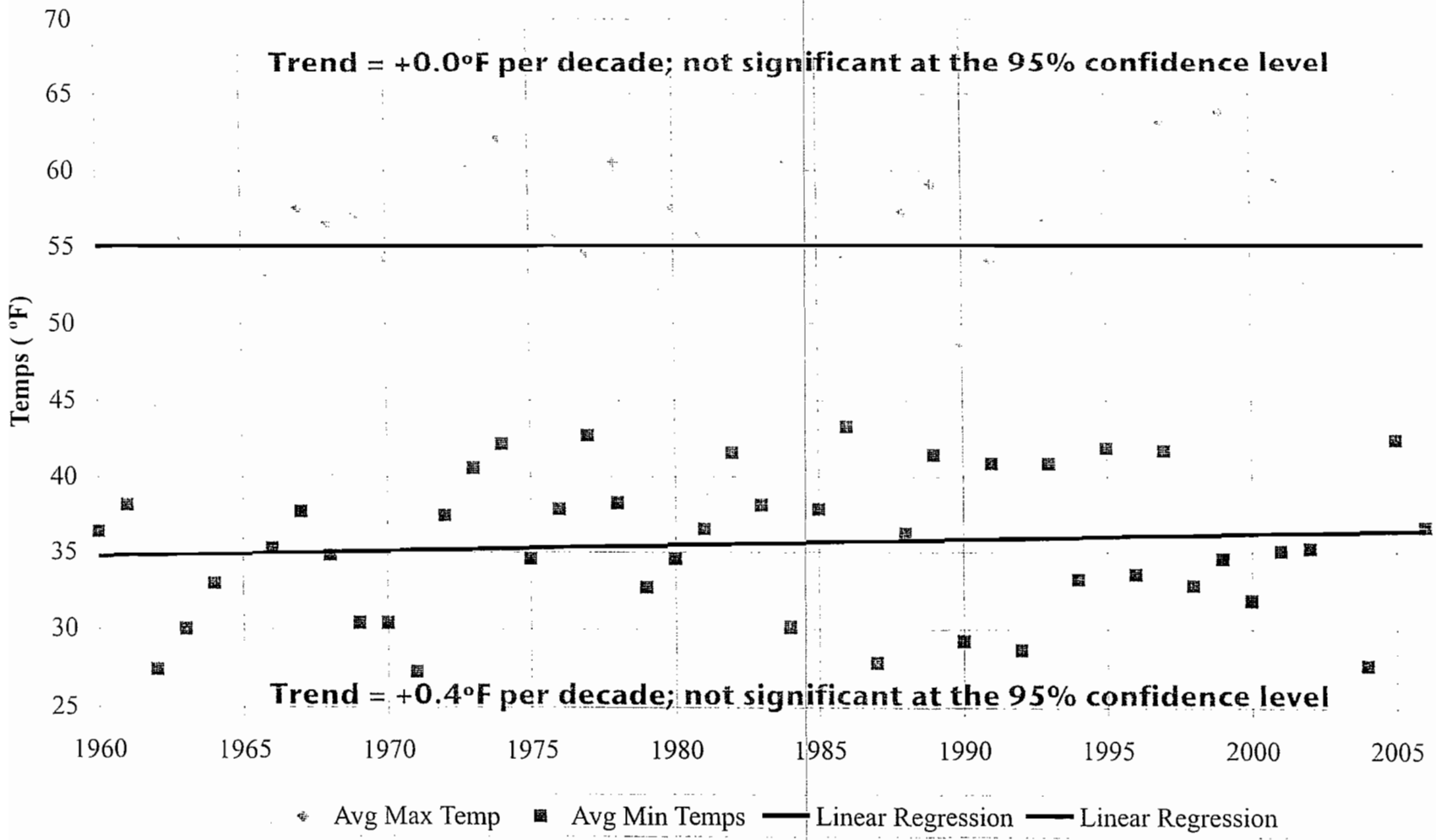
McGrath
September 9-15 Average Temperatures



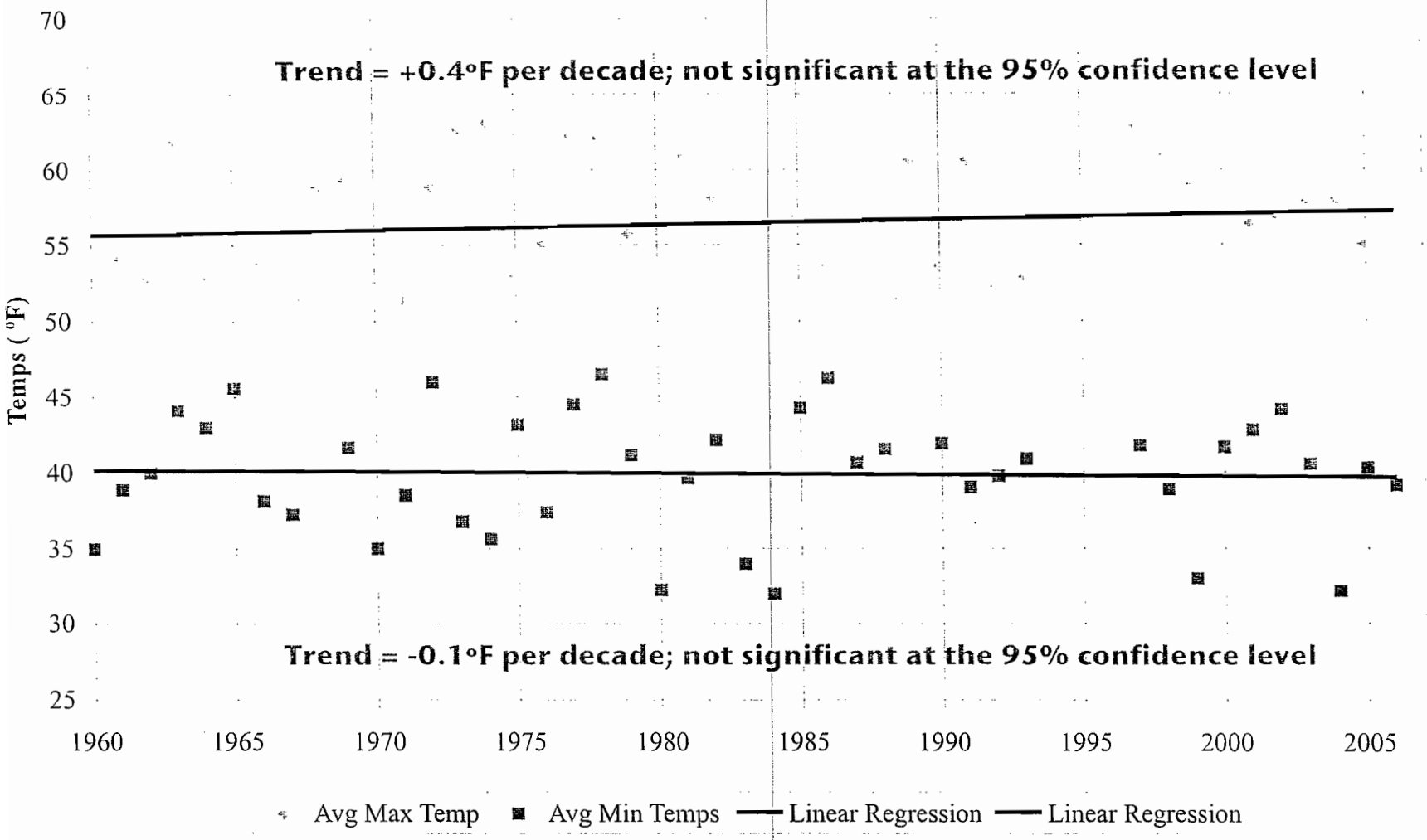
Tanana
September 1-8 Average Temperatures



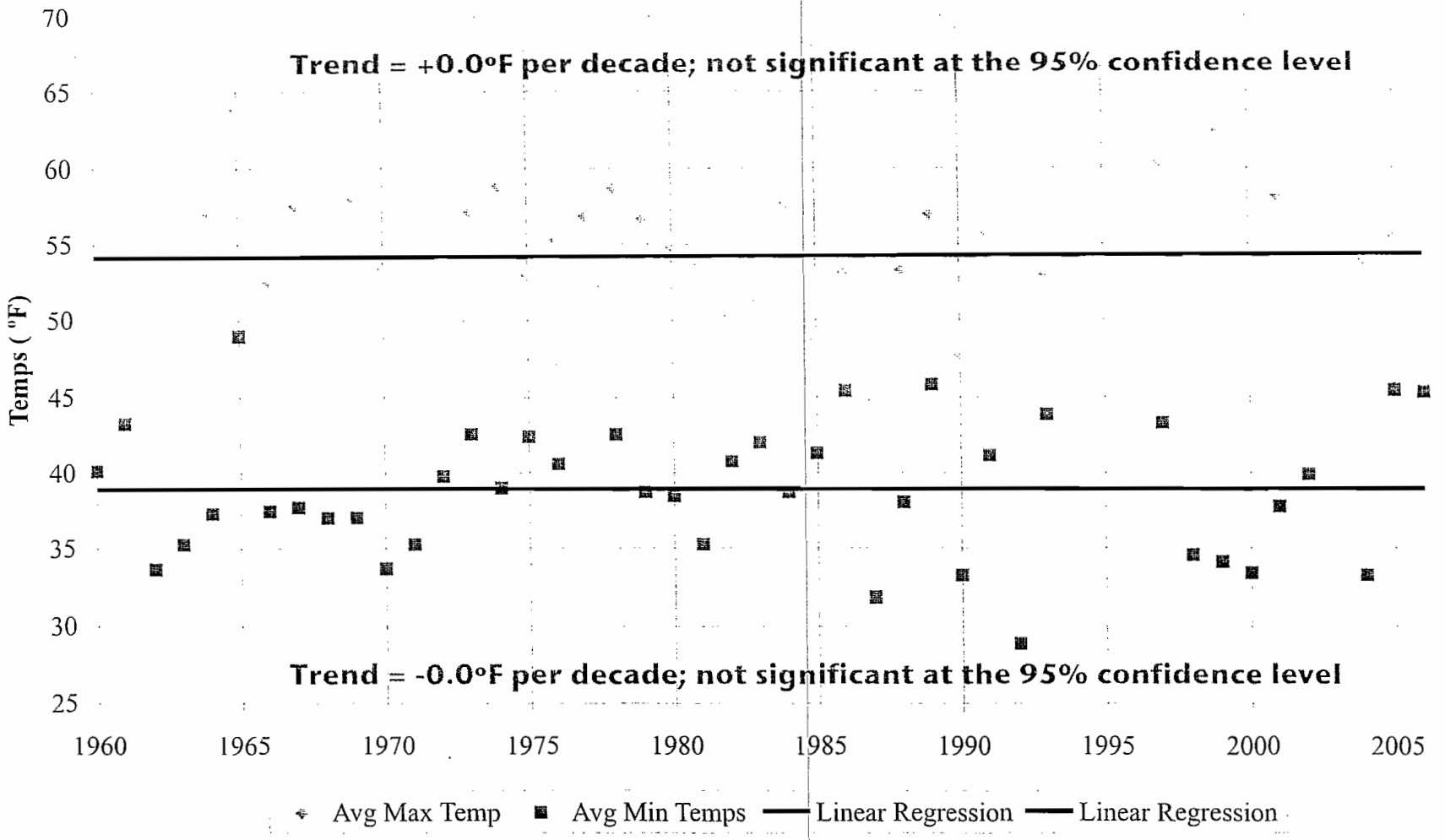
Tanana
September 9-15 Average Temperatures



Galena
September 1-8 Average Temperatures



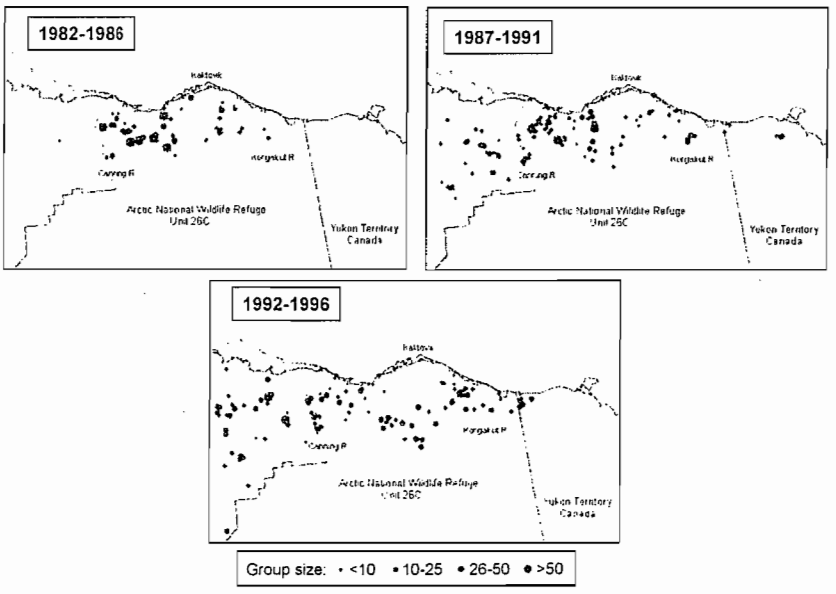
Galena
September 9-15 Average Temperatures



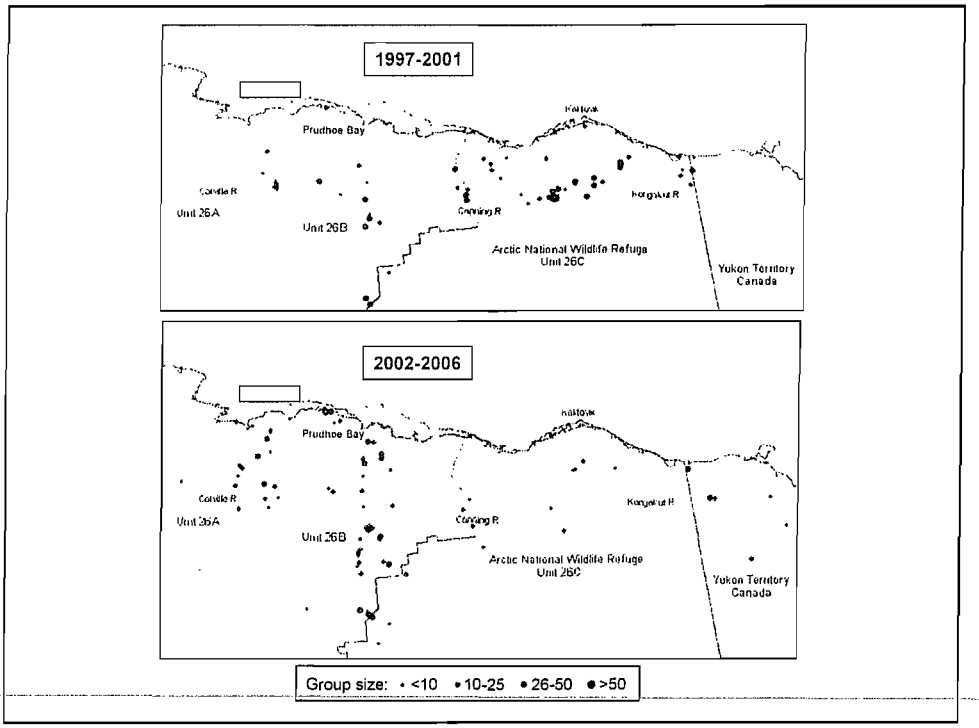
Tab H. Population Status of Musk Oxen in NE Alaska

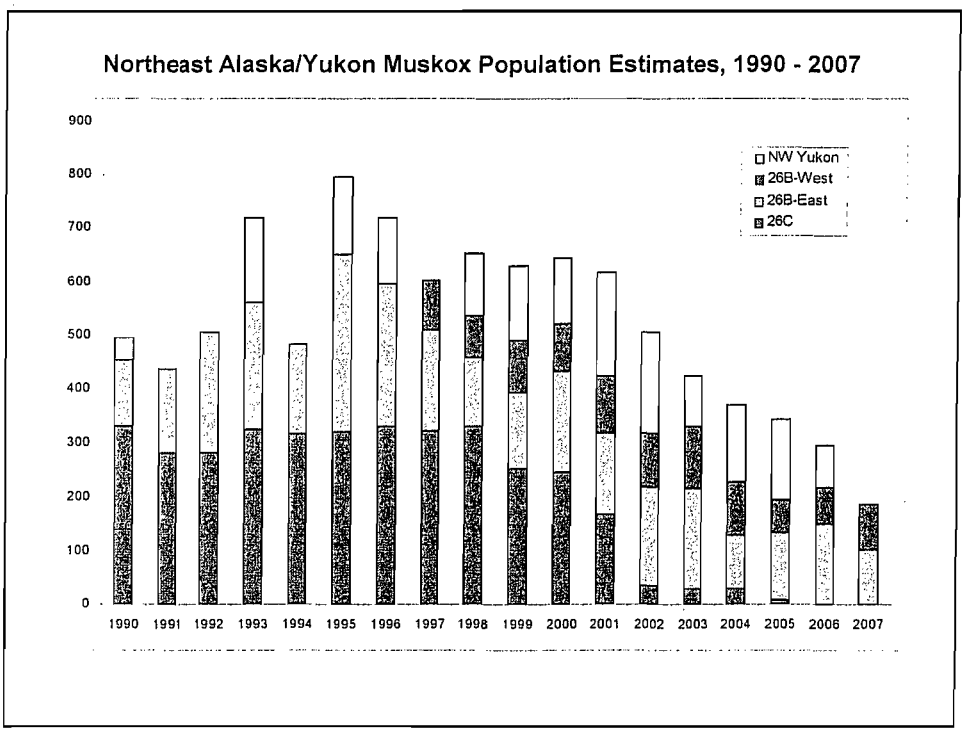
Population Status of Muskoxen in Northeastern Alaska

Changes in Distribution of Muskoxen

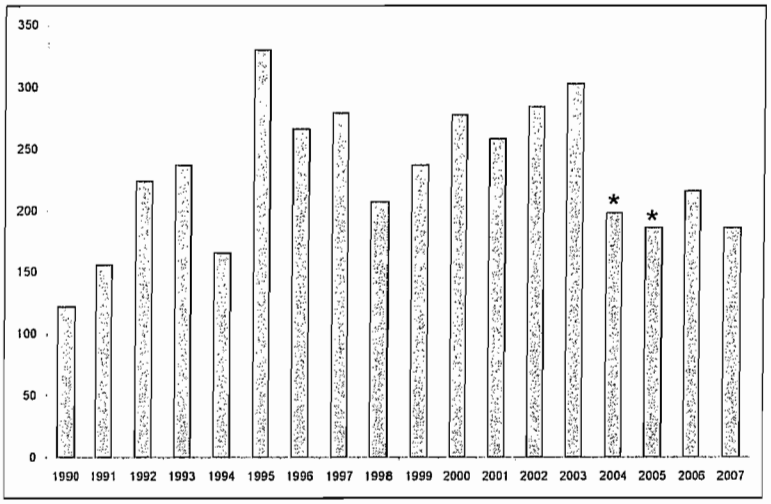


Source. P. Reynolds, Arctic National Wildlife Refuge


1997-2001
Prudhoe Bay
Kaktovik
Colville R
Unit 26A
Unit 26B
Canning R
Kongakut R
Arctic National Wildlife Refuge
Unit 26C
Yukon Territory
Canada
2002-2006
Prudhoe Bay
Kaktovik
Colville R
Unit 26A
Unit 26B
Canning R
Kongakut R
Arctic National Wildlife Refuge
Unit 26C
Yukon Territory
Canada
Group size: • <10 • 10-25 • 26-50 • >50


Northeast Alaska/Yukon Muskox Population Estimates, 1990 - 2007
900
800
700
600
500
400
300
200
100
0
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007
NW Yukon
26B-West
26B-East
26C

Muskox Population Estimates for GMU 26B, 1990 - 2007

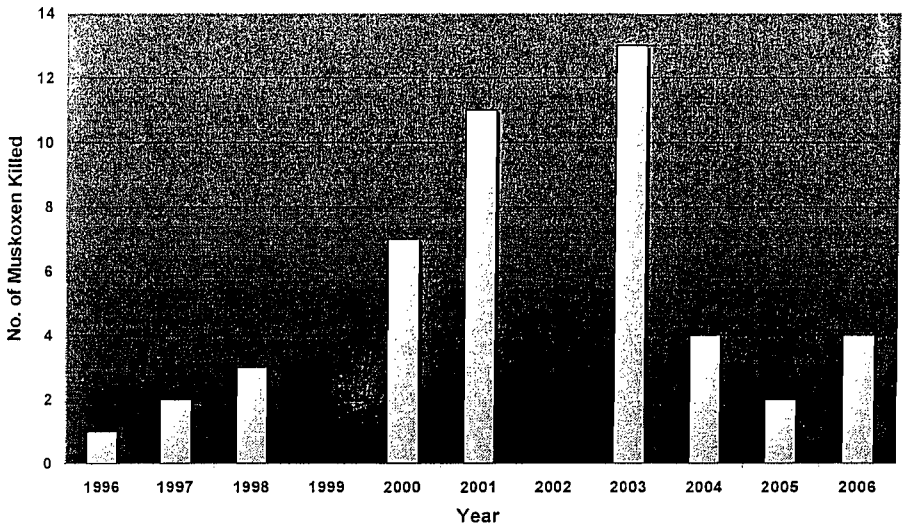


Mortality Factors:

- Predation
- Accidents
- Diseases
- Poor nutrition

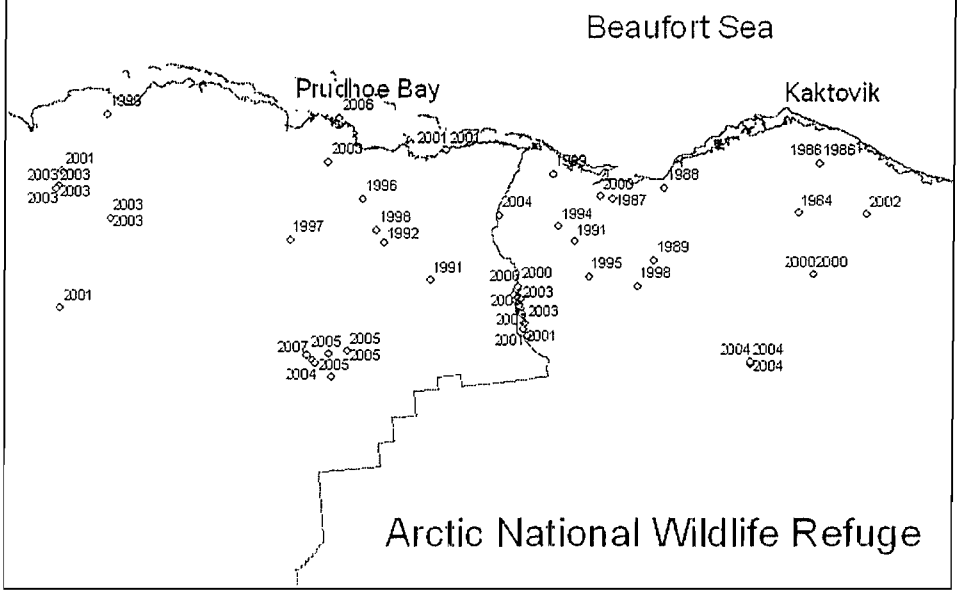
Suspected Kills of Muskoxen by Grizzly Bears, 1996–2006

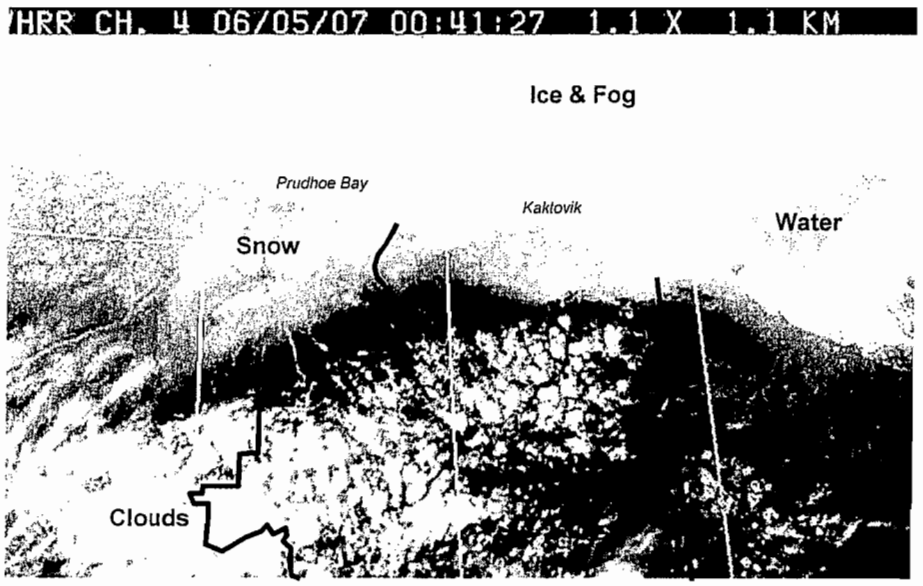
Source: R. Shideler, ADF&G



Locations of Muskox Killed by Grizzly Bears, 1984-2006

Source: P. Reynolds, Arctic National Wildlife Refuge





Snow Cover on the Arctic Coastal Plain, June 2007

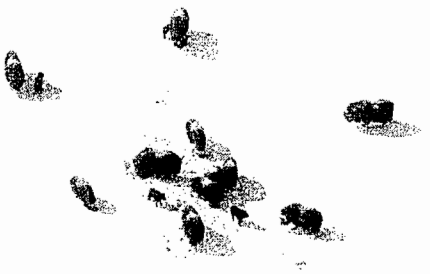
Research: Baseline Data on Demographics and Mortality Factors of Muskoxen

Objectives:

- Estimate annual birth rates.
- Estimate calf recruitment.
- Determine rates and causes of mortality.
- Assess the prevalence of infectious diseases and parasites.
- Assess nutritional condition of muskox during late winter.
- Monitor movements of muskox to evaluate habitat use and range fidelity.
- Determine effective methods and design of aerial surveys.

Methods:

- Capture 10 muskoxen/year to obtain blood and tissue samples and attach radio collars.
- Monitor muskox groups during April–June to estimate calf production and detect mortality.
- Investigate muskox deaths to determine causes and potential predisposing conditions.
- Collect fecal/urine samples during late winter for nutritional analysis.
- Determine population size and age/sex composition during April, June, and October.



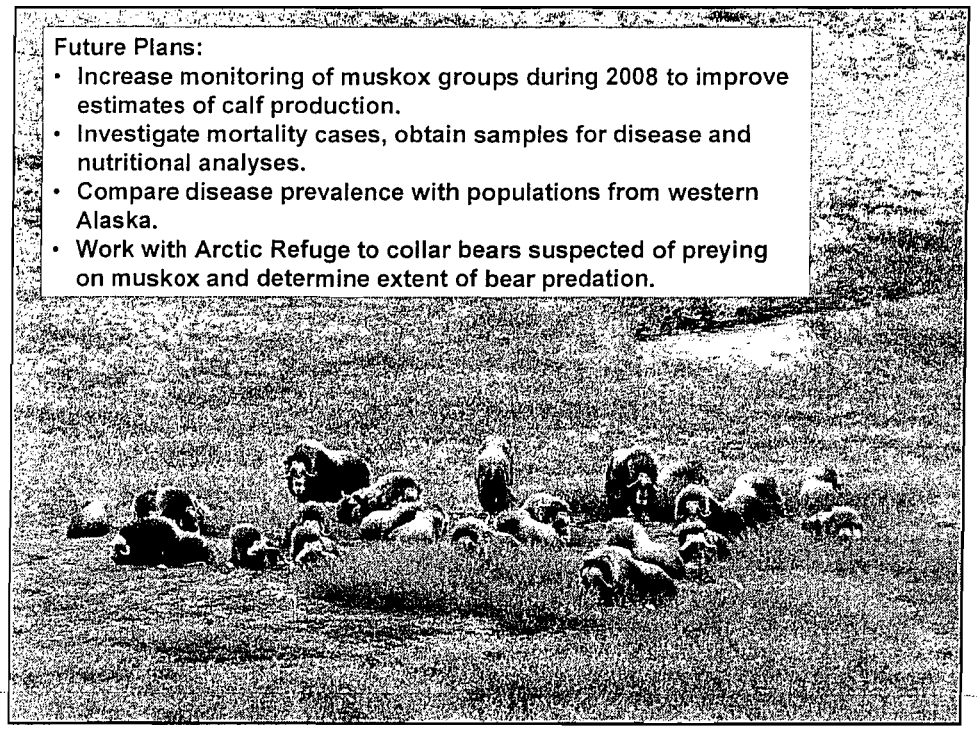
2007 Results:

April population size: 196
- October population size: 191
- Minimum number of births: 28
- Calves alive in October: 16
- Calf mortality:
  - 13 possible bear predation
  - 2 non-predation (neonatal)
- Adult mortality:
  - 4 possible bear predation
  - 3 non-predation (disease/poor nutrition)

Diseases/pathogens found:

Bovine Viral Diarrhea
- Parainfluenza-3 (100%)
- Contagious Ecthyma
- Brucellosis
- *Chlamydiophila* (55%)
- *Pasteurella trehalosi*

Sublethal effects:
- Abortion, reduced calf survival
- Weakness, joint deformity, susceptibility to predation


Future Plans:
• Increase monitoring of muskox groups during 2008 to improve estimates of calf production.
• Investigate mortality cases, obtain samples for disease and nutritional analyses.
• Compare disease prevalence with populations from western Alaska.
• Work with Arctic Refuge to collar bears suspected of preying on muskox and determine extent of bear predation.

GAME MANAGEMENT UNITS 25A, 25B, 25D, 26B and 26C

NORTHEAST ALASKA AREA OFFICE

Area Biologist: Beth Lenart, Fairbanks
Assistant Area Biologist: Jason Caikoski, Fairbanks

DESCRIPTION

The Northeast Alaska area includes the drainages of the Upper Yukon basin upstream from Fort Hamlin (above the Dalton Highway Bridge on the Yukon River) and the eastern North Slope from the Itkillik drainage to the Canadian Border. The area encompasses 73,800 mi^2, including more than 26,000 mi^2 of arctic, alpine and subalpine tundra in the eastern Brooks Range and on the north slope, and over 40,000 mi^2 of boreal forest in Game Management Unit 25. The Upper Yukon basin is subject to frequent lightning caused fires. Abundant successional and riparian shrub habitat and low snowfall provide excellent habitat for moose. The Yukon Flats includes numerous lakes and meadows and is a major waterfowl nesting area. Road access is limited to the Dalton and Steese Highways. The area includes the Arctic and Yukon Flats National Wildlife Refuges, small portions of the Gates of the Arctic and Yukon-Charley National Preserves, as well as large areas managed by the Bureau of Land Management (BLM), the State, and additional areas owned by Native corporations.

Game Management Units and areas are:

25A	-	21,300 mi^2
25B	-	9,100 mi^2
25D	-	17,600 mi^2
26B	-	15,500 mi^2
26C	-	10,300 mi^2
Total Area		73,800 mi^2

There are 9 communities (Arctic Village, Beaver, Birch Creek, Chalkitysik, Circle, Fort Yukon, Kaktovik, Stevens Village, and Venetie) with a total population of about 1,700. In addition, the Prudhoe Bay complex is located in northern Unit 26B.

Advisory committees in the area include:

- Yukon Flats Fish and Game Advisory Committee
- North Slope Fish and Game Advisory Committee
- Eastern Interior Subsistence Regional Council

Conservation system units are:

- Yukon Flats National Wildlife Refuge

- Arctic National Wildlife Refuge
- Yukon–Charlie Rivers National Preserve
- Gates of the Arctic National Preserve

Controlled use/management areas include:

- Dalton Highway Corridor Management Area

  The Dalton Highway Corridor Management Area (DHCMA) includes land five miles east and west of the Dalton Highway from the Yukon River north to the Arctic Ocean, with a total area of about 3,600 mi^2. The DHCMA was established in 1980 and some amendments were made in 1985 and 2002. The area was established based on a perceived need, primarily on the part of communities in Unit 26, to limit access by hunters. Alaska Statute 16.05.789 prohibits hunting with firearms within the corridor; however, regulation allows big game, small game, and fur animals to be taken in the area by bow and arrow only. No motorized vehicle, except aircraft, boats, and licensed highway vehicles on publicly maintained roads, may be used to transport game or hunters within the DHCMA. Alaska Statute 19.40.210 prohibits the use of off-road vehicles within 5 miles of the highway right-of-way in this area. The DHCMA has achieved its original purpose.

- Prudhoe Bay Closed Area

  The Prudhoe Bay Closed Area encompasses the Prudhoe Bay industrial complex, and extends west to include the Kuparuk River area, with a total area of 432 mi^2. It was established prior to the DHCMA and was based on public safety and security issues associated with the extensive oil field facilities in the area. The area is closed to the taking of big game. In 2002 the Board of Game extended the restrictions on the use of motorized vehicles for hunting in the DHCMA to apply to the Prudhoe Bay Closed Area. This is consistent with statutory intent, and closed a loophole in the regulation. The public generally accepts the restrictions, although difficulty in locating the southern boundary has caused some confusion. The closed area appears to have achieved its purpose.

Special projects include:

- Community Harvest Permits

  The Department worked with the Yukon Flats Fish and Game Advisory Committee and local residents to develop the Community Harvest Permit program, which was initiated in 2000. This system is intended to better accommodate local harvest practices by allowing a community or other group to administer a hunt in which individual bag limits are pooled and key hunters can take more than one moose. Other goals include improved harvest reporting and maintaining harvest within sustainable limits, while not discriminating among subsistence users. A local hunt administrator signs up participants, issues permits

and monitors the harvest. In 2002, the Board approved minor amendments to 5 AAC 92.072 that simplified administration of Community Harvest Permits.

The Chalkyitsik Village Council applied for and administered a Community Harvest Permit hunt during most years. Up to twenty eight participating hunters have taken up to 12 moose. Moose numbers are low, accounting for the limited harvest. A community harvest permit for black bears was established for Unit 25D in 2002. The Beaver Village Council administered two Community Harvest Permits for black bears. Twenty one black bears were taken in 2002–2003. The community did not apply for permits in subsequent years. The community harvest system has generally worked as intended, and has the potential to work in other situations where individual bag limits may not fit well with local harvest practices.

- Yukon Flats Cooperative Moose Management Plan

  In early 2001, the department initiated a cooperative effort to develop a moose management plan for the Yukon Flats. This plan was developed under the sponsorship of the ADF&G, Division of Wildlife Conservation, in cooperation with the Yukon Flats Fish and Game Advisory Committee (YFAC), and through the Yukon Flats Moose Management Planning Committee. The committee was a temporary group created specifically for the planning project. Other stakeholders involved in the project included the Council of Athabascan Tribal Governments, individual tribal governments, the Yukon Flats National Wildlife Refuge, the U.S. Fish and Wildlife Service (FWS) Office of Subsistence Management and other interested users of the Yukon Flats moose resource. The Yukon Flats Cooperative Moose Management Plan was completed, and was endorsed by the Board of Game, in 2002.

- Wood Bison Restoration

  The status of the wood bison restoration effort will be addressed by the department in a separate presentation. Wood bison restoration on the Yukon Flats is still being considered.

BROWN BEAR

STATUS: An estimated 1,430–2,070 grizzly bears occur in the area, with populations north and south of the Brooks Range estimated at 460–710 and 870–1,360 bears, respectively. Population estimates are based on extrapolations from studies in other areas with similar habitat. The harvest of bears is generally below current estimates of sustainable yield. In the last few decades, bear populations appeared to have increased throughout much of the area and hunting regulations were gradually liberalized. Since the mid-1990s, bear populations probably have remained stable because habitat has not changed much and harvest was conservative. They are considered to be at a low to moderate density on the North Slope and moderate density on the south side of the

Brooks Range. However, there is a possibility the population in Unit 25D increased or expanded to new habitat, because local residents on the Yukon River observed more brown bears along the river corridor recently compared to years prior to 2000.

MANAGEMENT ACTIVITIES: Management efforts include compiling and analyzing harvest data and establishing local bear sealing agents. In Units 25A, 26B, and 26C, activities have included communicating with guides, outfitters, and hunters to encourage selection of male bears. In Unit 25D, an objective to temporarily reduce the number bears was established with the implementation of the Yukon Flats Moose Management Plan in 2002. In Unit 26B, a new aerial transect density estimating technique was applied in portions of the unit during 1999–2003.

ISSUES: The apparent long term increase in grizzly bear numbers on the Yukon Flats and potential effects on moose populations is of concern to some local residents. Liberalized regulations have so far had little effect on harvest levels, and some additional liberalization is possible.

CARIBOU

CENTRAL ARCTIC HERD (CACH)

STATUS: The Central Arctic caribou herd was estimated to number 32,000 in 2002. Subsequent attempts to census the herd have been unsuccessful, but high calf:cow ratios in June and low annual adult mortality indicate the herd has likely increased since 2002. The herd ranges primarily in Units 26B and 25A, and has increased since 1995, when it numbered 18,000 animals. As herd size increased, the CACH expanded its wintering grounds from the north side of the Brooks Range in Unit 26B to include areas south of the continental divide in Unit 25A. Annual harvest is estimated at 650–800 caribou (2.5% of the herd). Most of the harvest is by nonlocal Alaskan residents.

MANAGEMENT ACTIVITIES: Pregnancy rates and calf:cow ratios are estimated in early and late June by monitoring radiocollared cows. A photocensus is attempted every 2–3 years to estimate population size. Fall composition counts are conducted when possible. Approximately 10–20 new vhf radio collars are deployed annually on female caribou to assist in maintaining an adequate sample size for determining calf:cow ratios and locating the herd during a photocensus.

A research study investigating the effects of oil field development on calf production and survival was conducted during 2001–2006. Preliminary analysis indicated that calves born in an area with little or no industrial development had greater body mass and metatarsus (lower leg bone) length compared with calves born in or near an area with development; but summer gain in body mass as a proportion of birth mass showed the opposite trend.

ISSUES: Concerns that oil exploration and development are affecting the calving grounds and postcalving movements of the CACH are still being investigated. There is

some concern that as more infrastructure is put in place, the calving grounds will shift to less preferred habitat.

In recent years, the increase in the number of archers and other hunters using the Dalton Highway has prompted several public proposals related to hunt quality and other conditions of the hunt. There has been disagreement among the hunting public as to reasonable solutions to these issues. Some of the issues are wanton waste, poor hunter ethics, stalking caribou that are already being hunted, and traffic concerns with truckers. These issues are present in any hunt that occurs along a road. In addition to concerns directly along the highway, there has also been an increase in the number of hunters using boats to access areas off the highway, particularly the Ivishak River. Some hunters have expressed frustration related to hunting ethics (e.g. transporters going up and down the river dropping off hunters near other camps), similar to those observed along the highway.

PORCUPINE HERD (PCH)

STATUS: The Porcupine caribou herd numbered about 123,000 in 2001. Weather conditions and characteristics of caribou movements have hampered more recent efforts to census the population. The herd has declined by 31% since its peak population of 178,000 was recorded in 1989, but may still be larger than during the 1970s, when it was estimated at 100,000 caribou. The herd migrates seasonally between Units 26C, 25A, 25B in summer and the Northwest Territories and Yukon in Canada during fall and winter. The current decline apparently began during a series of hard winters during 1990–1992, which reduced calf production and survival. However, the herd continued to decline during the mid and late 1990s, when winter weather was less severe and calf production and survival were greater. Recently, in some years, persistent snow cover during May and June delayed the herd in reaching its preferred calving grounds on the coastal plain of the Arctic National Wildlife Refuge. This reduced survival of calves. A continued decline could eventually lead to proposals to reduce harvest of females and some restrictions on nonresident hunters. The PCH is lightly hunted in the US, and total harvest in Canada and Alaska is estimated to be approximately 2,500–3,000 animals, with most being taken by local hunters in Canada.

MANAGEMENT ACTIVITIES: Parturition rates and calf:cow ratios are determined in early and late June by monitoring radiocollared cows. A photocensus is attempted every 2–3 years to estimate population size. Approximately 20–30 new collars are deployed annually on female caribou to assist in determining calf:cow ratios and locating the herd prior to each photocensus.

ISSUES: ADF&G is cooperating with the US Fish and Wildlife Service, Arctic National Wildlife Refuge (ANWR) and Canadian government agencies to monitor the herd. Canada is currently developing a PCH Harvest Strategy Plan to implement some restrictions on harvest in Canada. ADF&G will participate in this planning effort.

FURBEARERS

STATUS: Furbearers undergo normal cycles of abundance, and the area is known for its healthy populations of lynx, marten, fox and beaver. Trapping has been historically important in the culture and to the economy of the Yukon Flats, but trapping activity is presently low due to declining fur prices (except for marten) and other social and economic changes. Lynx populations have been fairly high in Unit 25D and 25B during the last few years, as indicated by sealing records and observations from residents of the area, trappers, and biologists. Lynx are in the building phase of their population cycle and should reach population highs over the next few years. Arctic and red fox populations were particularly high on the North Slope in Unit 26B and 26C during the winter of 2006–2007, and that precipitated a rabies outbreak. Fox populations likely declined significantly but are expected to recover.

MANAGEMENT ACTIVITIES: Sealing records, fur export reports, direct communication with trappers, and the results of a trapper questionnaire are used to monitor population and harvest levels of furbearers.

ISSUES: High beaver populations and possible effects of beaver dams on whitefish populations and movement continues to be a concern for many locals in the Yukon Flats. This was the subject of a cooperative study between ADF&G Subsistence Division, the Council of Athabascan Tribal Governments, and local residents that was published in 2001. Although whitefish continue to be broadly distributed across the Yukon Flats, populations appear to be in decline. High beaver populations may be contributing to a declining whitefish population by limiting passage in some drainages. However, it is likely that an observed decline in whitefish is the result of multiple factors including large scale weather and hydrological changes.

MOOSE

UNITS 25A, 25B, AND 25D

STATUS: Moose are distributed throughout the area and are an important resource for local communities. However, population density is low compared to other areas in Interior Alaska, ranging from 0.20 moose /mi^2 to 0.35 moose/mi^2, in most areas. There is widespread concern regarding apparent declines in Units 25B and 25D, which include substantial areas with excellent moose habitat. Surveys in Unit 25D, the most heavily hunted unit, generally show modest or high calf:cow and high bull:cow ratios. There are an estimated 3,000–4,000 moose in Unit 25D. Limiting factors include predation by black bears, grizzly bears and wolves, as well as hunting. Predation by black bears and grizzly bears is the major cause of calf moose mortality during summer, accounting for over 80% of the calves born during a 2-year study by FWS in Unit 25D West.

During the past 5 years (RY02–RY06; RY begins 1 Jul and ends 30 Jun; e.g., RY02 = 1 Jul 2002 through 30 Jun 2003), approximately 300 hunters reported taking 100 moose in Units 25A, 25B and 25D under a general harvest ticket. In addition, 10–30 are reported taken annually in Unit 25D West under Tier II and federal subsistence permits. However,

a large proportion of the harvest by local residents is not reported. A harvest-monitoring project conducted by the Council of Athabascan Tribal Governments indicates that local residents harvest 150–200 moose annually in 25D and 25B.

MANAGEMENT ACTIVITIES: Population and composition surveys are conducted annually in cooperation with the Council of Athabascan Tribal Governments, (CATG) Natural Resources Department, and FWS. A major management effort took place in 2001 and 2002 in which the Yukon Flats Cooperative Moose Management Plan was developed and implemented. This effort focused on community and agency initiatives that together could maintain or increase moose abundance, especially in key hunting areas near local communities.

Beginning fall 2007, the department initiated writing an intensive management plan for Unit 25D. The department (with input from Yukon Flats Advisory Committee, CATG, FWS Yukon Flats Refuge, and Eastern Interior Regional Council) will explore management measures in addition to those identified in the 2002 Yukon Flats Cooperative Moose Management Plan that might be feasible given the landownership pattern and other constraints.

ISSUES: Chronically low moose numbers in Unit 25D continue to be a major concern. There are also indications that moose numbers in Units 25A and 25B have declined in recent years. Both local and nonlocal users are concerned about predation by wolves and bears and the illegal harvest of cow moose. Although the number of nonlocal moose hunters in Unit 25 is relatively small, their presence is sufficient to cause concern among local residents. Differing state and federal regulations are often confusing to hunters. Recent management efforts have focused on simplifying regulations in Unit 25D West, developing a way to accommodate local patterns of resource use through the community harvest permit system, and developing and implementing a moose management plan.

UNITS 26B AND 26C

STATUS: In the late 1980s, the moose population in Units 26B and 26C peaked at approximately 1,300 moose. During the early 1990s, numbers declined dramatically to approximately 500 moose when low calf survival and high adults mortality reduced numbers by about 60%. The population remained at a low level for many years. However, beginning in 2003, the moose population appeared to continue a gradual increase mostly in Unit 26B. Currently, the total number of moose is approximately 850 and appears to be stable or slightly increasing. In 2006, we calculated a 3% harvest rate for the Unit 26B population and estimated harvestable surplus at 15 bulls.

The moose season in Unit 26B (excluding the Canning River drainage) was opened to residents in 2006 because the population objectives were met. It includes a general season for 1 bull for 14 days during Feb. 15–April 15 and a limited drawing permit (up to 30 permits) for 1 bull during Sept. 1–14. In 2006, 15 permits were available and 7 moose were reported harvested under the permit hunt. No moose were reported harvested under the general season.

MANAGEMENT ACTIVITIES: Spring surveys are conducted annually to estimate population size and percent calves in the population. In 2008, we will estimate twinning rates in early June. Every 2–3 years, we will conduct fall surveys to obtain bull:cow ratios because a hunting season was opened in 2006.

ISSUES: The moose season was closed in 1996 in response to the dramatic decline in moose numbers and reopened in Unit 26B in 2006 to residents only. ADF&G will continue to monitor the population. The state season in Unit 26C remains closed, but a federal season is opened and managed by ANWR.

MUSKOX

STATUS: During the mid 1990s, approximately 700–800 muskoxen inhabited northeastern Alaska and northwestern Canada, but recent surveys indicated that they declined significantly during the late 1990s through the present, particularly in Unit 26C. During this time, muskoxen were also expanding westward into Unit 26A. Beginning in 2001, we recognized that the overall population size in Units 26A-26B and 26C declined considerably, but the population dynamics were different in the 2 areas. In Unit 26C, we observed 254 muskoxen in 1999, and by 2006 we only observed one muskox. However, the subpopulation in Units 26A-26B was considered stable during 1999–2003 (300 muskoxen observed during a census in 2003). No census was conducted in Units 26A and 26B in 2004 or 2005, and we could not locate some large groups and suspected that the subpopulation in Unit 26B might also be declining. Therefore, in April 2006, we conducted a census in eastern Unit 26A, Unit 26B, Unit 26C, and western Yukon Canada (33,000 mi^2). This was a cooperative effort among ADF&G, USFWS/ANWR, and Gates of the Arctic Park and Preserve (GAAR). Results indicated that the overall population had declined to 400 muskoxen. Additionally, we determined that the Unit 26A-26B muskox subpopulation declined from 300 in 2003 to 200 in 2006. The major factors influencing the decline were likely annual variation in weather affecting female body condition and winter foraging, brown bears becoming more efficient predators on muskoxen, emigration, and possibly disease.

Hunting for muskoxen on the eastern North Slope in Alaska has only been allowed under a combination of registration, drawing and Tier II permit systems. The annual reported harvest in Units 26B and 26C has been 5–18 since RY90 when both units were opened to hunting and has been <4% of the estimated total population. Beginning in regulatory year (RY) 2003 (RY03; RY begins 1 Jul and ends 30 Jun; e.g., RY03 = 1 Jul 2003 through 30 Jun 2004), permits to hunt muskoxen were not issued for federal lands in Unit 26C. In RY05, ADF&G did not issue permits for the drawing and Tier I registration hunts east of the Dalton Highway in Unit 26B; however, the Tier II subsistence hunt west of the Dalton Highway remained open. In RY06, permits to hunt muskoxen were not issued for any state or federal lands in eastern Unit 26A, Unit 26B, and Unit 26C.

MANAGEMENT ACTIVITIES: ADF&G works cooperatively with ANWR to manage muskoxen in northeastern Alaska. In general, ADF&G directly managed the Unit

26B subpopulation and ANWR managed the Unit 26C subpopulation. Activities included conducting censuses in April every 2–3 years, compositions counts in June, deploying radio collars, and administering permit hunts. The structure of the permit hunts was developed in the North Slope Muskox Harvest Plan which was approved by the Board of Game in 1999. ADF&G, North Slope Borough, USFWS, BLM, and representatives from local villages participated in developing the plan.

Beginning spring 2007, a research project to look at potential causes of muskoxen mortality and the decline—which include nutrition, disease, predation, and re-distribution—was initiated. It is possible all of these contributed to the decline. Specific objectives were to: 1) estimate annual birth rates for muskox cows, 2) estimate annual calf recruitment through late June, and 3) determine rates and causes of mortality of muskox during April–June, 4) evaluate relative importance of mortality of cows vs. calves, 5) estimate the prevalence of various diseases in the muskox population.

ISSUES: Current issues involve investigating causes of mortality and reasons for the decline. There has been some concern about increased predation by brown bears on muskoxen in these areas and the role that may play in the decline.

Previously, management issues involved allocating harvest opportunity and addressing local concerns about the growth in muskox numbers and possible competition with caribou in Units 26A and 26B.

SHEEP

STATUS: Sheep are widespread in the eastern Brooks Range, with the highest densities in the northern drainages and in western Unit 25A. An estimated 13,000 sheep occupied the area in 1985, but survey data and anecdotal reports indicate numbers declined by approximately 40% during the late 1980s and early 1990s due, in part, to severe weather and poor lamb survival. Since the mid 1990s, survey data indicate that the population has been relatively stable. Sheep harvest declined from over 250 annually in the late 1980s to less than 150 each year, but the area is still popular among sheep hunters and guides. A full curl regulation took effect in 1993. Hunters generally support this regulation. A small number of sheep are taken in a winter registration hunt in Units 25A and 26C.

MANAGEMENT ACTIVITIES: Ground composition surveys are conducted annually in Unit 26B by USFWS, and a cooperative study of movements and population identity was completed in the early 1990s. Beginning in 2002, population surveys were completed annually in the upper Chandalar drainage in an area that has become popular for guided and unguided resident sheep hunters. Survey results suggest that the sheep population and the proportion of legal rams have been stable in recent years. Sheep surveys in the upper Chandalar drainage will be conducted during the summer of 2008. Sheep harvest and hunter effort are monitored based on harvest ticket reports.

ISSUES: A reduced sheep population that resulted from significant declines during the late 1980s and early 1990s is an ongoing concern. Sheep numbers continue to be well below historic highs, although recruitment appears to have improved in some areas.

The Federal Subsistence Board established the Arctic Village Sheep Management Area in Unit 25A in 1991, and its northern boundary was expanded in 1995. This area was closed to sheep hunting by non-federally qualified hunters and has been the subject of debate in connection with dual management. A portion of this area was re-opened in May of 2007 to a full-curl general season to comply with ANILCA.

There is also a registration permit hunt available to Alaska residents in Units 25A and 26C during Oct. 1–Apr. 30, with a bag limit of 3 sheep. The conditions of this permit have the effect of limiting hunting by people living outside the units and likely few sheep are taken by nonlocals. A federal permit with the same bag limit and season exists in this area causing confusion for residents of Kaktovik pertaining to obtaining permits and reporting. Thus, there is little or no reporting by hunters from Kaktovik. ADF&G plans to work with the North Slope Borough to determine number of sheep harvested by residents of Kaktovik.

The number of hunters and guides in western Unit 25A and eastern Unit 24 has increased in recent years. Some guides have expressed concerns that the area is overcrowded and would like to see exclusive guide areas re-established. We have expanded population monitoring efforts in this area. In general, we estimate that most of the full curl rams observed during the sheep survey are harvested in the fall.

WOLVES

STATUS: Wolves are moderately abundant throughout Units 25A, 25B, and 25D and harvests are low relative to the total population (4.4–4.7 wolves/1000 km^2). Annual harvest, primarily by trappers, has been relatively stable over the past 15 years and averages 50 wolves.

Wolves are present on the North Slope in Units 26B and 26C in low numbers (40–100 wolves). Approximately 5–35 wolves are harvested annually, primarily by trappers, and likely have little effect on the population.

MANAGEMENT ACTIVITIES: Major activities include monitoring harvests, communicating with residents and pilots to obtain anecdotal information on wolf numbers, and conducting periodic wolf population surveys. A wolf survey in Unit 25 is planned for the spring of 2008. Some communities in Unit 25 have requested trapping clinics. In 2007, ADF&G conducted a wolf snaring clinic in Beaver. The department may conduct a second clinic in 2008 in another Unit 25 community.

ISSUES: Wolf predation on moose is a concern, particularly in Units 25B and 25D. However, no estimates exist on predation rates for wolves on moose in this area. Local residents are currently exploring methods to increase wolf harvest and reduce moose

predation by wolves. A rabies outbreak occurred on the North Slope in Units 26B and 26A during the winter of 2006–2007. It is probable that this had an effect on the wolf population in Unit 26B, but we do not know the extent.

GAME MANAGEMENT UNITS 19, 21A AND 21E

McGRATH AREA OFFICE

Area Biologist: Roger Seavoy
Assistant Area Biologist: Joshua Peirce

DESCRIPTION

The McGrath area biologist is responsible for management of a wide variety of wildlife species, primarily big game and furbearers, in western Interior Alaska. All drainages of the Kuskokwim River upstream of the village of Kalskag are included, as well as a portion of the middle Yukon drainage (including the Anvik, Iditarod, and Innoko Rivers). The area encompasses over 55,000 square miles of diverse habitats ranging from mountainous alpine to black spruce taiga and open tundra. Seventeen villages in the area are represented with advisory committee seats and several village sites not represented remain important to area residents. Historically, 5 different Native languages were spoken in this area which provides a sense of the political complexity. Land status is diverse; parts of two National Parks, two National Wildlife Refuges, Bureau of Land Management (BLM) tracts, State lands, and Native Corporation lands are scattered throughout the area. There are four Fish and Game Advisory Committees (ACs), including McGrath, Grayling-Anvik-Shageluk-Holy Cross (GASH), the Central Kuskokwim AC with new representation, and the newly created Stony-Holitna AC (SHAC) which was formed when the old Central Kuskokwim AC was divided. Lowland areas within the management area (Units 19A, 19D, and 21E) are used largely by local, boat-borne hunters. The upland units (19B, 19C, and 21A) are accessible largely by aircraft, and hunters using these upland units are generally from outside the area. Moose, caribou, brown bear, black bear, Dall sheep, and bison are present. Additionally, furbearers, particularly marten, are important for a variety of uses. The functions of the McGrath area office were made more challenging after a fire destroyed the office on December 24, 2006.

MANAGEMENT AREAS

THE LIME VILLAGE MANAGEMENT AREA: The Lime Village Management Area in Unit 19A includes a small area around Lime Village where moose hunting is by Tier II permit only. This area still functions to delineate this Tier II hunt.

THE UPPER HOLITNA- HOHOLITNA MANAGEMENT AREA: The Upper Holitna-Hoholitna Management Area was established during the 1997-98 season and includes all of Unit 19B within the Aniak, Kipchuk, Salmon, Holitna, and Hoholitna river drainages. In this area, all hunters are required to stop at department check stations, though none have been established for several years, and moose and caribou taken by hunters using aircraft must be transported out of the area by aircraft. This area was established to address a perception that meat was not being completely salvaged and the “in & out of the area by aircraft” requirement probably does that.

CONTROLLED USE AREAS

UPPER KUSKOKWIM CONTROLLED USE AREA: The Upper Kuskokwim Controlled Use Area (CUA) was originally established in 1981 in Unit 19D upstream of the mouth of Big River, including the drainages of the Big River, Middle, South, and East Forks of the Kuskokwim River, and Tonzona River, bounded on the east and north by the Denali National Preserve boundary. It was established to prevent the use of aircraft for moose hunting in order to reduce the moose harvest by nonlocals, who were believed to use aircraft to access the area. In 2001, the CUA was nearly doubled in size by adding the Kuskokwim drainage upstream of the Selatna and Black River drainages and the entire Takotna River drainage. The expansion was designed to restrict aircraft for moose hunting within much of the Predator Control Implementation Plan area as the registration permit moose hunt was established. This expansion has a sunset clause and will revert to the old boundary after March 31, 2008. Nearly all hunters in this area use boats and this CUA is accomplishing its intended purpose.

HOLITNA-HOHOLITNA CONTROLLED USE AREA: The Holitna-Hoholitna Controlled Use Area was first implemented for the fall 1992 hunting season in Units 19A and 19B. It consists of the Holitna River downstream of Kashegelok, the Titnuk River downstream of Fuller Mountain, and the Hoholitna River downstream from the confluence of the South Fork of the Hoholitna River. This CUA was established to limit the number of hunters on those rivers by limiting the horsepower of their outboard motors to an aggregate of 40 hp.

The Holitna-Hoholitna Controlled Use Area had largely accomplished its intended purpose of reducing hunting pressure despite some hunters finding ways around the restriction. Currently, the moose hunting season is closed in this portion of Unit 19A and the Mulchatna caribou herd is much reduced. Moose hunting drives hunting pressure in this area, so whether this CUA will continue to serve its original purpose after moose hunting reopens depends on how a renewed moose hunt would be managed.

PARADISE CONTROLLED USE AREA: The Paradise Controlled Use Area is located in Unit 21E and consists of the area from the west bank of the Yukon River upstream from Paimiut to Eagle Island (45 miles upstream of Grayling) and from the mouth of the Iditarod River downstream along the east side of the Innoko River to Paimiut. It includes 1954 mi^2 and was established in 1977 to reduce the competition for moose between local unit residents and other hunters, especially aircraft hunters, who at the time, harvested more moose than local boat hunters. Hunting is largely by Yukon village residents who use boats. A nonresident drawing permit hunt in Unit 21E was established during the 2006-07 season limiting nonresident participation. This CUA has, and continues to, accomplish its intended purpose.

SPECIAL HUNT AREAS:

THE FORMER WABBMA: A portion of Unit 19 downriver of and including the Aniak River drainage was at one time part of the Western Alaska Brown Bear Management Area. However,

management for this purpose is now accomplished without the management area designation. The original WABBMA included Unit 18 to the west and this portion of it was included because of a history of hunters having hunted bears in the Aniak River drainage. However, hunters have never used this permit and with brown bear hunting regulations becoming more liberal, this permit is not likely to be requested.

NONRESIDENT CLOSED AREA IN UNITS 19A AND 19B: The Unit 19A and 19B nonresident closed area includes a 4 mile wide corridor on both sides of portions of the Kuskokwim, Holitna, Titnuk, Hoholitna, Aniak, Aniak Slough, Salmon, Kipchuk, Owhat, Kolmakof, Holokuk, Chineekluk, Veahna, Oskawalik, Crooked Creek, George River, Buckstock, and Doestock rivers. The area was established by an ad hoc group of local hunters and guides at the March 2002 Board of Game meeting to eliminate the conflict and competition between local resident, nonresident guided and nonresident drop-off hunters. Since its implementation, moose numbers have declined and all nonresident moose hunting opportunity has been eliminated in Unit 19A so this area no longer serves its original purpose.

THE RM650 CLOSED AREA: As a permit hunt condition of the RM650 registration permit for moose in Unit 19D East, an area immediately around McGrath was set aside as part of a predator control implementation plan adopted in 1995, during a previous administration, where no moose hunting would take place during intensive predator removal. However, subsequent plans do not require this area to remain closed and as moose in this portion of the 19D East population increase, this closed area will be eliminated.

THE TM680 MOOSE HUNT AREA: In Unit 19A, downstream of the George River and Downey Creek drainages, moose hunting is limited through Tier II permits.

BISON

STATUS: The Farewell Bison Herd ranges in Units 19C and eastern 19D. Currently, the herd consists of fewer than 150 animals, and appears to be declining.

MANAGEMENT ACTIVITIES: Aerial surveys are conducted during spring and fall to assess annual calf production and recruitment. The herd is radiotracked occasionally to determine distribution and to assist composition surveys. We have plans to deploy additional radiocollars to better assess numbers and determine the range of this herd. Two drawing permit hunts are available, one in September and the other in March.

ISSUES: Habitat deterioration has taken place as the Farewell burn shifts toward a forested habitat. Efforts to change fire management plans for the area so that natural wildfires would be allowed to burn have been made. However, no natural fires have occurred and we are considering a controlled burn. Wolf predation on bison is a concern and the number of permits has been reduced significantly.

This herd is proving important for bison conservation because of its genetic makeup. Nearly all

of the studies of Lower 48 bison reveal incursions of cattle genes in the bison genome. The Farewell herd has not had any contact with cattle or cattle/bison crosses and recent examinations confirm that these are plains bison, without domestic cattle genes, and originated from Montana bison range stock. This parent stock in Montana now has cattle incursions. As such, the importance of maintaining a herd of adequate size to maintain genetic diversity gains in importance. Our objective is to maintain a herd of 300 bison which is close to the number others have suggested is necessary to maintain genetic diversity.

BROWN BEAR

STATUS: Brown bear populations vary throughout the management area in relation to habitat quality. Harvest is extremely light in the lowland units where bear densities are lower. In the upland areas (mainly Units 19B and 19C), harvests are moderate to high.

MANAGEMENT ACTIVITIES: Harvest statistics are assessed annually and a management report is completed biannually. Harvested brown bears are required to be sealed, except under the subsistence permit, which hunters do not utilized. Processing bears taken under defense of life and property provisions occurs periodically.

ISSUES: Brown bears have been identified as a primary source of moose calf mortality near McGrath. Liberalizing bear seasons and methods and means of hunting, and brown bear control permitting have been attempted as mechanisms to reduce brown bear predation on moose, but they have been ineffective both in decreasing bear predation and increasing the take of bears.

BLACK BEAR

STATUS: Black bear populations vary throughout the management area in relation to habitat quality. Harvest is light throughout the area. However, harvest reporting is generally not required.

MANAGEMENT ACTIVITIES: Harvest statistics are assessed for areas where harvest reporting is required and a management report is completed triennially. Processing bears taken under defense of life and property provisions occurs periodically.

A black bear population estimate was conducted in Unit 19D as part of the monitoring effort associated with predator control. This effort included bear removal during 2003 and 2004 when 125 black and brown bears were moved from a 528 mi2 area surrounding McGrath. During spring 2007, it was estimated that 72 bears inhabited this area.

ISSUES: Black bears have been identified as a primary source of moose calf mortality near McGrath. Liberalizing bear seasons and methods and means of hunting, and black bear control permitting have been attempted as mechanisms to reduce black bear predation on moose, but they have been ineffective both in decreasing bear predation and increasing the take of bears.

CARIBOU

MULCHATNA, RAINY PASS, TONZONA, FAREWELL-BIG RIVER, SUNSHINE MOUNTAIN, AND BEAVER MOUNTAINS.
(Several caribou herds are partially or wholly within the McGrath Area.)

STATUS: The Mulchatna Caribou Herd peaked in numbers in 1996 at 200,000 caribou and declined to 45,000 animals by summer 2006, and models predict continued decline. During the period of rapid growth (early to mid-1990s) the herd greatly expanded its range, including instances when groups of Mulchatna caribou could be found in Units 19C, 19D, 21A, and 21E. Although management responsibility for the Mulchatna herd resides with the Dillingham Area Biologist, the range of this herd includes most of the McGrath area.

The Sunshine Mountain and Beaver Mountain herds have declined. Recent minimum count surveys revealed a combined total of fewer than 100 animals. Few data are available on the other area caribou herds, but hunter reports suggest that the Rainy Pass, Tonzona, and Farewell-Big River herds have declined to very low numbers.

MANAGEMENT ACTIVITIES: The McGrath area office periodically conducts minimum population surveys within the range of the small caribou herds in Unit 19. The Dillingham area biologist generally informs this office regarding work being done on the Mulchatna Herd. Harvest statistics are assessed annually.

ISSUES: Caribou herds have declined and the Mulchatna, Farewell/Big River, Rainy Pass, Sunshine and Beaver Mountains herds should be monitored; yet area office resources are limited.

FURBEARERS

STATUS: Overall, furbearer abundance is moderate to high. Marten continues to be the dominant furbearer harvested in the area because of the quality, abundance, ease of taking, preparation and more robust price compared to other furs.

MANAGEMENT ACTIVITIES: An annual trapper questionnaire is mailed to approximately 100 area trappers to assess fluctuations in furbearer and prey populations, annual harvest, and to maintain a dialog with trappers. Pelts are sealed when presented in the McGrath office and in trapper camps and villages by Dept. of Public Safety personnel.

ISSUES: Trapping is still an important traditional and economic activity, although not as widespread as in previous years. Pelt prices on international markets are insufficient to encourage full participation given the abundant resource available for harvest.

MOOSE

STATUS: The McGrath area has complex habitat and weather patterns and the status of moose populations varies considerably from unit to unit. In Unit 19A, moose populations are at very

low density (0.30–0.40 moose/mi^2) and declining, probably due to predation and historical harvest of females. Bull:cow ratios were very low in the Holitna–Hoholitna drainage (8 bulls:100 cows) but composition obtained during spring calving surveys in 2007 suggests the start of recovery. Moose populations in 19B are low. The 19C population appears to be stable to slightly growing. In Unit 19D, moose density surveys show stable but low densities (0.35–0.60 moose/mi^2) in most of the area, but densities around McGrath are higher (about 1.0 moose/mi^2). In Unit 21A, moose populations are probably declining as demonstrated by declining success rates while hunter numbers are declining. The winter moose population in Unit 21E remains near 1.0 moose/mi^2, but hunters in the area report declining numbers.

MANAGEMENT ACTIVITIES: We monitor radiocollared bull and cow moose in Units 19A and Unit 19B to determine movements and to assist in composition surveys. We plan to conduct density estimation surveys in portions of Units 19A, 19D, and 21E on a rotating basis and annual spring and/or fall composition/trend surveys in these areas and in portions of 19B, 19C, and 21A. More frequent moose density estimates have been completed in Unit 19D East in the fall since 2001.

Hunter harvest reports are used to assess seasons, bag limits, and other regulations on moose populations.

ISSUES: There is a great diversity of issues concerning moose in the McGrath area. In general, moose densities are low throughout the area and moose populations are influenced by wolf and bear predation and active control efforts are in place for Units 19A and 19D East. Winter moose seasons throughout most of the McGrath management area have been closed in response to low moose density and/or declining moose populations. Due to these concerns, the McGrath area has conducted several recent planning efforts: 1) the Adaptive Wildlife Management Team focused on Unit 19D East, 2) the Central Kuskokwim Moose Management Plan covered 19A and 19B, and 3) and the Yukon-Innoko Moose Management Plan for Unit 21E and a portion of Unit 21A.

SHEEP

ALASKA RANGE WEST (UNITS 9, 16, AND 19)

STATUS: No sheep surveys have been conducted since 2003 when the lamb:ewe ratio was measured at 37:100 (16% lambs), indicating a good lamb crop. The full curl ram:ewe ratio was 10:100 or 4.5%.

The number of hunters and sheep harvested has declined since 1997 from an average of 252 hunters harvesting 139 full curl rams (1990–1997 seasons) to an average of 181 hunters harvesting 82 full curl rams (1998–2004 seasons). More recently in the 2006 season, 153 hunters reported taking 60 sheep in Unit 19C, averaging 8.8 years old.

MANAGEMENT ACTIVITIES: Aerial sheep surveys are planned for the Unit 19 portion of the Alaska Range West to monitor changes in density and sex and age ratios. However, poor weather and staffing changes have prevented surveys since 2003. Sheep are sealed when presented at the McGrath office, but the bulk of the sheep taken in Unit 19C are sealed in the

field by Department of Public Safety personnel. Harvest reports are analyzed for changes in harvest characteristics.

ISSUES: Guides and transporters and their hunters complain of overcrowding even though fewer hunters report hunting in Unit 19C. Enforcement personnel suggest that the recently established sealing requirements have improved the quality of sheep being presented for sealing.

WOLF

STATUS: Wolf populations are robust throughout the McGrath management area, varying in response to prey population availability. Recent surveys included Unit 19A in January and March of 2006, with an estimated fall population of 107–115 wolves in 26–27 packs: and Unit 19D East in March 2006, with an estimated fall population of 91 wolves in at least 18 packs. Hunters, trappers, and pilots reported high numbers of wolves in Units 19C and 21A, and particularly high numbers of wolves in Unit 21E. They also reported high wolf numbers in Unit 19B along the boundary with Unit 19A.

MANAGEMENT ACTIVITIES: Estimates of wolf populations for each unit are periodically calculated, based on incidental observations, responses to trapper questionnaires, analyses of sealing documents, prey density estimates, habitat, and comparisons with other areas where population estimation surveys have been completed. Reconnaissance style wolf surveys are conducted in Units 19A and 19D East associated with our wolf control programs.

Wolf predation control has been conducted in the Unit 19D-East Wolf Predation Control Area since winter 2003–2004. Results of this program can be found in the Board of Game Predation Control Implementation Plan Reports. Wolf control is continuing in this area during winter 2007–2008.

Wolf predation control was implemented in Unit 19A during winter 2004–2005. Results of this program can be found in the Board of Game Predation Control Implementation Plan Reports.

ISSUES: The McGrath Advisory Committee proposed that we expand the wolf control zone in Unit 19D East and we responded by extending the area to cover all of the Takotna River drainage to the west and to 153^{o} 20’W to the east. This was done during the winter 2006–07 to accomplish a reallocation of moose from wolves to people and to make additional progress toward our IM harvest objectives. As part of the Yukon-Innoko Moose Management Plan, we intend to propose an intensive management plan for Unit 21E that would include wolf control. Successful wolf control efforts in Unit 19A are limited in area due to land ownership patterns with the greatest success occurring in the Holitna and Stony River drainages.

GAME MANAGEMENT UNITS 21B, 21C, 21D & 24

GALENA AREA OFFICE

Area Biologist: Glenn Stout, Galena
Assistant Area Biologist: Tony Hollis
Wildlife Technician: Josh Ernst

DESCRIPTION

Game Management Unit 21B contains approximately 9,311 mi^2. It consists of the Yukon River corridor between Tanana and Ruby, including the Nowitna River. The Nowitna National Wildlife Refuge occupies most of the unit south of the Yukon River. Ruby is the only village within Unit 21B.

Unit 21C contains approximately 3,670 mi^2. It consists of the Melozitna River drainage upstream from "the rapids" near the mouth, and the Dulbi River drainage upstream from Cottonwood Creek. There are no villages or year-round residents in Unit 21C.

Unit 21D contains approximately 12,110 mi^2. It consists of the Yukon River drainage from Blackburn upstream to Ruby, and the Koyukuk River drainage downstream from Dubin Point. Part of the Koyukuk Controlled Use Area is included within Unit 21D. Federal conservation areas in Unit 21D include parts of Koyukuk National Wildlife Refuge and parts of Innoko National Wildlife Refuge. Villages within Unit 21D include Galena, Koyukuk, Nulato, and Kaltag.

Unit 24 contains approximately 26,060 mi^2, and it is divided into four sub-units: 24A, 24B, 24C, and 24D. It consists of the Koyukuk River drainage, from the headwaters in the Brooks Range and east of the Dalton Highway, downstream to Dubin Point. The Kanuti Controlled Use Area, part of the Dalton Highway Corridor Management Area, and part of the Koyukuk Controlled Use Area are included within Unit 24. Federal conservation units include parts of Koyukuk National Wildlife Refuge, parts of Gates of the Arctic National Park and Preserve, and Kanuti National Wildlife Refuge. Bureau of Land Management oversees some other federal lands in Unit 24. Villages within Unit 24 include Coldfoot, Wiseman, Bettles, Evansville, Anaktuvuk Pass, Alatna, Allakaket, Hughes and Huslia.

The Galena Area office with management responsibilities for Units 21B, 21C, 21D and 24 (totaling approximately 51,134 mi^2) is located in Galena. One Area Management Biologist is stationed in Galena, both the Assistant Area Management Biologist and Wildlife Technician, shared with the Regional Office, are located in Fairbanks. The only road access into the Galena Management Area is the Dalton Highway on the eastern side of Unit 24. Access to other parts of the area is limited to travel by boat on the rivers,

aircraft, and snowmachine during the winter. Moose, caribou, and bears are important food sources for local rural residents and provide hunting opportunity for numerous nonlocal hunters. Fur trapping is an important traditional and economic activity.

BLACK BEAR

STATUS: Black bears are numerous in most of Units 21B, 21C, 21D, and 24. No population estimation surveys have been conducted. There is no closed season for black bears in any of these units, and they are an important species taken for food by local residents. Household surveys indicate local harvest is approximately 30–45 bears annually in Units 21B, 21D, and 24. Nonlocal hunters take an unknown, but probably small number of black bears, usually incidental to other hunting activities.

MANAGEMENT/RESEARCH ACTIVITIES: There is no requirement for sealing black bears. Subsistence household surveys and anecdotal information are used to monitor population status.

ISSUES: There is no efficient and cost effective way to monitor black bear population dynamics in this area. During years of low berry abundance, reports of black bears frequenting village dumps and fish camps are common. Bears taken in "Defense of Life or Property" (DLP) are usually not reported. Black bears are significant predators of moose calves, and poor moose calf survival is the primary reason for moose population declines in the Galena Management Area.

GRIZZLY BEAR

STATUS: The grizzly bear populations in Units 21B, 21C, 21D and 24 are believed to have been slowly increasing during the past 10 years, based on field observations, nuisance reports, and hunter sightings. Historically, grizzly bears were an important source of food and hides for local residents. Despite liberal seasons, hunting pressure by both local and nonlocal hunters is low. Annual harvests from Units 21B, 21C, and 21D usually total less than 10 bears. Annual harvests from Unit 24 are usually less than 20 bears.

MANAGEMENT/RESEARCH ACTIVITIES: Management activities involve monitoring harvests and administering hunts. No surveys have been conducted. Units 21D and 24 have a subsistence registration permit hunt in which grizzly bears taken do not have to be sealed unless the hides are transported out of the units.

ISSUES: Management objectives for grizzly bears within Units 21B, 21C, 21D and 24 are to maintain these populations at levels that will sustain a minimum annual reported harvest of 25 and 35, respectively. Present harvest levels are well below that. Unreported harvest numbers are estimated to be approximately 10 bears per year in Units 21B, 21C, and 21D and 5 bears each year in Unit 24. The combined reported and unreported 5-year average harvest for Units 21B, 21C, 21D was estimated to be 18 bears. The combined

reported and unreported five-year average harvest for Unit 24 was estimated to be 21 bears.

Local residents report concerns about substantially increased numbers of grizzly bears. Residents of Huslia, who rely on black bears as a subsistence food source, report that grizzly bears are occupying traditional black bear dens. Some local residents believe that grizzly predation on black bears has substantially reduced the availability of black bears. More importantly, those residents believe black bear hunting has become a riskier endeavor due to the likelihood of encountering a grizzly bear at den sites. Grizzly bears are significant predators of moose calves, and poor moose calf survival may be the primary reason for moose population declines in this area.

CARIBOU

STATUS: Three caribou herds are resident in the Kokrines Hills (Units 21B and 21C) and Ray Mountains (Units 20F and 24), however, recent radiocollaring efforts may have demonstrated the existence of a fourth distinct herd (Hodzana Hills) as well. Each herd is associated with and named for a mountain peak within the range of mountains where they calve. The Ray Mountains herd numbers approximately 1,500–1,800, the Wolf Mountain herd is approximately 350–550, and the Galena Mountain herd is 80–100. Total annual harvest from the three herds seldom exceeds 20. The Western Arctic caribou herd is frequently found in the northern part of Unit 24, and occasionally travels into the western-most portions of Units 21D and 24. Large numbers of this herd have wintered in the Nulato Hills during the past several winters. In the winter of 2003–2004, up to 200,000 Western Arctic Herd caribou wintered in northern Unit 24.

MANAGEMENT/RESEARCH ACTIVITIES: Harvest monitoring is accomplished through the statewide general harvest ticket system. Information on caribou numbers and distribution of the three resident herds was obtained through cooperative studies involving ADF&G, US Fish and Wildlife Service (FWS), and Bureau of Land Management (BLM). Between 1992 and 2006, 136 caribou were radiocollared. Periodic radiotracking flights provide information on seasonal distribution. Annual composition flights using both fixed-wing and helicopter are conducted in October. Surveys of the Ray Mountains herd have included aerial photography from fixed-wing aircraft during post-calving aggregations. Typically however, surveys of the three herds are conducted opportunistically. ADF&G staff in Region 5 oversees management of the Western Arctic caribou herd.

ISSUES: Due to limited access, hunters take few caribou from the three resident herds. The management objectives for these caribou herds are to maintain harvest at a level that allows the herds to grow. However, harvest is largely self-limiting at this time because of difficult access. Also, it appears that predation is likely restricting herd growth; lichen ranges are lush, and the early calving date and large body size of both calves and adults indicate good nutrition. The Galena Mountain Herd has experienced a sharp decline in estimated herd size over the past three years from over 300 animals to less than 100 in recent surveys. The Department uses emergency orders to announce season openings in a

portion of the Unit 21D to allow winter harvest of the Western Arctic Caribou Herd east of the Koyukuk River, while providing adequate protection for the Galena Mountain and Wolf Mountain herds. Apparent shifts in migratory patterns of the Western Arctic Herd in northern Unit 24 has occasionally made it difficult for Anaktuvuk Pass residents to obtain caribou in early fall.

MOOSE

STATUS: Moose were reported in Units 21B and 21C historically, but are relatively new additions to Units 21D and 24. Local residents reported first observing moose tracks in those units during the 1930s. Colonization of moose in those areas was slow until federal predator control efforts in the 1950s allowed rapid expansion of local populations. Moose densities range from low to moderate over most of the area, with very high densities in localized areas of high quality habitat. Generally, trend count area surveys conducted in 1998–2003 showed declining calf:cow and bull:cow ratios. Aerial surveys demonstrated declines on the order of 16–25% from 1994 to 2001 in Unit 21D and 30–50% in Unit 24 from 1993 to 2004.

MANAGEMENT/RESEARCH ACTIVITIES: The Galena management staff conducts fall sex and age composition surveys, hunter contacts in the fall, and spring twinning surveys. Population estimation surveys were conducted in portions of Unit 21D during 1997, 2000, 2001, and 2004 and in Unit 24 during 1999, 2004 and 2005. Hunter check stations are operated during September near the mouth of the Nowitna River, and 15 miles upstream from the village of Koyukuk on the Koyukuk River. The area of the lower Koyukuk River drainage in Units 21D and 24 downstream from Huslia is within the Koyukuk Controlled Use Area (KCUA), and is managed as a drawing and registration hunt. Surrounding the KCUA are five other drawing/registration permit areas and in Unit 21B there are four drawing/registration permit areas. Harvest monitoring for the rest of the area is by harvest report cards and door-to-door subsistence surveys. Browse quality assessment in the Three Day Slough area in Unit 21D was conducted in 1997 by a researcher from the University of Alaska and suggested browse quality was very high compared to other similar willow species in the interior. The department collected browsing removal rate data in the Spring of 2006. The browse removal index for the plants sampled was 5.3% (95% CL: 4.3%–6.3%). The removal index extrapolated to the shrub counts and species composition in the Unit 24B samples was 8.8% (6.8%–10.8%). Both these removal indices are the lowest estimated to date in Interior Alaska and are statistically similar to removal rates in adjacent Unit 24C (5.5% and 8.5%, respectively).

ISSUES: Increasing hunting effort required to harvest a moose due to increasing cost of fuel and warm fall weather, harvest of cow moose, and predator-caused mortality are the three key issues for moose management in the Galena Management Area. The hunter check station on the lower Koyukuk has been operated since the early 1980's, but wasn't mandatory until 1990. Through 1999, there has been a steady increase in moose hunters and moose harvest in the area. Concern about increasing harvest was raised when declining bull:cow ratios in the Three Day Slough trend count areas were first observed during fall 1995. To address the concerns about increasing harvest, the Board of Game

established registration hunts for general and subsistence hunters in the lower Koyukuk River and temporarily on the Nowitna River. Further restrictions for the registration hunts were enacted for the 1997 season. Hunter numbers and harvest numbers in 1997 decreased temporarily in the lower Koyukuk River area, though hunter success remained high. Moose hunter and harvest numbers then continued to increase through 1999. A drawing permit hunt was implemented for the 2000 season within the KCUA to replace the general registration hunt (RM830). Implementation of the drawing hunts reversed the trend of increasing hunter numbers in the lower Koyukuk River drainage. In the Three Day Slough trend count area bull:cow ratios have begun to increase due to improving recruitment and restrictive harvest strategies. Calf:cow and yearling bull:cow ratios were improved in 2003 and 2004, but those parameters suggest barely stable population levels with mixed indicators in 2005. Recruitment ratios and population estimates during 1995–2001 confirmed that the decline in the moose population on the lower Koyukuk River drainage was due primarily to poor calf survival and yearling recruitment. As anticipated, with the more restrictive regulations in the KCUA, moose hunters were displaced to other drainages in the Galena Management Area, particularly the Bear Creek, Kateel, Huslia, Hogatza, and Nowitna river drainages, but regulatory measures adopted at the 2004 board meeting were very successful in managing those issues. Further details regarding moose hunting concerns as they relate to the KCUA, are discussed in the Controlled Use Areas section of this overview.

Bull:cow ratios in the heavily hunted Nowitna River portion of Unit 21B are low, with 19–25 bulls:100 cows and with approximately ⅓ of the bulls being yearlings. As a result of the low bull:cow ratio and increasing number of nonlocal resident hunters, success rates among local residents have fallen. This causes local hunters to either shift the area in which they hunt or more likely, the season they hunt. As more hunters shift to hunting the winter season, more cow moose are harvested, which could be accelerating the rate of the moose population decline.

Residents of communities in the area served by the Galena area office are generally pleased with the results of the registration and drawing permit hunts and the ability of the department to manage the distribution of hunters that is afforded by this system. However, frustration continues over the realization that management of hunters is having little impact on the decline of the moose population, which is attributable to the poor survival and recruitment of calves and yearlings, not hunting.

As more federal and private lands throughout the state are closed to nonlocal hunters, competition has intensified in the areas that remain open. Private and federal land ownership and dual management presents challenges to moose management in these units.

The Department sponsored the Koyukuk River Moose Hunters Working Group that was organized in 1999 to develop a detailed management plan to address moose hunting concerns. The Board of Game endorsed the group’s Moose Management Plan for the Koyukuk River at the winter 2001 statewide meeting.

SHEEP

STATUS: Much of the suitable sheep habitat in Unit 24 is located within Gates of the Arctic National Park and Preserve (GAAR) in Units 24A and 24B. Sheep numbers declined from the mid-1980s until the early 1990s. This decline was likely the result of severe winters from 1989 through 1993. Population estimation surveys conducted in summer 1996 in GAAR indicated that sheep numbers were lower than during the mid-1980s, but recruitment had begun to improve by 1993. Surveys in 1996 found good numbers of lambs and yearlings, which indicated the population was increasing. During 1998–2002, annual surveys were conducted in a portion of the 1996 surveys area by GAAR staff. Although there were annual fluctuations, the population was considered stable during 1996–2002. However, comparisons with surveys in the 1980s indicated that the sheep population was historically much higher in this area. From 2002 through 2007, ADF&G conducted sheep surveys in part of the upper Chandalar drainage east of the Dalton Highway in portions of Unit 24A and 25A. Total sheep numbers, lamb:ewe ratios and total legal rams have remained healthy throughout the survey years. During the 6 years of the survey the number of legal rams has ranged from 42 to 50. The lamb:ewe ratio has ranged from 18% to 43%, with 43% estimated in the 2007 survey. Total sheep numbers have ranged from 989 to 1,539 sheep with 1,099, 1,517, and 1,310 sheep counted during 2005, 2006, and 2007, respectively. In regulatory years 2003–2006, (RY03–RY06; RY begins 1 Jul and ends 30 Jun; e.g., RY03 = 1 Jul 2003 through 30 Jun 2004) an average of 67 hunters harvested at least 23 animals in all of Unit 24.

MANAGEMENT/RESEARCH ACTIVITIES: Sheep populations in Unit 24 are monitored by analyses of harvest reports, occasional fixed-wing aerial surveys, and anecdotal information. The National Park Service initiated a sheep study in GAAR in 1998 that included assessments of harvest, population status, and movements, mostly north of the Brooks Range. Aerial surveys have also been conducted by ADF&G from 2002 through 2007 in a portion of Unit 24 and Unit 25A.

ISSUES: Dall sheep in GAAR are managed somewhat differently than in most areas of Alaska. Federal law mandates subsistence use as the highest priority consumptive use within the preserve, and the exclusive consumptive use within the park. Sheep in Unit 24 outside GAAR are managed for diversified human use. Though subsistence hunting is generally localized, the present numbers of sheep in those areas are still sufficient to support current subsistence harvests. Other hunters are generally more widespread, but are restricted to areas outside the park. A majority of the hunters access Units 24A and 24B from the Dalton Highway.

WOLVES

STATUS: Wolf harvest in Unit 21B, 21C, and 21D is well below the level the population can support. The Units 21B, 21C, and 21D combined average harvest for RY00–RY04 was 95 (range = 68–122) wolves annually, while the allowable harvest was estimated to be at least 182–304 wolves annually. Wolf harvest in Unit 24 is also well below the level the population can support. The Unit 24 average harvest for RY00–RY04

was 102 (range = 64–131) wolves annually, while the allowable harvest was 137–230 wolves annually. The Unit 24 wolf population was stable during 2002–2004 and changed little since regulatory year 1996, with only some localized fluctuations. Wolf numbers were highest (9–11 wolves/1000 km^2) and probably increased in the southern portion of Unit 24 (south of Hughes). There were moderate and stable numbers (4–6 wolves/1000 km^2) in the central portion of Unit 24 (Bettles to Hughes), and variable densities (6–8 wolves/1000 km^2), with some declines, in northern Unit 24 (north of Bettles). Estimated wolf population densities were highest and stable to increasing in Unit 21D (9.8–14.2 wolves/1000 km^2), moderate and stable in 21B (4.4–6.7 wolves/1000 km^2), and moderate and stable in 21C (5–7 wolves/1000 km^2).

MANAGEMENT/RESEARCH ACTIVITIES: Wolf population trends were monitored through harvest reports and aerial surveys. In a portion of Unit 21D a wolf study was conducted in 1994 and reconnaissance surveys were conducted in 1999 and 2001 in Units 21D and 21B respectively. A population estimation survey was conducted in northern Unit 21D and southern Unit 24 in 2000. Use of snowmachines is the most common method of transportation for trappers and wolf hunters. With the ban on taking wolves and other furbearers the same day as airborne, wolf harvest has declined, particularly in Unit 24. Wolf snaring clinics were conducted in Allakaket, Huslia and Galena during January 2000 and in Hughes, Kaltag and Ruby during December 2001, and in Nulato and Galena in 2002 then again in Huslia and Allakaket in 2004.

ISSUES: Wolf population levels are likely increasing throughout the area. While wolf predation on moose is also likely increasing, demand for moose by nonlocal and local hunters is intensifying. Local residents of the Galena area recognize the predator–prey relationship between moose and wolves and make a conscious effort to increase wolf harvest when they perceive that moose are declining. There is some local demand for wolf pelts used as parka ruffs and gifts at funeral potlatches. But, with depressed fur prices, the incentive to trap wolves is not high enough to encourage trapping at levels needed to cause a positive response in moose recruitment.

FURBEARERS

STATUS: Furbearers have traditionally been an important resource in Units 21B, 21C, 21D, and 24, supplying food, clothing, and items of commerce. Although furbearer populations have always been sufficient to meet local demands, they are subject to cycles of abundance. Furbearers of economic importance found in these units are marten, beaver, lynx, wolves, wolverine, red fox, mink, river otters, and muskrats. Coyotes also occur, but are rare. Weasels and red squirrels are common, but usually not targeted by trappers. Harvest trends for some species are related to markets. Some species, especially beaver, are important food items and taken in high number irrespective of markets. Based on trapper reports, furbearer population levels for the past several years in Units 21B, 21C, 21D, and 24 appear to be stable or increasing.

MANAGEMENT/RESEARCH ACTIVITIES: Harvest is monitored through sealing records, fur export reports, fur acquisition reports, and trapper surveys. The local office

of the US Fish and Wildlife Service has studied the effects of forest fires on marten. Snap trapping for small mammals has provided indices of small mammal abundance in some areas.

ISSUES: Low fur prices for most species have directly affected trapper effort in the area. Furbearer populations are in good condition throughout the area. The current distribution and effort by trappers is light and compatible with the present population levels. The harvest of furbearers is below sustainable harvests, and is not expected to change significantly given the large area, number of trappers, remoteness, and fur prices.

SMALL GAME

STATUS: The overall status of small game populations in Units 21B, 21C, 21D and 24 are largely unknown. Anecdotal information suggests hare numbers are increasing in some areas after a decline during 2001–2005. Spruce and ruffed (locally called willow) grouse are common but have declined since RY00.

MANAGEMENT/RESEARCH ACTIVITIES: None

ISSUES: None

CONTROLLED USE AREAS

STATUS: There are currently two moose hunting controlled use areas (CUAs) in the Galena Management Area: the Koyukuk CUA and the Kanuti CUA.

KOYUKUK CONTROLLED USE AREA: The Koyukuk CUA was established in 1979 to reduce participation of nonlocal hunters and hunter conflicts by prohibiting the use of aircraft. However, by 1986 the number of hunters arriving by boat from outside the unit equaled the number of hunters who previously accessed the area by aircraft. The Koyukuk CUA occupies 4,791 mi^2 in northern Unit 21D and southern Unit 24 and overlaps with a large portion of the Koyukuk National Wildlife Refuge. A moose hunter check station has been operating on the Koyukuk River since 1983. It enables accurate determination of the number of hunters using the river to access the Koyukuk CUA within Unit 21D and accurate collection of biological data from harvested animals. It is also used to educate local residents on licensing and reporting requirements, to inform nonlocal hunters about regulations specific to the area and the locations of private property along the river, and as a means of monitoring compliance with regulations. The CUA, the mandatory check station, and the registration and drawing hunts are all elements for managing this high profile hunting area and, in combination, have succeeded in meeting the intended objectives.

There has been little change in the boundaries or basic elements of the Koyukuk CUA (i.e. no fly-in moose hunting) since its creation. However, there have been a variety of changes to the type of hunt that the Department manages in the CUA, as discussed in the moose section of this overview. Currently, an unlimited number of resident hunters can

hunt in the CUA on a subsistence registration hunt. Conditions include keeping all the meat on the bone, keeping the head, and sawing off the upper half of one antler and turning it in to ADF&G. Alternatively, there are a limited number of permits available for a drawing hunt. Conditions include keeping the meat on the bone of the hindquarters, forequarters, and ribs and being able to retain the entire antler. For the drawing hunt, 258 permits were allowed in RY03, while only 50 permits were allowed each year during RY04–RY07. Implementation of the drawing permit hunt was a result of the Koyukuk River Moose Hunters Working Group's recommendations and it has effectively reduced non-subsistence hunters. However, there is concern that demand for the unlimited number of subsistence registration permits will eventually increase above sustainable harvest levels. As previously reported, the regulatory changes are having little effect on reversing the declining trend of the moose population, which is the result of poor calf survival and low yearling recruitment. At this time in the Galena area, the poor calf survival and low yearling recruitment levels being observed are likely the result of predation.

KANUTI CONTROLLED USE AREA: The Kanuti CUA was also established in 1979 to reduce participation of nonlocal hunters and hunter conflicts by prohibiting the use of aircraft. The Kanuti CUA occupies 2,183 mi^2 of Unit 24B; the boundaries have not been changed since its' creation. The Kanuti CUA overlaps much of the Kanuti National Wildlife Refuge. Federal Land within the Kanuti CUA was closed to moose hunting except for federally qualified users in 1992, so that interpretation of the effectiveness of the CUA regulation is unclear. Although a few hunters who hunted the state navigable river corridor accessed the CUA from the Dalton Highway in the past, most use within the Kanuti CUA is by residents of the Unit 24 communities of Alatna, Allakaket, Bettles, Hughes, and Evansville. Overall, the federal closure has a greater impact on current hunting patterns in the Kanuti CUA, except for the lower Alatna River area, that is mostly State land.

MANAGEMENT/RESEARCH ACTIVITIES: A check station has been operated on the Koyukuk River within the Koyukuk CUA for 23 consecutive years. The Koyukuk River moose management planning effort was implemented in 1999 to deal with issues related to the two CUA's. The Koyukuk CUA was the main focus of attention because of the large number of hunters using the lower portion of the Koyukuk River.

ISSUES: In May 1999 the Division of Wildlife Conservation held the first of eight meetings of the Koyukuk River Moose Hunters Working Group. This fish and game advisory committee based planning group developed a detailed moose management plan that defined issues of concern and actions necessary to address those concerns, including several regulatory and legislative proposals. Regulation proposals and a 5-year moose management plan were presented to the Board of Game at their March, 2000 meeting. A final draft of the Koyukuk River Moose Management Plan was submitted to and endorsed by the Board at the January 2001 statewide meeting. The Plan continues to be the primary basis for management activities for the Koyukuk River drainage.

GAME MANAGEMENT UNITS 12 AND 20E

TOK AREA OFFICE

Area Biologist: Jeff Gross, Tok
Seasonal Wildlife Technician: Al Keech
Seasonal Administrative Clerk: Tess Faulise

DESCRIPTION

GAME MANAGEMENT UNIT 12

Game Management Unit 12 is located along the Yukon–Canada border in eastern Interior Alaska. It measures approximately 10,000 mi^2, of which 9,000 mi^2 is wildlife habitat.

LAND OWNERSHIP: Over 80% of the land is under National Park Service (Wrangell–St. Elias National Park and Preserve) and U.S. Fish and Wildlife Service (Tetlin National Wildlife Refuge) management or is privately owned by Native corporations or villages. The Tok Management Area (TMA) is the only state special management area in Unit 12 and there are no controlled use areas. Approximately 2,000 people live in 6 communities and villages within the unit.

ACCESS: The Glenn and Alaska Highways, Nabesna Road, and the Tanana, Tok, and Nabesna Rivers are primary access routes into Unit 12. There are few trails suitable for ORV use. Due to the combination of limited access and land ownership policies, hunting pressure is low in most of the unit.

HUMAN USE: The Dall sheep population in Unit 12 is the most intensively hunted in the state. Guided nonresident Dall sheep hunting is common, but most moose hunting is by local residents (>70% of the hunters) who take >40% of the harvest. Trapping, primarily for marten and lynx is economically important.

ADVISORY COMMITTEES: Upper Tanana/Fortymile and Nabesna Advisory Committees.

SPECIAL MANAGEMENT AREAS:

TOK MANAGEMENT AREA: The TMA was created in 1974 with the goal of providing sheep hunters the opportunity to hunt large-horned Dall sheep under uncrowded conditions. It is one of the top three areas in Alaska in terms of Dall sheep horn growth, and hunt objectives were designed to enhance horn growth potential. The TMA is the only sheep hunting area in Alaska specifically established for trophy sheep management.

It is very popular among sheep hunters and is one of the most sought after sheep permits in the state.

GAME MANAGEMENT UNIT 20E

Unit 20E is located north of Unit 12 along the Yukon, Canada border. It encompasses about 11,000 mi^2 of diverse wildlife habitat.

LAND OWNERSHIP: Most of the land in Unit 20E is in state (about 50%) or Native corporation (30%) ownership. State special management areas include the Ladue River and Glacier Mountain Controlled Use Areas. The remaining land is under federal management either within the Yukon–Charley Rivers National Preserve (National Park Service) or the Fortymile National Wild and Scenic River System (Bureau of Land Management.) About 220 people reside in the 3 communities in Unit 20E.

ACCESS: The Taylor Highway, several extensive ORV trails, and the Yukon, Charley, and Fortymile Rivers are the primary access routes in Unit 20E. Portions of central Unit 20E can be accessed by float plane. Most of the western, eastern, and northern portions of the unit are inaccessible, except from a small number of landing areas.

HUMAN USE: Caribou in the Fortymile herd are the most sought after wildlife species in Unit 20E. Moose hunting participation and harvest increased significantly between 2001 and 2003, exceeding historic records, but has since declined to levels observed during the 1990s. Trapping, primarily for marten and lynx is economically important. Brown bear hunting regulations have been liberal since 1981 in an attempt to reduce brown bear predation on moose and caribou calves.

ADVISORY COMMITTEES: Eagle and the Upper Tanana/Fortymile Advisory Committees.

CONTROLLED USE AREAS:

Glacier Mountain Controlled Use Area (CUA). The Glacier Mountain CUA was formed in 1971 to afford greater protection for the Dall sheep population on Glacier Mountain. Originally, access was limited to walk-in hunters only. In 1981, the restriction on use of pack animals was eliminated. Access restrictions apply between August 5 and September 20. The area encompasses about 600 mi^2. This CUA continues to provide needed protection for the Dall sheep population as originally intended and more recently, has provided opportunity for walk-in hunters to hunt Fortymile caribou for a large portion of the fall season.

Ladue River CUA. The Ladue River CUA was formed in 1994 to afford greater protection to the moose population. Motorized access is limited to designated trails and airstrips. Access restrictions apply during August 20–September 30. The area encompasses about 1,375 mi^2, and has achieved its purpose.

BLACK BEAR

STATUS: Black bears are present in all suitable habitats in Units 12 and 20E. Based on limited radiotelemetry data collected in Unit 12 and other units with comparable habitats, the estimated black bear density is 1 bear/4–7 mi^2 of black bear habitat. The estimated number of black bears in Units 12 and 20E combined is 2,000–2,500. The black bear population is productive and the reproductive interval is similar to other Interior Alaska black bear populations. Historically, black bear harvest has been low in both units. The primary users in Unit 12 are local residents (>70% of the harvest) and primary users in Unit 20E are Alaska residents (>50% of the harvest). Local residents primarily take black bears during the spring for meat.

MANAGEMENT/RESEARCH ACTIVITIES: Harvest data are obtained through mandatory sealing of hunter-harvested bears and bears killed in defense of life or property. The impact of hunting black bears over bait is monitored through mandatory registration of all bait stations in combination with the sealing requirements.

ISSUES: There are no biological or social issues at this time. Units 12 and 20E black bear populations exist at densities considered natural for Interior Alaska black bear populations and harvest and habitat are not limiting.

BROWN BEARS

STATUS: Units 12 and 20E grizzly bear populations are estimated to be stable at 350–425 (46.6–56.7 bears of all ages/1000 mi^2) and 320–394 bears (29.9–36.9 bears of all ages/1000 mi^2), respectively. Population estimates are based on DNA-based mark-recapture surveys and extrapolations from point estimate surveys conducted in Unit 20E and other units with similar type habitats, radiotelemetry data, and harvest statistics. In an attempt to reduce bear predation on moose calves, hunting regulations have been liberal since 1981 to allow hunters to take more brown bears. Regulations and management strategies used to increase bear harvest/kills include: 1) a public awareness campaign; 2) increased bag limit to one bear per regulatory year (1 July through 30 June) in Unit 12 and since regulatory year 2004–2005 (RY04), two bears per regulatory year in Unit 20E; 3) lengthened seasons; 4) waived resident tag fee in Unit 20E during RY84–RY90 and RY02–RY06; and 5) a Brown Bear Predator Control Program in southern Unit 20E that includes baiting as an additional tool for bear control permittees. In Unit 12, harvest declined in 1989 and remained stable (avg. = 17 bears annually during RY89–RY06). During 1981–2006, brown bear take in Unit 20E remained low (avg. = 15 bears annually), despite liberal harvest regulations and predator control efforts, and the population has not been reduced to levels adequate to increase moose calf survival. The brown bear harvest/kills in Unit 20E is currently below maximum sustainable levels. Brown bears are a significant factor in moose calf mortality in Unit 12 and are an important limiting factor on the Unit 20E moose population.

MANAGEMENT ACTIVITIES: Management activities include implementing the Unit 20E Brown Bear Predator Control Program, monitoring brown bears killed, and evaluating data to track changes in bear numbers. A total of 6 bears were harvested under this Control Program during RY04–RY06, and were sealed in the Tok ADF&G office. In 2006, a brown bear population survey was conducted in a 2,005-mi^2 area in southern Unit 20E. Analysis of brown bear and moose population data in Unit 20E was conducted to evaluate the effects of bear densities on moose calf survival.

ISSUES: The Board of Game designated the Fortymile caribou herd and the moose populations in Units 12 and 20E as important for high levels of human consumptive use under the Intensive Management Law (AS 16.05.255(e)–(g). This designation means that the board must consider intensive management if regulatory action to significantly reduce harvest becomes necessary because the population is depleted or has reduced productivity. Past research has shown that brown bear predation is the primary cause of moose calf mortality in Unit 20E and would have to be reduced before the moose population could meet its population goals. Liberal brown bear harvest regulations since 1981 and the recent Brown Bear Control Program in Unit 20E have been ineffective at reducing the brown bear population enough to allow for increased moose calf survival.

CARIBOU

FORTYMILE CARIBOU HERD (FCH)

STATUS: Historically, the Fortymile herd was one of the largest herds in Alaska. For over 70 years, it ranged between the White Mountains north of Fairbanks to central Yukon, Canada. Like most other herds in Alaska, it underwent changes in abundance and distribution throughout this period but maintained its use of Yukon, Canada and habitats near the Steese Highway. Due to a combination of factors, the Fortymile herd underwent a major decline in herd size during 1963–1973 to about 6,000 caribou. Following the decline, the herd stopped migrating across the Steese Highway and rarely traveled into Yukon, using less than 25% of its traditional range. Primarily due to favorable weather conditions, the Fortymile herd increased during the late 1970s and 1980s, but much slower than adjacent herds despite similar weather patterns. Range use did not increase during this period. Between 1990 and 1995, herd growth stabilized due to adverse weather conditions and predation, primarily by wolves. The herd increased by 119% between 1995 and 2003, primarily due to favorable environmental conditions and to wolf trapping and nonlethal predation control efforts. During 2000–2007, the herd increased its range, using historic range west of the Steese Highway during the fall and historic range in Yukon, Canada during winter. During 2004 and 2005, the herd declined slightly due to increased wolf predation and adverse weather conditions during both years. In 2006, good calf survival rates to autumn (34 calves:100 cows in early October 2006) and mild winter conditions allowed the herd to increase. Following a June photocensus in 2007, the herd is estimated at approximately 38,400 caribou.

MANAGEMENT/RESEARCH ACTIVITIES: During 1996–2000, the herd was managed under the Fortymile Caribou Herd Management Plan (Management Plan) that

was developed through a public planning process. The Management Plan included reduced harvest, a combination of nonlethal wolf control conducted by ADF&G and public wolf trapping, and habitat management. During 2001–2006, harvest was guided by a Harvest Management Plan (Harvest Plan), developed by a coalition of 5 Fish and Game Advisory Committees (Central, Delta Junction, Eagle, Fairbanks and Upper Tanana/Fortymile) and endorsed by the board in spring 2000. The primary goal of this Harvest Plan was to manage for herd growth and secondarily to provide for increased harvest. During 2005–2006, these advisory committees developed a revised Harvest Management Plan that was endorsed by the board in March, 2006, to guide harvest from fall 2006 through winter 2012–2013. In spring 2006, the Board of Game added the Fortymile Caribou Herd to the Upper Yukon–Tanana Predator Control Program (UYTPCP).

ISSUES: Since 1995, Fortymile caribou management has been successful because agencies and the public have worked together to develop and implement management and harvests plans to encourage herd growth. Herd growth, predator control and caribou harvest will all be important issues for years to come.

CHISANA CARIBOU HERD

STATUS: The Chisana herd is a small, mostly nonmigratory caribou herd. Its primary range encompasses the Nutzotin and northern Wrangell Mountains between the Nabesna (Alaska) and Generc Rivers (Yukon, Canada). During the 1980s, the Chisana herd grew from an estimated 1,000 to about 1,900 caribou in 1988. The herd was estimated to have declined from 1,800 in 1989 to 315 by 2002. However in fall 2003, the U.S. Geological Survey (USGS) completed a more intensive census than had been done previously, which resulted in 603 caribou observed and a population estimate of 720 caribou. In addition, the adult bull:cow ratio was estimated to be 37:100 in 2003 versus 25:100 in 2002, indicating that previous surveys may have underestimated these population parameters. The USGS census was repeated in 2005 and 2007. The 2005 census yielded a population estimate of 656–733. In the 2007 census, 719 caribou were observed, with 13 calves:100 cows and 50 bulls:100 cows.

Habitat and harvest do not appear to be limiting herd growth. Winter range conditions, based on percent lichen in their diet, are adequate in most of the herd's range. Pregnancy rates (>80% per year) and median calving date indicate nutritional status is adequate. During 1950–1993, harvest was limited to bulls, and the annual harvest rate (<2.5%) did not limit the herd's ability to increase. In 1994 harvest of Chisana caribou in Alaska was stopped. Herd management will be revisited in 2008 to determine if a limited hunting season for bulls is justified.

MANAGEMENT ACTIVITIES: Since 2003, the USGS has continued to lead a cooperative research effort with the U.S. Park Service, ADF&G, and the Yukon Department of Renewable Resources, to evaluate various population parameters to determine why this herd declined by more than 60% since the late 1980s. In 2003–2006, 20–50 adult caribou cows were captured in Yukon by the Yukon Department of

Renewable Resources and placed in a pen during late winter through early June to provide protection from predators during and immediately following calving. ADF&G has maintained a cooperative technical role in these efforts since 2004.

ISSUES: The main issue is to improve accuracy of the population estimates and develop methods to maintain accurate counts. In addition, the herd management will be reevaluated in 2008 to determine if a limited harvest of bulls is justified.

MOOSE

UNIT 12

STATUS: The moose population in Unit 12 increased slowly from 1982 to 1989, remained relatively stable during 1989–1993, and due primarily to increased calf survival, grew slightly between 1994 and 1997. The most substantial increase occurred in northwestern Unit 12 within the area affected by the Tok wildfire (155 mi^2). This area supported 0.19 moose/mi^2 in 1989, 0.6 moose/mi^2 in 1994, and 1.0 moose/mi^2 during 1997–2007.

Overall moose densities currently range from 0.03 moose/mi^2 in the Northway Flats to >2.0 moose/mi^2 along the north side of the Nutzotin Mountains. Between 1997 and 2000, calf and yearling bull recruitment declined and the population remained stable or declined slightly. The most recent (2003) unitwide population estimate is 2,900–5,100 moose (0.6–0.7 moose/mi^2 of suitable moose habitat throughout Unit 12). Since 2003 surveys were conducted only in northwestern Unit 12 and unitwide estimates were not developed. Surveys in northwestern Unit 12 were conducted in 2004–2006 to monitor the moose population within the Tok River drainage due to concerns about declining bull:cow ratios, and to monitor moose populations north of the Alaska highway within the UYTPCA. No surveys were conducted in 2007 due to poor snow conditions and budget constraints.

Past research indicated that predation was the primary factor maintaining the Unit 12 moose population at low density. However, land ownership patterns preclude the use of predator control in most of the unit. Moose numbers are expected to remain stable at low densities (0.3–1.0 moose/mi^2) in most of the unit.

Hunter participation and harvest in Unit 12 remained stable during 2002–2006, with an average of 546 hunters (range = 520–574) harvesting an average of 648 (range = 117–137) moose annually.

Most of Unit 12 is difficult to access and harvest has little effect on the bull population. The unitwide bull:cow ratio exceeds the population objective of 40 bulls:100 cows. Most moose are harvested along the Tok, Little Tok and Tanana Rivers in western Unit 12 where access is easiest. In these areas, bull:cow ratios have declined to 20–40 bulls:100 cows. In response, spike/fork/50-inch regulations were enacted in the Little Tok River drainage in 1993 and a portion of the main stem of the Tok River drainage in 2006.

Bull:cow ratios have improved in these areas and there is continued hunter support for these restrictions. There is little local interest in antler restrictions as a form of harvest management in other areas of Unit 12.

MANAGEMENT ACTIVITIES: In cooperation with Tetlin National Wildlife Refuge, ADF&G conducted a survey in 2003 to estimate population size, and sex and age composition of moose in more than 90% of the moose habitat in Unit 12. In 2005 and 2006, ADF&G conducted moose surveys in northern and western Unit 12, primarily to monitor bull:cow ratios within the Upper Tok River drainage and the population status north of the Alaska Highway, within the portion of Unit 12 included in the UYTPCP.

Signs are posted along area roads and primary trails to inform hunters about hunting regulations and boundaries. Greater enforcement effort occurs in the Little Tok River area to ensure hunters comply with antler restrictions.

Use and availability of browse is periodically monitored within important wintering areas along the Tok and Tanana Rivers. Habitat enhancement has been conducted in Unit 12 since 1982. Over 1800 acres of decadent willows have been intentionally disturbed to stimulate crown sprouting of new leaders. This has produced more than 2 million pounds of additional browse each year for wintering moose. In eastern Unit 12 the US Fish and Wildlife Service periodically conducts prescribed fires to benefit moose on the Tetlin National Wildlife Refuge. In 2003, there was a 40,000-acre wildfire in the Black Hills on the Tetlin Refuge. In 1998, we mechanically crushed 275 acres of decadent willow and aspen within the Tok River Valley. In cooperation with State Forestry, a proposed 1000-acre timber sale in the Tok River Valley has been developed to enhance moose habitat. Cut areas were selected based on numbers of marketable trees, historic winter moose use, and potential to regenerate quality moose browse species. This project is currently being reviewed for implementation in 2008. In addition, ADF&G is assisting in designing and implementing site-specific scarification techniques that will promote willow and aspen regeneration following logging. Cut areas will be 80–200 acres in size.

In 2004, the UYTPCP was implemented in an effort to reduce mortality in the southern Unit 20E moose population by providing conditions to allow the Unit 20E moose population to increase to meet Intensive Management Objectives. A small portion of northwest Unit 12 was included in the Wolf Control portion of the program in 2004–2006. In May 2006, the board modified the UYTPCP to include all portions of Unit 12 north of the Alaska Highway in the Wolf Control portion of the program.

ISSUES: The primary management challenge for Unit 12 moose is managing a predator-limited, low density moose population that is subject to high harvest along the road and river systems.

The Board of Game has identified the moose population within Unit 12 as important for high levels of human consumptive use under the Intensive Management Law (AS 16.05.255(e)–(g). This designation means that the board must consider intensive management if regulatory action to significantly reduce harvest becomes necessary

because the population is depleted or has reduced productivity. Currently, the moose population estimate in Unit 12 is at the lower end of the board's population objective. However, in areas near villages and along the road system, population densities remain low, while remote portions of the unit have good moose densities relative to available habitat.

Research conducted in Unit 12 in the mid-1980s identified wolves as the primary predator on moose. Wolf control in most of the unit is not an option because of land ownership. Prescribed burns are the best option for intensively managing for moose in areas where predator control is not possible, but in north and northwestern Unit 12 the moose population could be intensively managed with a combination of predator control and habitat enhancement.

Taking of moose for funerary or mortuary potlatches is difficult to quantify. Most potlatch harvest occurs near local villages and along the road system. Harvest reporting has improved in recent years, but is not always consistent. Therefore it remains difficult to ascertain the effects of this harvest. We are currently working with local villages to improve reporting.

UNIT 20E

STATUS: Between 1981 and 1988, the moose population in Unit 20E increased 5–9% annually, reaching a density of 0.3–0.5 moose/mi^2. Between 1988 and 2000, the population stabilized at an estimated 0.5–0.6 moose/mi^2. Between 2001 and 2004, the moose population experienced the lowest calf and yearling recruitment in 25–30 years. In 2004, the estimated density of moose in Unit 20E was 0.4–0.5 moose/mi^2.

Research has shown that predation by wolves and grizzly bears is the primary factor maintaining the Unit 20E moose population at low densities (0.2–1.0 moose/mi^2) and that hunting and habitat quality are minor limiting factors. Moose densities vary, ranging from approximately 1.0 moose/mi^2 in southcentral and southwestern Unit 20E, associated with several large 30-year-old burns (500,000 acres), to 0.2 moose/mi^2 in northern Unit 20E along the Yukon River. During 2005–2007, bull:cow ratios observed during fall surveys were above management objectives (≥ 40 bulls:100 cows).

The hunter participation rate and harvest increased in Unit 20E between 1993 and 2002 and reached a peak of 944 hunters who harvested 170 moose in 2002. Hunter numbers and harvest declined during 2003–2006, and 686 hunters harvested 130 moose in 2006. Preliminary harvest data from fall 2007 indicates similar numbers of hunters (652) and total moose harvested (133).

MANAGEMENT ACTIVITIES: Population trend and composition are monitored annually. Survey areas are primarily in southern Unit 20E, but occasional surveys are conducted by the National Park Service in the Yukon–Charley Rivers National Preserve in northern Unit 20E. Sampling of browse availability and use is conducted within important wintering areas and prescribed burn sites every 2–3 years.

Since 2001, moose hunting in most of Unit 20E has been under a registration permit that requires the hunter to select either moose or caribou. The season in most of the unit is separated into a 5-day hunt in August and a 10-day hunt in September.

During 2004 and 2005, over a million acres of moose habitat burned in Unit 20E. This burn varied widely in severity and left significant unburned inclusions. It will provide exceptional improvements in moose habitat for many years.

In 2004, the UYTPCP was implemented in an effort to reduce moose mortality from predation in southern Unit 20E and thereby stimulate an increase toward meeting Intensive Management population objectives. In May 2006, the Board of Game expanded the control program to include all of Unit 20E, although the National Park Service does not allow predator control within the Yukon–Charley Rivers National Preserve.

ISSUES: The greatest challenge in Unit 20E is to manage for an increase in moose numbers in this predator-limited population that is also subject to high harvest along the road and river systems.

Currently, much of Unit 20E is inaccessible due to low numbers of trails and few suitable aircraft landing sites. Areas of concern are mostly in the vicinity of the Taylor Highway. Increased pioneering of trails into new areas, primarily by hunters using ATVs and ORVs, is occurring and is expected to increase in the future. This increased hunter access is likely to cause the bull component of the population to decline below 40 bulls:100 cows in portions of the unit; however, the unitwide bull:cow ratio is expected to remain above the minimum management objective of 40 bulls:100 cows. Requiring hunters to choose either to hunt moose or caribou and splitting the season appears to have stabilized harvest in most areas, but this may not be sufficient as hunter numbers and ORV use increases in key areas.

The Board of Game has identified the moose population within Unit 20E as important for high levels of human consumptive use under the Intensive Management Law (AS 16.05.255(e)–(g). This designation means that the board must consider intensive management if regulatory action to significantly reduce harvest becomes necessary because the population is depleted or has reduced productivity. Based on modeling data and on current human use of the Unit 20E moose population, some harvest restrictions may be necessary to protect the bull component of the population, especially in the more accessible areas of the unit.

The Unit 20E UYTPCP began in January, 2005. Moose population data is currently being collected and will be evaluated prior to the March 2008 Board of Game meeting.

DALL SHEEP

STATUS: There are three distinct sheep areas in Units 12 and 20E: 1) northern Wrangell, Mentasta, and Nutzotin Mountains (WMN); 2) Tok Management Area (TMA); and 3) Tanana Hills (TH).

The sheep population in WMN traditionally exists at relatively high densities in typically rugged, glaciated habitats. This area produces rams with horns below average size, compared with other sheep populations in Alaska. The consumptive use management goal in this area is to provide the greatest opportunity to participate in sheep hunting. This population grew throughout the 1980s, declined during the early 1990s, and appeared to be stable or growing slowly during 1994–1998. Unfavorable winter weather occurred in 1999 and 2000, and lamb recruitment was low. The number of legal rams increased during 2001–2005 due to favorable weather conditions in the mid 1990s, but declined in 2006 and 2007. This area receives some of the highest harvest in the state; 131–152 rams per year during 2002–2006.

Sheep in the TMA exist at low to moderate densities but produce large-horned rams. This population grew during the 1980s until 1992. Due to adverse weather, the sheep population declined during 1992 and 1993. Weather conditions were mild to average from 1994 to 1998, and based on lamb and yearling survival data, the population increased slowly. Winters 1999–2000 and 2000–2001 had greater than average snow depths and lamb survival was low. During 2001–2004, mild winters and moderate snow depth allowed good lamb production and recruitment. The number of legal rams increased between 2001 and 2004 due to favorable weather conditions in the mid 1990s and good survival of rams to 7–8 years of age. During winter 2004–2005, portions of the TMA experienced deep snow with layers of ice from early winter rain showers, resulting in die-offs in the eastern portions. Mild weather during winters 2005–2006 and 2006–2007 allowed good lamb recruitment. Currently, the TMA supports an adequate number of legal rams to meet management objectives and ADF&G plans to maintain the number of permits at 101.

The TMA is designated for trophy sheep management. The primary consumptive use goal is to provide the opportunity to pursue large-horned trophy rams under uncrowded hunting conditions. This goal is attained through a limited number of drawing permits. Maintaining low hunter density has increased the number of large trophy rams and created high quality hunting experiences. Harvest objectives were met in the TMA during 2003–2006. Harvest increased and exceeded the harvest objective three times in the mid- to late-1990s, but has remained within the harvest objectives since the number of permits was reduced to 100 in 2002. The TMA permit is the most sought after sheep permit in the state, with over 3,300 applicants in 2006.

The TH sheep population occurs at low density and is disjunct due to the physical geography of the Tanana Hills, which is atypical sheep habitat. The Tanana Hills were not glaciated during the most recent glacial advance and underwent little uplift. Overall elevations are low, and the range has a rolling rather than rugged physiography. The sheep population has remained at low densities, but maintains enough legal rams to provide adequate opportunity for the hunters who access the area from a few small

landing strips. The management objective is for uncrowded hunting conditions. Most of this area is very difficult to access, and due to sheep distribution, is very difficult to hunt. The portion of the area accessible from the Taylor Highway was designated a controlled use area, and the most accessible fly-in area (Mount Harper) is managed by drawing permit. Annual harvest has ranged from 3 to 10 full-curl rams annually during the 2002–2006 seasons, and the management objective is being met.

MANAGEMENT ACTIVITIES: Status of the sheep population and quality of hunting experience in Units 12 and 20E are evaluated by analyses of harvest reports, periodic aerial and mineral lick surveys and interviews with area guides and hunters. During the 2004–2007 seasons, 53–66 rams were sealed annually in the Tok ADF&G office.

ISSUES: There are currently no biological issues with the sheep populations in Units 12 and 20E.

WOLVES

STATUS: The wolf population in Unit 20E numbered at least 227–238 wolves in 1996. The population remained relatively stable between fall 1997 and fall 1998, but declined slightly by fall 1999 due to a combination of nonlethal wolf control and public trapping. The wolf population increased slightly during 2000, except in the western and central portion of the unit where effects of nonlethal wolf control continued. By 2004, most of the effects of the nonlethal control program had subsided as the sterilized pairs died and their territories were overtaken by unsterilized wolves. Recovery of sterilized packs, increased numbers of Fortymile caribou throughout most of Unit 20E, and increased numbers of wintering Nelchina caribou in southern Unit 20E resulted in an overall increase in the number of wolves in Unit 20E during 2001–2004. The Unit 20E wolf population was estimated to be 250–310 wolves in August 2004.

Models indicate the current estimated population in Unit 20E is below 2004 levels, primarily due to ongoing lethal wolf control and an increase in efforts by several trappers in southcentral Unit 20E in 2005 and 2006.

Historically, the Unit 20E wolf population has been lightly harvested. The fur market primarily affects wolf trapping intensity. Most wolf harvest in northwest Unit 12 and southern Unit 20E is associated with the predator control program and efforts of 3–4 area trappers, while traditional trapping efforts are the primary source of human harvest in the remainder of these units. Demand for wolf pelts has been moderate to low during the past few years, resulting in light trapper efforts for wolves. Most wolves trapped in these units were taken incidental to other furbearer species and harvest by trappers remains low.

Unit 12 wolf numbers increased by an estimated 27% between 1988 and 1992 in response to increased food base as the Nelchina caribou herd wintered within the unit. Autumn pack size and number of packs increased, indicating improved recruitment and possibly, adult survival. The population appeared to decline in 1993 following an estimated 36% harvest and remained stable until 1995 due to moderate harvest rates. Area trappers

selected for wolves during this period because wolf pelt prices were high. Fur prices declined during 1995–2006 and wolf trapping declined. During this period, wolf numbers increased by an estimated 33% to 245–260 wolves in fall 2002. No further estimate has been developed, but with light harvest and a similar food base as in 2002, the current population is likely close to 2002 levels except within a the portion of northern Unit 12 included in the UYTPCP. The current wolf population is estimated at 366–398 wolves within the 18,750-mi^2 UYTPCP control area in Unit 20E and northern Unit 12.

MANAGEMENT/RESEARCH ACTIVITIES: Population trends are monitored by aerial surveys and hunter and trapper reports in both Units 12 and 20E, and by predator control permittees in the UYTPCP. Harvest is monitored from mandatory harvest reports in both units and by closely monitoring wolves killed in the predator control program.

ISSUES: Lethal wolf control within the UYTPCP area in Unit 20E and a portion of Unit 12 continues to be monitored and evaluation is ongoing. A report on the status of the wolf control program will be provided to the board at the March 2008 meeting.

FURBEARERS

STATUS: Marten and lynx are the most economically important furbearers in Units 12 and 20E. During population highs, muskrats are also economically and socially important in Unit 12. Little intentional trapping effort is expended on coyotes, red foxes, mink, otters, beaver, ermine, or wolverines (except in a portion of southern Unit 12) because of low pelt prices or low abundance. Furbearer populations are primarily monitored using trapper reports. The snowshoe hare and lynx populations appear to be approaching a high in their population cycles. During early winter 2007, hare numbers were reported to be high, and numerous sightings of lynx kitten tracks were reported by area trappers. Marten numbers increased between 2002 and 2005, but declined in 2006 in both Units 12 and 20E. Wolverine numbers appear to be increasing, possibly in response to large numbers of caribou wintering in Units 12 & 20E.

MANAGEMENT ACTIVITIES: Wolverine, lynx, and otter harvest are monitored through mandatory harvest reporting. A trapper questionnaire is sent to area trappers each year to learn what they saw on their traplines. This information, along with trapper interviews, field observations and sealing records is used to develop management direction for furbearers in Units 12 and 20E.

ISSUES: No biological concerns currently exist for furbearer populations in Units 12 and 20E.

SMALL GAME

STATUS: The status of the small game populations in Units 12 and 20E are not rigorously monitored. Most information is collected from incidental sightings made during other surveys and from discussions with hunters, trappers, hikers, and other outdoors enthusiasts. Overall, it appears that the 3 grouse species and ptarmigan

increased during 2003–2006, but declined during 2007. Hares have increased during all years between 2003 and 2007.

MANAGEMENT ACTIVITIES: We continue to survey area hunters, trappers, hikers and other outdoors enthusiasts concerning numbers and locations of grouse, ptarmigan and hares.

ISSUES: No biological concerns currently exist for small game populations in Units 12 and 20E.

GAME MANAGEMENT UNIT 20D

DELTA JUNCTION AREA OFFICE

Area Biologist: Steve DuBois
Seasonal Wildlife Technician IV (Manager, Delta Junction Bison Range): Ron Riesgaard
Seasonal Fish and Wildlife Technician III (Public Information): Dave Davenport

DESCRIPTION

Game Management Unit 20D is located in the mid-Tanana River Valley of Interior Alaska, approximately 100 miles east of Fairbanks, and is approximately 5,633 mi^2. Most land is in state or private ownership, with some federal land in the Ft. Greely Military Reservation and Ft. Wainwright Donnelly Training Area.

The Tanana River bisects Unit 20D into southern and northern portions (Fig. 1). Both the Richardson and Alaska Highways pass through southern Unit 20D, along with numerous other roads and trails. The Richardson Highway traverses the western portion of northern Unit 20D, otherwise there is no road access.

South of the Tanana River, Unit 20D consists of the lowlands of the Tanana River valley and the foothills and mountains of the eastern Alaska Range. North of the Tanana River the unit consists of lowlands along several major rivers and the uplands of the Tanana Hills.

Communities in Unit 20D (Fig. 1) and their approximate populations include the following:

- Delta Junction (840)
- Big Delta, Deltana area (2,320)
- Ft. Greely Military Reservation (500)
- Dry Creek (100)
- Dot Lake (80)
- Healy Lake (25)

Special use areas in Unit 20D (Fig. 2) include the following:

- Delta Junction Bison Range (DJBR): The DJBR is 90,000 acres located in southern Unit 20D, east of Delta Junction. It was created in 1979 by the Alaska Legislature to perpetuate free-ranging bison and diminish bison damage to private agricultural crops. ADF&G produces bison forage on 2,700 acres of the DJBR to attract the Delta bison herd away from private agricultural land. ADF&G is the primary land manager

for the DJBR, which is managed as a multiple use area for activities ranging from hunting and fishing to timber sales and watershed protection. The DJBR is successfully reducing bison damage to private agricultural crops by delaying fall bison migration to private lands. However, it is not completely reducing crop damage and work is continuing to improve its efficacy.

- Bison Range Youth Hunt Management Area (BRYHMA): The BRYHMA is 6,380 acres located within the DJBR boundaries and encompasses the two DJBR fields of bison forage. The BRYHMA was created in 2002 to improve ADF&G's ability to meet DJBR legislative mandates and goals and objectives of the Delta Bison Management Plan by: 1) reducing the number of moose hunters in DJBR fields thus reducing the level of human activity and disturbance to bison in the DJBR fields prior to and during the moose hunting season, 2) reducing damage to bison forage crops by large numbers of moose hunters, and 3) providing a safer work site for ADF&G staff conducting DJBR field operations during the moose hunting season by reducing the threat of a hunting accident. The BRYHMA is meeting all of its objectives by reducing moose hunting activity via a drawing permit youth hunt. A secondary benefit of the hunt is to introduce a limited number of youth to moose hunting.
- Delta Controlled Use Area (DCUA): The DCUA was created in 1971 and encompasses 1,680 mi^2 primarily in southern Unit 20D with smaller portions in Units 13B and 20A. It was established to meet sheep hunter demand for uncrowded hunting conditions and for a walk-in hunting opportunity free of motorized vehicles. The goals are met by conducting 2 drawing permits hunts. The first hunt is Aug 10–25 with no motorized vehicles. The second hunt is Aug 26–Sep 20 with unrestricted access. Seventy-five permits are issued for each hunt. Hunter satisfaction with DCUA management is monitored with periodic questionnaires sent to sheep hunters asking for their evaluation of the goals and objectives. Based on the most recent questionnaire results in 2003, 81% of hunters were satisfied with their hunt and 95–96% agree with management goals.
- Delta Junction Management Area (DJMA): The DJMA is a 278-mi^2 area surrounding Delta Junction that was created as a moose hunting closed area in 1974 at the request of the Delta Advisory Committee. The area was reduced in size in 1991. Hunting was reestablished in the DJMA in 1996 with a drawing limited to 5 permits and in 1997 the number of permits was increased to 10. The Delta AC is satisfied with current DJMA management.
- Macomb Plateau Controlled Use Area (MPCUA): The MPCUA covers 304 mi^2 in southeast Unit 20D and was created in 1974 to protect a small area of critical caribou habitat on the Macomb Plateau for the small Macomb caribou herd and to regulate hunting. MPCUA regulations restrict motorized vehicles from the area during Aug 10–Sep 30. The Macomb Plateau is the core calving grounds for the Macomb caribou herd and the MPCUA is successfully meeting it's objective to protect important caribou habitat and to help provide a sustainable harvest for this small road-accessible herd.

Communities in Unit 20D are represented by two Fish and Game Advisory Committees. Delta Junction, Dry Creek, and Ft. Greely are represented by the Delta Fish and Game

Advisory Committee. Dot Lake and Healy Lake are represented by the Upper Tanana–Fortymile Fish and Game Advisory Committee.

BISON

STATUS: Bison utilize the southwestern portion of Unit 20D with summer range including federal land on the Ft. Wainwright Donnelly Training Area and winter range primarily on private agricultural land and state land in the DJBR.

The Delta bison herd numbered approximately 516 bison in fall 2007. This is above the population objective and resulted in an increased number of permits for the 2007-2008 hunting season.

The Delta bison herd is managed based on goals and objectives in a 5-year management plan that was developed with public input from the Delta Bison Working Group and approved by the Board of Game. Management goals include maintaining a healthy, free-ranging herd; reducing conflicts between bison and the public, and providing the greatest opportunity to hunt and view bison.

The Delta bison hunt is one of the most popular permit drawing hunts in the state, with approximately 15,000 people applying in recent years for about 60–155 permits. Hunters must attend a mandatory orientation to learn how to identify bulls and cows, to review land status, and to be informed about other issues. The hunting season opens July 20, but actual hunting does not begin until October 1 when local farmers have completed the fall harvest. The July opening date is to allow the Department to use hunting as a tool to reduce bison damage in agricultural areas if necessary. The season closes March 31. The bag limit is 1 bison every 5 years.

MANAGEMENT ACTIVITIES: Aerial population estimates are conducted annually to determine herd size. Ground based sex and age composition surveys are used to determine herd composition. Active radio collars are kept on 8–12 bison to facilitate locating the herd for surveys. A drawing permit hunt is conducted to manage herd size. A serologic survey of hunter-killed bison is conducted to allow monitoring of the herd's exposure to livestock diseases. Tissue and blood samples are collected to investigate genetic diversity.

Bison forage is managed on the DJBR to attract bison away from private agricultural land until fall harvest of crops is completed. Forage management activities include planting annual crops, managing perennial crops, prescribed fires, controlling noxious vegetation, and providing water and mineral supplements for bison.

ISSUES: The highest priority long-term bison management issue is to prevent bison damage to private agricultural crops while maintaining a free-ranging bison herd. This task is accomplished by managing the DJBR to produce bison forage to attract bison away from private land and maintaining herd size by hunting.

Other bison management issues include 1) cooperating with U.S. Army planners to minimize impacts to critical bison range as the Army expands training facilities in the bison range, 2) dealing with bison delaying their spring migration from private agricultural lands to their Delta River calving grounds; if substantial numbers of bison show a tendency for a delayed migration, it may be desirable to harvest them to eliminate those bison from the herd that may develop a year-round use of private agricultural lands, 3) managing the bison hunt in a manner that retains hunter access to private land to ensure long-term success at managing the bison population through hunting, 4) working with owners of domestic bison to reduce the chance of domestic bison escaping and joining the wild herd, 5) cooperating with State agencies and livestock owners to prevent the transfer of livestock diseases to bison when they have close contact, 6) cooperating with the U.S. Army to investigate unexploded chemical and biological ordnance on the DJBR, and 7) cooperating with the National Resource Conservation Service to develop flood control on the DJBR to protect downstream fisheries.

BLACK BEAR

STATUS: Accurate estimates of black bear population size and trends are not available for Unit 20D due to the difficulty of enumerating black bears. However, black bears appear to be numerous in the forested portions of the unit. A Unit 20D black bear population estimate was extrapolated using research data from adjacent Unit 20A and resulted in a Unit 20D an estimate of 750. Hunting black bears is popular in Unit 20D, and bait stations are commonly used in the spring. The current hunting season is open year-round with a bag limit of 3 bears/year. Harvest averages about 25 bears/year.

MANAGEMENT ACTIVITIES: Harvest is monitored by requiring black bear hunters to have their bears sealed and bait stations registered. A few bears become nuisance problems around Delta Junction, and staff is commonly asked to resolve the resulting problems.

ISSUES: Property owners along the Goodpaster River in northern Unit 20D are concerned that black bear bait stations are being placed within 1 mile of cabins.

BROWN BEAR

STATUS: Accurate estimates of brown bear population size and trends are not available for Unit 20D because it is difficult to survey them. A Unit 20D brown bear population estimate has been extrapolated using research data from adjacent and similar portions of Units 20A and 20E. This calculation produced a Unit 20D population estimate of 181–210 bears.

As part of the Unit 20D intensive management program, the Board of Game adopted an annual harvest goal of 5–15 brown bears/year and liberalized seasons and bag limits. No population size goal has been established.

Since intensive management was adopted for Unit 20D, the brown bear hunting season and bag limit has been liberalized to Aug 10–Jun 30 with a bag limit of one bear/year and no resident tag fee has been adopted.

Prior to implementation of intensive management in Unit 20D, brown bear mortality averaged 8 bears/year. Brown bear mortality increased after hunting regulations were liberalized. Mortality (hunting, defense of life and property, nuisance bears killed on a hunting license, etc.) is meeting the Board's goal, with a mean annual kill of 12 bears/year.

MANAGEMENT ACTIVITIES: Harvest is monitored by requiring brown bear hunters to have their bears sealed. Occasionally nuisance brown bears threaten life and property around Delta Junction.

ISSUES: Brown bears are an important predator on moose and caribou calves, therefore, their role in the Unit 20D intensive management program should be continually evaluated.

CARIBOU

Macomb Caribou Herd

STATUS: The Macomb caribou herd is small and ranges primarily in the Alaska Range foothills of southern Unit 20D. In the 1980s the herd size was 700–800. Herd size decreased in the early 1990s to a low of 458 in 1993, due to severe summer and winter weather and poor calf survival. Hunting was discontinued in 1992 but resumed in 1997.

In Dec. 1994 the Board determined that human use of the Macomb caribou herd is the preferred use and adopted intensive management for Unit 20D. In March 1995 the Board adopted a Macomb caribou herd population goal of 600–800 caribou with a harvest goal of 30–50/year.

When intensive management was adopted in 1995, the fall herd size was estimated to be 477, with 10 calves:100 cows and 39 bulls:100 cows. In fall 2007, Macomb caribou herd size was meeting the population goal with an estimate of 1,305 caribou, and a composition of 29 calves:100 cows and 68 bulls:100 cows.

When intensive management was adopted in 1995, the Macomb caribou hunting season had been closed since 1992 and remained closed through 1996. A registration permit hunt resumed in 1997, and from 1997–2003 harvest averaged 30 caribou/year but the season had to be closed by emergency order most years. Regulatory changes in 2004 resulted in a registration permit with the current season of Aug 15–25 and a harvest quota of 25, with motorized access restricted in the MPCUA and DCUA portions of the herds range. Harvest has averaged 24 caribou/year for the last 2 years, which is below the harvest goal, and consideration will be given to lengthening the season.

MANAGEMENT ACTIVITIES: An annual aerial population estimate and composition survey is conducted in the fall. Active radio collars are kept on 8–12 caribou to facilitate locating the herd for population estimates. Harvest is managed by registration permits.

ISSUES: The primary management issue with the Macomb caribou herd is meeting intensive management harvest goals without overharvesting a small, road accessible herd.

FURBEARER

STATUS: Furbearers present in Unit 20D include all species endemic to Interior Alaska. Species of most importance include beaver, coyote, lynx, marten, red fox, and wolverine. Intensive trapping occurs along the road system in southern Unit 20D from a combination of part-time and full-time trappers. Trapping in northern Unit 20D is mostly by commercial trappers. Lynx numbers are currently increasing due to an increasing hare population.

MANAGEMENT ACTIVITIES: Trappers are required to seal lynx, otter, and wolverine. Harvest data are analyzed. A questionnaire is sent to trappers annually to assess their impression of population trends. An annual snowshoe hare population trend survey is also conducted.

ISSUES: Coordinating lynx trapping regulations with population cycles is important to trappers. Working with them to improve techniques for avoiding capture of nontarget species is especially important for inexperienced trappers.

MOOSE

STATUS: Moose are distributed throughout about 4,400 mi^2 of moose habitat in Unit 20D. The Board of Game has determined that human use of moose is the preferred use and adopted intensive management with a moose population objective of 8,000–10,000 and a harvest objective of 500–700 moose/year. The 2006 moose population estimate for Unit 20D was 9,574 (corrected for sightability). Harvest the last 3 years has averaged 253 moose/year. The majority of the moose and harvest occur in southern Unit 20D.

Southern Unit 20D was estimated to have 7,406 moose (3.9 moose/mi^2) in fall 2006. Density of moose is highest west of the Johnson River. Moose calf survival was 41 calves:100 cows in fall 2006 and the bull:cow ratio was 21:100. An abundance of good habitat has been created in the last 15–30 years from land clearing and several large wildfires. Moose browse surveys conducted in spring 2007 indicated that moose were removing 25% of the current annual growth over the winter. Access for moose hunters is good, with numerous roads and trails. During the 2006 hunting season, 526 hunters (general bull season, and drawing permit hunts for bulls and antlerless moose) reported killing 230 moose. The general hunting season in southern Unit 20D is Sep 1–15, with a

bag limit east of the Johnson River of 1 bull and a bag limit west of the Johnson River of one bull with spike/fork or 50-inch antlers or at least 4 brow tines on one side. A 278-mi^2 area surrounding Delta Junction is managed as the DJMA where hunting is by drawing permit, with a maximum of 10 permits authorized. Ten drawing permits are issued for a 6,380-acre portion of the DJBR that is managed as the BRYHMA to reduce disturbance from moose hunters to the Delta bison herd and DJBR management activities. Each BRYHMA hunter is assigned a 4-day hunt period centered on the first 3 weekends in September. The first antlerless moose permit was conducted in 2006 with 65 permits issued. During 2007, the number of antlerless permits issued was increased to 900.

Northern Unit 20D was estimated to have 2,411 moose (0.8 moose/mi^2) in fall 2004. Moose calf survival was 31 calves:100 cows and the bull:cow ratio was 47:100. Access for hunters is good along the Richardson Highway and several major rivers, but poor away from them. The general hunting season is Sep 1–15 for one bull. During the 2006 hunting season, 245 hunters reported killing 99 moose in northern Unit 20D. The Healy River drainage has an additional hunting season of Aug 15–28 for a bull with spike-fork antlers to allow residents of Healy Lake village additional opportunity to harvest moose to meet their community needs.

MANAGEMENT ACTIVITIES: Annual aerial surveys are used to estimate population size and composition. Aerial twinning surveys are flown in the spring to estimate twinning rates in southwest Unit 20D where moose densities are highest. Periodic evaluations of browse use are conducted in southwest Unit 20D. Public meetings are held to gather public comments about moose management and regulations. Signs are posted along the road system to help hunters with moose hunting regulations. Assisting the public with nuisance moose around Delta Junction is common in fall and winter. Coordinating wildfire activities with Alaska Division of Forestry to help improve moose habitat also occurs.

ISSUES: The primary issue is addressing a very high density in southern Unit 20D west of the Johnson River (5.6 moose/mi^2), while much of the excellent habitat created in the last 30 years is aging and will decline in quality in coming years. Therefore, antlerless moose hunts are being conducted in this area as part of the intensive management program. An antlerless moose hunt will also help meet the harvest objective. There is some hunter dissatisfaction with the antler restriction regulations in southwest Unit 20D.

SHEEP

Eastern Alaska Range: Delta Controlled Use Area

STATUS: The Delta Controlled Use Area (DCUA) is 1,495 mi^2 in Units 20D, 13B, and 20A. It was established in 1971 to provide a walk-in hunting opportunity and uncrowded conditions for Dall sheep hunters. Objectives for the DCUA are to manage for a population of 1,800 sheep, with a mean annual harvest of 35 full-curl rams with a mean horn length of 36 inches and mean age exceeding 8 years.

The Dall sheep population in the DCUA was estimated at 2,187 sheep in 2006 and 2007 which meets the population objective. The DCUA hunt is split into two drawing permit hunts. The first season, during Aug 10–25 is for nonmotorized access. The second season, during Aug 26–Sep 20 allows motorized access. Seventy-five permits are issued for each season. Hunters have killed an average of 45 sheep/year the last 3 years, exceeding the harvest objective.

MANAGEMENT ACTIVITIES: Two drawing permit hunts are administered for Dall sheep hunters in the DCUA. A questionnaire is mailed to all permit recipients periodically to assess hunter satisfaction with management goals and objectives.

ISSUES: Protecting Dall sheep habitat from development and preventing the transmission of diseases from livestock to the Dall sheep population are the primary issues.

SMALL GAME

STATUS: Small game species of most importance include ruffed grouse, sharp-tailed grouse, spruce grouse, and snowshoe hares. Unit 20D is a popular small game hunting destination for grouse hunters from throughout the state. Although ptarmigan are present they are of lesser importance. Development of the private agricultural lands and recent wildfires in southern Unit 20D have improved habitat for ruffed and sharp-tailed grouse.

MANAGEMENT ACTIVITIES: Ruffed grouse drumming counts are conducted periodically to determine population trends. Sharp-tailed grouse dancing grounds are visited to estimate population trends. A ruffed grouse habitat management area is being developed on the DJBR and other locations are being investigated for habitat projects.

ISSUES: Developing habitat improvement techniques for ruffed and sharp-tailed grouse to replace the natural wildfire regime in southern Unit 20D is an important issue.

WOLF

STATUS: Wolves are present throughout Unit 20D. The fall 2006 population estimate was 119–134 wolves in 12 packs, with 43-49 wolves in southern Unit 20D, 65-73 wolves in northern Unit 20, and a correction factor of 11-12 wolves as loners. The upper range of this population estimate slightly exceeds the population objective in the fall. This estimate results in Unit 20D wolf:moose ratio of approximately 1:161 in southern Unit 20D and 1:35 in northern Unit 20D.

The Board of Game has determined that human consumption of moose and caribou is the preferred use for these species and has implemented intensive management in Unit 20D. In Mar. 1995, the Board of Game established a population goal of 15–125 wolves. The broad range was necessary to allow temporary reduction of the wolf population to low levels if needed to stimulate prey population increases. The Board also extended the wolf trapping season. In Oct. 1995, the Board adopted a wolf predation control implementation plan for Unit 20D which is in effect until July 1, 2009. No control actions have been implemented under this plan.

The current wolf hunting season is Aug. 10–Apr. 30 with a bag limit of 5 wolves. The trapping season is Oct. 15–Apr. 30 with no bag limit. Harvest of wolves varies annually and has averaged 51 wolves/year during the last 2 years, with most being taken by trapping.

MANAGEMENT ACTIVITIES: Trappers and hunters are required to have wolves sealed to monitor harvest. Population size is estimated from aerial surveys and from trapper interviews.

ISSUES: Wolves are an important predator on moose and caribou and thus their role in the Unit 20D intensive management program and in the Fortymile Caribou Recovery Program will be monitored closely.

OTHER ISSUES

Forestry: Delta staff cooperates with Alaska Division of Forestry to implement timber sales, wildland fire policies and wildfire management practices to benefit wildlife to improve wildlife habitat.

Mining: A major gold mine, the Pogo Mine, is being developed in the Goodpaster River drainage of northern Unit 20D. Road access has been developed to the mine in this previously roadless area. Although the road is currently closed to the public, some hunters have been using it primarily to hunt Fortymile caribou. Department staff will monitor the improved access into this roadless area and any changes in wildlife resource use that may result.

Big Game Ranching: Interest in big game ranching is increasing in the Delta Junction area, with bison, elk, yak, and reindeer currently being raised in the area. Minimizing the potential negative impacts of big game ranching on wildlife populations is important.

Domestic Livestock Production: Domestic livestock being raised in the Delta Junction area include cattle, horses, sheep, and hogs, with smaller numbers of other livestock such as goats and domestic fowl. These domestic livestock come into close contact with various wildlife species including moose, bison, foxes, coyotes, ravens, and others. There is a great potential for the transmission of domestic livestock diseases to wildlife.

Military Activity: The National Missile Defense Site is being developed on Ft. Greely Military Reservation, and the Army is developing a Stryker force training area on the Ft. Wainwright Donnelly Training area. The influx of people associated with these projects will place an increasing demand on wildlife resources. The Stryker training areas may be developed in important bison use areas and could impact bison. If these changes alter bison migratory patterns there could be greater depredation on private agricultural lands.

Enforcement: There is a perception by the public that the influx of people into the Delta Junction area is resulting in a high level of moose and bison poaching.

Figure 1. Game Management Unit 20D.

Figure 2. Game Management Unit 20D special use areas.

GAME MANAGEMENT UNITS 20A, 20B, 20C, 20F AND 25C

FAIRBANKS AREA OFFICE

Area Biologist: Don Young
Assistant Area Biologist: Tom Seaton

DESCRIPTION

The Fairbanks Area includes approximately 40,000 mi^2 in central interior Alaska. The area is roughly bordered by the Yukon River and Ray Mountains on the north and the Alaska Range to the south. It includes the Tanana drainages as far east as the Salcha and Delta Rivers, and Tanana and Yukon drainages as far west as the Tozitna and Cosna Rivers. Units 20C, and large portions of 20F and 25C are remote, roadless areas. Units 20A and 20B surround Fairbanks and include neighboring communities linked by the road system.

Communities (approximate size)
Healy–Ferry–Lignite–McKinley Park (1,200)
Anderson (500)
Central (125)
Nenana (500)
Fairbanks North Star Borough (83,000)
Manly Hot Springs (75)
Rampart (50)
Minto (250)
Tanana (300)

Conservation Units
Steese National Conservation Area (BLM)
White Mountains National Recreation Area (BLM)
Denali National Park and Preserve (NPS)
Minto Flats State Game Refuge
Creamers Field Migratory Waterfowl Refuge

Active Advisory Committees
Tanana-Rampart-Manley
Fairbanks
Minto-Nenana
Middle Nenana River
Central

Special Areas

Unit	Areas	Restriction	When Enacted	Purpose	Meeting Objectives
20A, 20D	Delta CUA	No motorized vehicles or pack animals for big game hunting[1]	1971	Provide for aesthetically pleasing hunt conditions	Yes
20A	Wood River CUA	No motorized vehicles except aircraft for big game[2]	1976	Address conflicts between ATV and airplane/horse hunters	Yes
20A	Yanert CUA	No motorized vehicles except aircraft for big game	1973	Address conflicts between ATV and airplane/horse hunters	Yes
20A	Ferry Trail MA	Caribou hunting by permit; antler restrictions for moose hunting	1990	Address caribou/moose management issues	Yes
20A	Healy-Lignite MA	Hunting by bow and arrow only	1990	Address safety concerns (closed 1973 – 1989)	Yes
20A	Stampede CA	Closed to the taking of wolves	2001	Address conflicts between wolf viewers and trappers	?
20A	Nenana Canyon CA	Closed to the taking of wolves	2003	Address conflicts between wolf viewers and trappers	?
20B	Minto Flats MA	Moose hunting by permit; No aircraft or airboats for moose hunting; no aircraft for beaver trapping prior to March 1.	1979 1996	Address moose management and user conflict issues	Yes
20B	Fairbanks MA	Moose hunting by bow and arrow only	1982	Address moose management issues	Yes
20B	Creamer's Field MWR	Hunting and trapping by registration only	1966	Address management issues	Yes
20B	Lost Lake CA	Closed to taking of big game w/ firearms and crossbows within 1/2 mile of lake	≤1962	Address safety concerns	Yes

20B	Birch Lake CA	Closed to taking of big game within 1/2 mile of lake	≤1962	Address safety concerns	Yes
20B	Harding Lake CA	Closed to taking of big game within 1/2 mile of lake	≤1962	Address safety concerns	Yes

([1]Aug 5-Aug 25, [2]Aug 1-Sep 30)

BLACK BEAR

STATUS: Black bears are common in all units. Harvest peaked in the late 1990s, but has shown moderate declines since. Average annual harvest rates are below the estimated maximum sustainable exploitation rate in all units, except possibly the central portion of Unit 20B. We do not believe the high harvest of black bears in central Unit 20B is of biological concern because surrounding units receive relatively little hunting pressure and provide reservoir areas that serve to repopulate potentially over-harvested areas. The continued high harvest of black bears in the heavily hunted central Unit 20B supports this hypothesis. Spring bear hunting at bait stations is especially popular in Unit 20B. High hunter effort and harvest near Fairbanks likely reduces black bears nuisance problems.

MANAGEMENT ACTIVITIES: Bait station registration, sealing, tooth aging, and responding to complaints about nuisance bears are the primary management activities. Sealing data provides the sex and age composition and location of harvest.

ISSUES: Regulations requiring the salvage of the hide and meat have been the subject of many proposals in recent years. Arguments generally revolve around the palatability of black bear meet during the fall when bears feed on fish. This concern does not pertain to black bears in the Interior, where they generally do not feed on fish. Another issue involves conflicts between bear baiters and the general public, particularly landowners in areas surrounding Fairbanks. Bear baiting has also become an issue within the Chena Recreation Area (CRA) where the CRA Citizens Advisory Board has lobbied Fish and Game to eliminate bear baiting in the CRA due to perceived conflicts. This issue is currently being addressed through education (i.e., bear baiting clinics required prior to registering a bait station) and, within the CRA, by working cooperatively with DNR, Parks and Recreation Division, CRA staff.

BROWN BEAR

STATUS: Brown bears are present in all units, but are most numerous in the mountainous portions of Units 20A and 20C, followed by the higher elevations in Units 20B, 20F, and 25C. Harvest is generally low except for portions of Units 20A and 20B. High harvests resulted in reduced numbers of bears in Unit 20A during the 1980s. We estimated that the brown bear population had recovered by 2000 following a reduction in season length (10 Sept.–31 May) beginning in 1994. The season was increased by 5 days

in 2002 (5 Sept.–31 May) and the bag limit liberalized in 2004 from 1 bear every 4 years to 1 bear every year. The harvest of females has recently been exceeding the management objectives.

MANAGEMENT ACTIVITIES: Sealing, tooth aging, and responding to complaints about nuisance bears are the primary management activities. Sealing data provides sex and age composition and location of the harvest.

ISSUES: Management issues typically relate to tag fees, season length, and bag limits, especially in Unit 20A, where predator management remains an issue because of Intensive Management. Generally, hunters feel that grizzly bears tag fees should be waived and seasons and bag limits further liberalized to reduce predation on ungulates.

Defense of Life and Property take has become more common the past few years in Unit 20B, with 11 reported in 2007. That far exceeded the long term average of less than 1 bear per year.

CARIBOU

DELTA CARIBOU HERD

STATUS: This herd declined dramatically in the early 1990s from about 11,000 to 4,000 caribou, prompting closure of a popular hunting season and implementation of a ground-based wolf control program during 1993-1995. Since termination of the wolf control program, the herd has continued to decline slowly to an estimated 2,000 caribou in regulatory year (RY) 2005 (RY05; RY begins 1 Jul and ends 30 Jun; e.g., RY05 = 1 Jul 2005 through 30 Jun 2006). The Board of Game authorized a small drawing permit hunt (up to 100 permits) for bull caribou at the Spring 1996 board meeting. Bull:cow ratios remain high and large bull:cow ratios continue to exceed objectives. Between 1996 and 2003, annual harvest averaged 35 bulls (range 22–50). In 2004 the Board authorized up to 150 permits be issued and mean harvest has since increased to 40 during RY04-RY07 (range 25-55).

MANAGEMENT ACTIVITIES: Standard population and composition surveys are conducted annually. ADF&G continues to investigate numerous aspects of caribou population ecology via ongoing research on this herd.

ISSUES: This has long been a very popular caribou hunt. Issues include the number of permits issued in the drawing hunt and the lack of intensive management efforts to increase the size of the herd.

WHITE MOUNTAINS CARIBOU HERD

STATUS: This small herd numbers roughly 600 caribou and primarily inhabits Unit 25C. It receives little harvest because of poor access. The general fall season is limited to bulls, while caribou of either sex may be taken during a winter registration permit hunt (1 Dec.–31 Mar.). Herd numbers appear stable.

MANAGEMENT ACTIVITIES: Fall composition surveys are conducted annually in cooperation with the Bureau of Land Management (BLM). Other surveys are conducted sporadically. A small number of radiocollared animals is maintained to facilitate surveys.

ISSUES: Harvest during the winter registration hunts has traditionally been low (0–3), but rose into the teens in regulatory years 2000-2002 because the caribou became more accessible due to their distribution. The winter harvest returned to historic levels afterward.

DENALI CARIBOU HERD

STATUS: This herd currently numbers roughly 2,000 animals and primarily inhabits Unit 20C within Denali National Park. The herd was closed to harvest after a decline in the early 1970s and it remains closed even under federal subsistence regulations. Intensive long-term research efforts by the National Park Service (NPS) and U.S. Geological Survey (USGS) enhance the herd's value as a control population for management and research efforts on other Interior herds.

MANAGEMENT ACTIVITIES: NPS and USGS annually conduct population estimation and composition surveys along with numerous research investigations.

ISSUES: There is local interest in opening the Denali caribou herd to limited harvest for bulls. The department has opposed such a hunt because herd numbers and bull:cow ratios are below management objectives and because of the herd's value as a control population.

FURBEARER

STATUS: Beaver are abundant in the Fairbanks area. Marten numbers appear to be at a moderate level. Hare numbers are at moderate to high levels and increasing. Lynx are relatively high in 20A, but low and increasing in the remainder of the Fairbanks area. Marten, lynx, and wolf are the more commercially important species in the Interior. Trapping effort near road-accessible areas is moderately high, but trapline densities away from the road system are low.

MANAGEMENT ACTIVITIES: Sealing provides harvest data for lynx, wolf, wolverine, and otter. Lynx surveys are conducted in selected units as part of the lynx harvest tracking management strategy.

ISSUES: Lack of demand for beaver pelts and high beaver survival had increased property damage caused by beaver from flooding and tree cutting along roadways and near residential areas in past years. An extended beaver season since 2004 has alleviated many of those problems and sparked more interest in harvesting beaver in the Fairbanks area.

MOOSE

STATUS: Unit 20A has one of the highest moose densities in the Interior (3–4 moose/mi^2) and trend data suggest numbers were increasing slowly. However, recent antlerless hunts may have stabilized the population. Unit 20A also has the lowest productivity of any wild moose population studied in North America. Despite the low productivity, calf survival is relatively high, likely due to high harvest rates of predators. Habitat conditions are of concern as high moose densities over the past decade have resulted in heavy browsing. In Unit 20B, moose are found at moderate densities (1.0–2.0 moose/mi^2), but densities vary widely from greater than 2 moose/mi^2 in the Minto Flats Management Area to less than 1 moose/mi^2 in the eastern portion of the unit. Moose populations in most of Units 20C, 20F, and 25C are low and no trends in population parameters are apparent from harvest data or anecdotal information.

The Fairbanks area accounts for approximately 25–30% of the statewide moose harvest with most (80%) of that harvest coming from Units 20A and 20B. The Board approved the harvest of antlerless moose by drawing permit in portions of Unit 20A and 20B in the mid 1990s and these hunts have been reauthorized annually. In 2002, the Board approved drawing permit hunts for calf moose in Unit 20A to help meet Intensive Management (IM) harvest objectives. In 2004, the Board approved a registration hunt for antlerless moose with a Sept. 1–Dec. 10 season to substantially increase the harvest of female moose to reduce moose numbers from an estimated 16,000 to the IM population objective of 10,000–12,000 moose. The season was extended (Sept. 25–Feb. 28) in 2006 to meet IM objectives, especially in the more remote portions of the unit. On average, 2,074 hunters harvested 613 antlerless moose annually during RY04-RY06.

Unit 20B is the most heavily hunted unit in the Fairbanks Area during the general hunt, with 2,500–3,000 hunters reporting, followed by Unit 20A with 1,200–1,600 hunters reporting.

MANAGEMENT ACTIVITIES: An intensive moose research project is ongoing in Unit 20A. Population estimation and composition surveys are conducted in Units 20A and 20B on an annual basis. The NPS periodically conducts surveys within Denali National Park in Unit 20C. A population estimation survey was conducted in Unit 25C in 1997 with funding from BLM. In addition, BLM has radiocollared moose to investigate moose movements and habitat use in Unit 25C.

A large (75,000-acre) prescribed fire has been planned for over 10 years in a portion of Unit 20A to improve wildlife habitat. That project has not been completed due to difficulty in realizing acceptable burning conditions. However, approximately 200,000

acres burned in 2 separate fires in the Tanana Flats in 2001 and 120,000 acres in 2006. In spite of this, we intend to move forward with the planned 75,000-acre prescribed burn. Intensive surveys of the 2001 Fish Creek and Survey Line fires were conducted in 2003 in the initial phase of monitoring potential changes in moose density and composition over time. Follow-up surveys will be conducted at 5-year intervals to monitor potential changes in population trends in the burns. Smaller scale habitat improvement projects have been completed in the Fairbanks Area, primarily along Nenana Ridge in Unit 20B to improve ruffed grouse habitat.

A graduate research project investigating winter foraging ecology of moose in Unit 20A was completed in 2002. Moose browse in central 20A was sampled intensively during that study. The Division has since expanded on that study by conducting browse surveys in the eastern and southwestern portions of Unit 20A. In addition, we surveyed browse in the high moose density Minto Flats Management Area (MFMA) and central portion of Unit 20B for comparison with moose populations across the region.

ISSUES: Past regulatory changes in Unit 20A, which were designed to reduce the harvest of bulls to sustainable levels and increase the harvest of cows and calves, have been controversial, but successful. Regulatory changes included a shorter, then longer, general season, unit-wide antler restrictions for residents and nonresident hunters, registration hunts and longer antlerless seasons.

Antlerless moose hunts can be divisive, but their acceptance and popularity generally has been growing each year since the hunts began in 1996. During RY04-RY07 thousands of hunters acquired registration permits and hunted for antlerless moose in Unit 20A. Antlerless harvest has more than offset the reduced bull harvest after antler restrictions.

The MFMA in Unit 20B is unique in terms of moose management in that a limited registration hunt with an either sex bag limit runs concurrent with a 15-day, antler-restricted general season. The Tier II hunt that was in place during RY96–RY03 was rescinded in RY04 and replaced with the registration hunt. The distribution of permits for this hunt has been fraught with problems and no solution has yet been identified.

Access restrictions for moose hunting are also controversial. Aircraft and airboats are not permitted for moose hunting in the MFMA. Motorized vehicles other than aircraft are not permitted in the Wood River and Yanert Controlled Use Areas in Unit 20A.

Finally, entry to some military land is prohibited. This is especially controversial in a portion of Unit 20A with excellent moose habitat.

SHEEP

ALASKA RANGE (UNIT 20A)

STATUS: Sheep numbers in this area declined in the early 1990s from 5,000 to about 2,000 sheep, as estimated in an extensive survey in 1994. No clear trend in sheep

population dynamics is apparent from subsequent trend area surveys. We believe that productivity has improved and that the population may be increasing. However, data from the small trend area have been variable.

MANAGEMENT ACTIVITIES: A small trend area is surveyed annually in the upper West Fork of the Little Delta River, Dry Creek, and Wood River drainages located in the central mountains of Unit 20A.

ISSUES: The primary issue among sheep hunters seemed to be the apparent high harvest of sub-legal rams (i.e., primarily 7/8 curl) which lead to the Board to adopt regulations to seal sheep horns to curb this apparent illegal harvest. Predator management to enhance sheep populations remains an issue. The department investigated coyote-Dall sheep predator-prey dynamics in the central mountains portions of Unit 20A and those results are currently being prepared for publication.

TANANA UPLANDS AND WHITE MOUNTAINS

STATUS: Approximately 600–750 sheep are found in relatively isolated areas of suitable habitat. There is no evidence that severe winters of the early 1990s affected the status of sheep in this area.

MANAGEMENT ACTIVITIES: Trend areas encompassing a large portion of suitable sheep habitat are surveyed annually in conjunction with BLM and U.S. Fish and Wildlife Service.

ISSUES: Horn breakage found in mature rams in portions of the White Mountains is of interest and of concern to hunters pursuing sheep there.

WOLF

STATUS: Wolf numbers increased in Unit 20A following a reduction due to wolf in 1993-1994, and appear to be stable to slightly increasing at moderately high levels. Conversely, wolf numbers began to decline in Denali National Park by 1995 (Unit 20C) following an abrupt increase and peak in numbers concurrent with harsh winters in the early 1990s. Data on wolf abundance in Units 20B, 20F, and 25C is lacking, but anecdotal information suggests wolf numbers are stable in these units.

MANAGEMENT ACTIVITIES: Sporadic surveys, including radiotelemetry surveys, incidental observations, and sealing constitute recent management. A research project in Unit 20A provided considerable information on the status of wolves in that area through 2000. Research on dog lice in wolves is ongoing and radiocollared wolf packs assist in estimating wolf numbers and pack dynamics.

ISSUES: Wolf control continues to be controversial. The Board has identified Unit 20A for Intensive Management. A ground-based wolf control program to reverse the decline of the Delta caribou herd was implemented in 1993, but wolf control was suspended in

early 1994. Since then, there have been no intensive management efforts to increase the size of the Delta caribou herd.

SMALL GAME

STATUS: The overall status of small game populations is largely unknown. Anecdotal information and spring lynx and hare track surveys suggests hare numbers are rebounding from the lows in 2001–2003. Based on drumming count surveys conducted at Clear and along the Tanana River near Fairbanks grouse numbers are currently declining and are predicted to reach the bottom of their cycle in 2008. Ptarmigan numbers still appear to be low. Hunting small game is popular along road-accessible areas.

MANAGEMENT ACTIVITIES: Ruffed grouse drumming counts are conducted annually in Units 20A and 20B.

ISSUES: None.

OTHER ISSUES

Other issues potentially affecting wildlife or wildlife users include forestry, fire management, oil and gas exploration in the Minto Flats State Game Refuge and Healy Basin, military activities, Eielson AFB to Ft. Greely railroad extension and the Fort Wainwright fencing project. As communities in the area grow and expand, nuisance wildlife management activities and urban wildlife issues are expected to increase.

Unit 20D Wolf Predation Control Implementation Plan and Activities
Division of Wildlife Conservation Report to the Alaska Board of Game
March 2008

Background

A wolf control implementation plan was adopted by the Board of Game for Unit 20D except for portions within the Ft. Greely and Ft. Wainwright Military Reservations and within the former Fortymile Nonlethal Predation Control Area. The plan was in effect for 5 years during July 1, 1997–June 30, 2002 and was reauthorized at the spring 2004 Board of Game meeting for up to 5 additional years beginning July 1, 2004. Objectives for prey populations as listed in 5 AAC 92.125 (i) are:

- Moose: increase the fall population to 8,000–10,000 with a sustainable harvest of 500–700/year.
- Macomb caribou herd (MCH): increase the fall population to 600–800 with a sustainable harvest of 30–50/year.

Plan Implementation Activities

We did not conduct any wolf reduction programs in Unit 20D during the preceding 12 months.

Status of Prey and Predator Populations

We achieved the Unit 20D moose population objective in fall 2006 which is the last year a complete population estimate was obtained. We estimated the Unit 20D moose population at 9,574 (8,505–10,643) in fall 2006, with a sightability correction factor applied. Population growth has occurred primarily in the southwest portion of the unit. Our most recent estimates of fall calf survival were 41 calves:100 cows in 2006 south of the Tanana River and 31 calves:100 cows in 2004 north of the Tanana River. Reported harvest met the objective with a reported harvest of 772 moose during regulatory year (RY) 2007–2008 (regulatory year begins on July 1 and ends June 30, e.g., RY06 = July1, 2006–June 30, 2007). Reported harvest included 510 antlerless moose in southwest Unit 20D.

The fall 2007 MCH population estimate exceeded the population objective, but we did not achieve the MCH harvest objective. A fall 2007 population estimate resulted in 1,305 animals in the herd, with 29 calves:100 cows. Harvest during RY07 was 27 caribou which was slightly below the objective. Although the Macomb caribou herd is road accessible from both the Alaska and Richardson Highways, the low harvest is a result of a hunt boundary changes made in RY04 that required hunters to walk several miles from the highways before hunting. This boundary change was necessary because the number of hunters and easy road access resulted in over harvest and several emergency closures during previous years. Consideration is being given to increasing the hunting season by a few days in RY08 as a result of the herd size estimate.

We estimated the fall 2006 wolf population at 119–134 in 12 packs. This wolf population estimate resulted in a ratio of 1 wolf:161 moose in southern Unit 20D and 1 wolf:35 moose in northern Unit 20D. Trappers reported taking 50 wolves during RY06, resulting in a spring 2007 population estimate of 69–84. Harvest during RY06 was 37–42% of the fall population.

There is no control program population objective for brown bears in Unit 20D, however, there is a harvest management objective of 5–15 bears per year. We have no population size or density estimate based on systematic surveys. Brown bear mortality during RY06 met the harvest objective, with reported mortality of 14 bears. Seventy-two percent of all bears killed were male. Mortality from all sources since the tag fee exemption became effective in all of Unit 20D has been 12 bears/year.

There is no control program population objective for black bears in Unit 20D, but the harvest management objective is for an annual harvest not to exceed 15 bears south of the Tanana River or 15 bears north of the Tanana River. We have no population size or density estimate based on systematic surveys. Black bear harvest during RY06 met the objective, with 11 bears reported taken south of the Tanana River and 9 bears taken north of the river.

Recommendations to Achieve Plan Objectives

We recommend the plan not be implemented at this time because of the need to focus Department and private resources on existing control programs and because we are meeting most plan objectives using hunting and trapping seasons and bag limits.

Unit 20A Wolf Predation Control Implementation Plan and Activities
Report to the Alaska Board of Game
March 2008

Background

A wolf control implementation plan was adopted for Unit 20A except for the Fort Wainwright and Fort Greely Military Reservations, Clear Air Force Station, and that portion of Unit 20A south and west of a line beginning at the east end of the Moody Bridge where it intersects with the Unit 20A boundary, then north along the boundary of Unit 20A to a point exactly one mile east of the Parks Highway, then south and parallel to the Parks Highway at a distance of one mile east, to the southern boundary of Unit 20A. The original plan was in effect for 5 years beginning January 1, 1996 and was reauthorized at the spring 2004 Board of Game meeting for 5 years beginning July 1, 2004. The objective for the program as listed in 5 AAC 92.125 (2)(A) is to:

- Reverse the decline of the Delta caribou herd and increase the mid-summer caribou population to 5,000–7,000 with a sustainable annual harvest of 300–700 caribou by the year 2009.

Plan Implementation Activities

The Department did not conduct any wolf reduction programs in Unit 20A during the preceding 12 months.

Status of Prey and Predator Populations

Neither the Delta caribou herd population nor harvest objectives were met in the preceding 12 months. The 2004 minimum population estimate was 2,168 caribou. Population censuses were not conducted in 2005 and 2006 due to poor survey conditions. Although the 2007 minimum population estimate increased to 2,985 caribou it was below the population objective of 5,000–7,000 caribou. The regulatory year (RY) 2007 Delta caribou hunt was administered by drawing permit (150 permits issued) and 58 bull caribou were reported taken which results in a harvest rate of approximately 2% (regulatory year begins on July 1 and ends June 30, e.g., RY06 = July 1, 2006–June, 30, 2007). The mean reported harvest during RY04–RY07, when 150 permits were issued annually, was 41 caribou.

The intensive management population objective for moose in Unit 20A is 10,000–12,000 and the intensive management harvest objective is 1,400–1,600. The Unit 20A moose population increased at an average rate of about 5% annually between 1996 (11,500; ± 13% @ 90% Confidence Interval) and 2003 (17,621; ± 13% @ 90% Confidence Interval). Antlerless harvests of 599, 678 and 551 during RY04–RY06 reduced the population to an estimated November population of 15,328 (± 16% @ 90% Confidence Interval) moose in 2006. A population estimate was not obtained in 2007 due to poor survey conditions, but we predicted a November population of 14,520 (± 29% @ 90% Confidence Interval). The intensive management harvest objective of 1,400–1,600 moose

was not met in RY07 based on the preliminary reported harvest of approximately 867 moose (486 male, 377 female, and 4 unknown moose).

Size of the Dall sheep population in Unit 20A was not estimated. Surveys, harvest reports and anecdotal information suggest that the department population objective of 5000 sheep was not met in the preceding 12 months. The preliminary reported harvest in RY07 was 92 rams, down from a high of 163 rams in RY89.

There is no population objective for wolves in Unit 20A. The fall 2005 population estimate of 215–225 wolves in 29 packs was similar to the previous estimate during fall 2001 of 206–215 wolves in 20–25 packs. A population estimate was not obtained during fall 2006 due to poor survey conditions, and poor survey conditions have precluded conducting surveys this winter to estimate fall 2007 wolf numbers. Reported wolf harvests declined from an average of 86 (range 67–98) during RY98–RY02 to 54 (range 33-67) during RY03-RY06 with 2 reported taken by snowmachine hunting (RY04).

There is no population objective for brown bears in Unit 20A, and no estimate of population size or density was made based on systematic surveys. Modeling, harvest data, and anecdotal information suggests that brown bear numbers have recovered to levels observed prior to an experimental reduction program conducted during 1984–1993. The management objective is for the 3-year mean human-caused mortality not to exceed 8% of the bears $\geq$ 2 years old. Applying extrapolations of grizzly bear densities based on habitat, a population of 131–156 grizzly bears is estimated. A human-caused mortality rate of 8% of the bears ≥2 years old is 10.5–12.5 bears. The 3-year (RY04–RY06) mean reported human-caused mortality for Unit 20A was 17 bears (range 13–23) ≥2 years of age.

There is no population objective for black bears in Unit 20A, and no estimate of population size or density was made based on systematic surveys. However, applying extrapolations of black bear densities based on habitat, a population of 500–700 black bears is estimated for Unit 20A. The 3-year (RY04–RY06) reported mean harvest of black bears for Unit 20A was 29 (range 24–34).

Recommendations to Achieve Plan Objectives

Implementing the existing control plan in Unit 20A is not recommended at this time because of moose management considerations. Wolf control would likely increase moose calf survival and result in additional moose being available for harvest. That harvest would have to include liberal antlerless hunts to prevent the population from increasing and causing further damage to the habitat and nutritional stress to the animals. However, public opposition to antlerless hunts has been increasing and the future of these hunts is uncertain. The department proposes to maintain the moose population at its current level while continuing to monitor nutritional status and obtaining public input concerning population and harvest objectives. The current wolf control program in Unit 13 could benefit the Delta caribou herd because their calving area is within the Unit 13 control area.

Upper Yukon/Tanana Predation Control Implementation Plan and Activities
Division of Wildlife Conservation Report to the Alaska Board of Game
March 2008

Background

Residents of the upper Yukon/Tanana drainages have expressed concern for more than 20 years about the chronically low density of the Fortymile Caribou Herd (FCH) and of moose in Units 12 and 20E. They felt the low density of caribou was primarily due to wolf predation and the low density of moose was due to a combination of wolf and brown bear predation. During Board of Game meetings in March 2004 and 2006, the Upper Tanana/Fortymile Fish and Game Advisory Committee and the public provided testimony explaining the problem and requested corrective action.

The Board first adopted the Upper Yukon/Tanana Predation Control Implementation Plan in November 2004 to increase the moose population. The plan authorized control of wolves in Units 12 and 20E and control of brown bears in southcentral Unit 20E. In January 2006, the Board adopted a revised implementation plan in the form of an emergency regulation. The emergency regulation limited wolf control activities to northern Unit 12 and southern Unit 20E and clarified and updated key components of the plan that included: boundaries of the bear control area, wildlife population and human use information, predator and prey population levels and objectives, plan justifications, methods and means, time frame for updates and evaluations, and miscellaneous specifications. In May 2006, the Board further modified the emergency regulation and adopted it as a final regulation. Modifications included: adding a goal to increase the FCH, expanding the wolf control area to encompass the FCH range (all of Unit 20E and portions of Units 12, 20B, 20D and 25C), and expanding the brown bear control area to include more of southcentral Unit 20E. The plan is in effect for 5 years, and began on January 1, 2005. The Board authorized the commissioner to issue public aerial shooting permits or public land and shoot permits as methods of wolf removal pursuant to AS 16.05.783, and to reduce the brown bear population by means and direction included in the Board of Game Bear Conservation and Management Policy (2006-164-BOG). Objectives of the plan, as listed in 5 AAC 92.125, are to:

- Increase the Fortymile Caribou Herd to aid in achieving the intensive management population objective of 50,000–100,000 and harvest objective of 1,000–15,000.
- Increase the moose population in Unit 12 north of the Alaska Highway and in Unit 20E to aid in achieving the geographically proportional intensive management moose population objective of 8,744–11,116 and harvest objective of 547–1,084.

Plan Implementation Activities

2006–2007 CONTROL PROGRAM

We conducted control activities during regulatory year (RY) 2006 under authority of the wolf and brown bear control program adopted by the Board in November 2004 and modified in January 2006 (regulatory year begins on July 1 and ends June 30, e.g., RY06 = July 1, 2006–June 30, 2007).

Wolf Control. We conducted wolf control activities in: that portion of Unit 12 north of the Alaska Highway; that portion of Unit 20D within the Goodpaster River drainage upstream from and including the South Fork Goodpaster River drainage, and within the Healy River, and the Billy and Sand creek drainages; that portion of Unit 20B within the Salcha River drainage upstream from and including the Goose Creek drainage, and within the Middle Fork of the Chena River drainage; all of Unit 20E; and that portion of Unit 25C within the Birch Creek drainage upstream from the Steese Highway bridge, and within the area draining into the south and west bank of the Yukon River upstream from the community of Circle. We received 74 applications for public wolf control permits and issued 50 permits (21 pilots, 30 gunners). The control program was in effect during October 2, 2006–April 30, 2007. Permittees were allowed to take wolves using aerial shooting or land and shoot methods. They took 23 wolves, and an additional 80 wolves were taken by hunters and trappers (Table 1). We were unable to reduce the population to 88–103 wolves, as specified in the predator control implementation plan adopted by the Board in May 2006.

Table 1. Wolf harvest and wolf control take in the Upper Yukon/Tanana Predator Control Area, RY01–RY06.

Regulatory Year	Hunting and Trapping Harvest	Wolf Control Take	Total Kill
2001–2002	50	-	50
2002–2003	65	-	65
2003–2004	56	-	56
2004–2005	75	58	133
2005–2006	69	17	86
2006–2007[1]	80	23	103

[1]Control area expanded to include all of the FCH range in Alaska.

Brown Bear Control. We conducted brown bear control activities in that portion of Unit 20E within the South Fork Fortymile River drainage upstream from and including the Butte Creek drainage, the Middle Fork Fortymile River drainage upstream from but not including the Joseph Creek drainage, and the Sixtymile and North Ladue river drainages. We issued 40 control permits to the public, and registered 22 brown bear bait sites. The control program was in effect during September 1, 2006–June 30, 2007. Requirements and restrictions for the take of brown bears included in the Alaska Hunting Regulations applied to the permittees, except that permittees did not have an individual kill limit, they

had the option to bait brown bears and take brown bears same-day-airborne at bait stations if the bait stations were registered with our Tok office. Permittees took 1 brown bear, and an additional 2 bears were taken by hunters (Table 2). No bears were taken at bait sites. We were unable to reduce the population to 68 bears, as specified in the predator control implementation plan adopted by the Board in May 2006.

Table 2. Brown bear harvest and brown bear control take in the Upper Yukon/Tanana Predator Control Area, RY01–RY06.

Regulatory Year	Hunting	Brown Bear Control Take	Total Kill
2001–2002	6	-	6
2002–2003	9	-	9
2003–2004	11	-	11
2004–2005	8	2	10
2005–2006	7	3	10
2006–2007[1]	2	1	3

[1]Control area expanded to include a larger portion of southcentral Unit 20E.

2007–2008 CONTROL PROGRAM

We are conducting control activities during RY07 under authority of the wolf and brown bear control program adopted by the Board in May 2006.

Wolf Control. We are conducting wolf control activities in: that portion of Unit 12 north of the Alaska Highway; that portion of Unit 20D within the Goodpaster River drainage upstream from and including the South Fork Goodpaster River drainage, and within the Healy River, and the Billy and Sand creek drainages; that portion of Unit 20B within the Salcha River drainage upstream from and including the Goose Creek drainage, and within the Middle Fork of the Chena River drainage; all of Unit 20E; and that portion of Unit 25C within the Birch Creek drainage upstream from the Steese Highway bridge, and within the area draining into the south and west bank of the Yukon River upstream from the community of Circle. We received 63 applications for public wolf control permits and issued 44 permits (24 pilots, 20 gunners). The control program will be in effect during October 10, 2007–April 30, 2008 or until the wolf population is reduced to the control objective of 88–103 specified in the predator control implementation plan adopted by the Board in May 2006. We estimate that 263–295 wolves will need to be taken to reach the upper end of the control objective. To date, 2 wolves have been taken by control permittees.

Brown Bear Control. We are conducting brown bear control activities in that portion of Unit 20E within the South Fork Fortymile River drainage upstream from and including the Butte Creek drainage, the Middle Fork Fortymile River drainage upstream from but not including the Joseph Creek drainage, and the Sixtymile and North Ladue river drainages. To date, we have issued 18 control permits to the public, and registered no brown bear bait sites. The control program will be in effect during August 1, 2007–June 30, 2008 or until the brown bear population is reduced to the control objective of 68 bears

specified in the predator control implementation plan adopted by the Board in May 2006. Requirements and restrictions for the take of brown bears included in the Alaska Hunting Regulations apply to the permittees, except that permittees do not have an individual kill limit, they may bait brown bears and take brown bears same-day-airborne at bait stations if the bait stations are registered with our Tok office. In addition, hunting regulations allowed both permittees and unpermitted hunters to sell the raw hide and skull of brown bears taken in the brown bear control area if they obtain a department sale tag and permit.

We estimate that 46–75 brown bears will need to be taken to reach the control objective. To date, permittees have taken 1 brown bear. That bear was not taken at a bait site and a sale permit and tag were issued to the permittee. To date, neither the hide nor skull of this bear has been reported as sold. An additional 3 brown bears have been taken by hunters, with no sale permits or tags issued.

Status of Prey and Predator Populations

CARIBOU POPULATION

Population Composition. Fall 2007 surveys indicated there were an estimated 37 calves per 100 cows. Calves per 100 cows averaged 27 during the prior 5 years.

Population Size. A photo census was successfully completed on the herd in July of 2007, with 38,364 caribou counted. The last photo census was completed since 2003, when 43,375 caribou were counted. Another photo census is planned for June 2008. Herd size in May 2008 is expected to be near 39,000 depending on late winter mortality. Herd size is well below the intensive management objective of 50,000–100,000.

Harvest. Harvest is guided by the FCH Harvest Plan (2006–2012), which was developed by a coalition of fish and game advisory committees and the Eastern Interior Regional Subsistence Advisory Council in cooperation with Yukon First Nations, the Yukon government, US Bureau of Land Management and the Alaska Department of Fish and Game. The plan calls for continuing the present registration permit system with a conservative harvest rate of 2% or 850 animals to facilitate herd growth.

Average annual harvest during RY02–RY06 was 820. Harvest during RY07 was 1,011. Based on our current population estimate and using guidelines in the FCH Harvest Plan, the harvest quota for RY08 will be approximately 850 caribou. Harvest is below the intensive management objective of 1,000–15,000 caribou.

MOOSE POPULATION

Population Composition. Since the beginning of the control program in January of 2005, we conducted surveys in a 4,630mi^2 area of southern Unit 20E during each fall (2005 – 2007). In this area, the estimated calves per 100 cows were 23, 31 and 26 and yearling bulls per 100 cows 11, 6 and 11 during each of these years respectively. During fall 2000–2004, calves and yearling bulls per 100 cows averaged 18 and 9, respectively.

Additional surveys are planned during fall 2008. Current data suggests the proportion of young moose may be increasing in a portion of southern Unit 20E where the wolf population has been reduced by ≥70% of the precontrol fall population level during 2005-2007.

Population Size. We estimated the moose population size in Unit 12 north of the Alaska Highway and Unit 20E at 2,600-4,300 in 2004, 3,400-5,100 in 2005, 4,000-5,900 in 2006 and 4,000-6,100 in 2007. These estimates were based on extrapolations from fall surveys conducted in a 4,630 mi^2 area of southern Unit 20E during 2004–2007 and surveys conducted within a 1,200 mi^2 area of the Yukon Charley Rivers Preserve in northern Unit 20E in 2003. Additional surveys are planned for fall 2008. The current population is well below the intensive management objective of 8,744–11,116 and is likely stable in the overall area. However, current data suggests the population may be increasing within a portion of southern Unit 20E where the wolf population has been reduced by ≥70% of the precontrol fall population level during 2005-2007.

Harvest. Average harvest of moose in Unit 12 north of the Alaska Highway and in Unit 20E during RY02–RY06 was 142. Harvest during RY07 was 149. Based on current 2007 estimates of recruitment and a 4% harvest rate of bulls only, the harvestable surplus was 160-244, well below the intensive management harvest objective of 547–1,084.

WOLF POPULATION

Population Size. We estimated the pre-control population in the current wolf control area during fall 2004 was 350–410 in 50–70 packs or approximately 18–2 wolves/1000 mi^2. This estimate was based on department wolf surveys, wolf research in interior Alaska and Yukon, anecdotal observations, trapper and hunter interviews, and sealing records.

During RY04, wolves were reduced due to predation control activities and hunter and trapper harvest. We estimated the fall 2005 population in the current wolf control area was 300–375 wolves in 50–70 packs (approximately 16–19 wolves/1,000 mi^2). This estimate was based on information from wolf research in Interior Alaska and Yukon, wolf control permittee reports, our observations, and sealing records.

During RY05, additional wolves were taken by wolf control permittees, hunters and trappers. Using our PredPrey model, we estimated the fall 2006 wolf population in the current wolf control area at 300–425 wolves. The model uses the relationship between spring 2006 wolf, moose and caribou population size to predict a likely growth rate for the wolf population. Mathematical equations which define model functions were taken from published predator-prey studies conducted across North America. Surveys are planned for March 2007 if survey conditions are suitable.

During RY06, additional wolves were taken by wolf control permittees, hunters and trappers. Using our PredPrey model, we estimated the fall 2007 wolf population in the current wolf control area at 366-398 wolves. Surveys are planned for March 2008 if survey conditions are suitable.

Harvest. Hunting and trapping harvest of wolves in the current control area during RY 01–RY06 averaged 66 annually (Table 1). An additional 58, 17 and 23 wolves were taken in the wolf control program during RY04–RY06, respectively.

BROWN BEAR POPULATION

Population Size. In June 2004 we estimated the pre-control brown bear population within the current brown bear control area was 170 bears. The estimate was based on extrapolation of a density estimate obtained in central Unit 20E during 1986 and on intensive research studies conducted in similar habitats with similar bear food resources during 1981–1998 in Unit 20A, 100 miles to the west.

During May 20–July 18, 2006, we conducted a DNA-based mark-recapture estimate of brown bear numbers in a 2005 mi^2 portion of the current bear control area. The survey area core population estimate was 48 bears (20.8/1000 km^2). The core population is the average number of brown bears within the survey area. Extrapolation of these data resulted in an estimate of 150 bears (111–189) in the entire control area. This is higher than the 114–143 bears reported to the board in March 2007 and is the result of a more thorough understanding of the differences in bear distribution within the survey area.

We are analyzing mark-recapture data to obtain information about bear distribution in relation to large-scale wildfires that occurred in the control area during 2004 (31% of the area). Our analysis indicates that by 2006 essentially no resident bears were present in the burns, and density was very high in adjacent unburned areas. The burns included several key moose calving areas. Lower density of brown bears in those calving areas may have resulted in lower levels of bear predation on calves.

Harvest. Hunting harvest of brown bears in the current control area during RY01–RY06 averaged 7 annually (Table 2). An additional 2, 3 and 1 bears were taken in the bear control program during RY04–RY06, respectively.

Recommendations to Achieve Plan Objectives

We recommend continuing wolf and brown bear control activities as approved by the Board.

Wolf reduction objectives have not been achieved for a variety of reasons, including lack of snow cover for tracking wolves and landing aircraft, dense tree cover in parts of the control area, and the high price of aircraft fuel. However, progress is being made, and the program should be continued to allow operations during more favorable snow conditions.

Brown bear reduction objectives have also not been achieved. Control methods currently authorized have not been effective, and more extreme methods such as trapping, snaring, same-day-airborne, or sale of tanned hides are not supported by the department.

However, results of the recent brown bear population survey indicate density within burned portions of the control area is likely lower than initially thought which may benefit moose calf survival in those areas. The control program should continue until a more thorough analysis and interpretation of the survey data is completed.

While the current methods have not been effective under the conditions in this control area, we do not feel brown bear baiting, same-day-airborne at bait-stations and sale of raw hides would necessarily be ineffective in other areas. After 3-years of implementation, it is clear that the likelihood of success of future bear control programs should be assessed on a case-by-case basis. A specific method, or combination of methods, may prove ineffective in one area, but may be successful in another.

Unit 19D-East Predation Control Implementation Plan and Activities
Division of Wildlife Conservation Report to the Alaska Board of Game
March 2008

Background

The Unit 19D-East wolf predation control implementation plan was first adopted by the Board of Game in fall 1995. In January 2000, the Board made a finding of emergency regarding the Unit 19D-East situation and extended the Commissioner's authority to reduce wolves during 2000–2005. In March 2001, the Board supported recommendations from the Adaptive Wildlife Management Team (AWMT) by adopting several regulations to begin implementing predator control.

Incorporating the recommendations from the AWMT, the Department established the Experimental Micro Management Area (EMMA) to focus predator control and associated management efforts in a relatively small area and to conduct research on the efficacy of the program. The concept of the EMMA was a change from previous approaches dealing with predator management because it focused predator management around a village to provide more moose for subsistence needs. In March 2003 the Board re-evaluated the Unit 19D-East wolf predation control program and issued comprehensive new board findings. The Board endorsed the EMMA concept and allowed the department discretion to change the size of the control area to provide for adaptive management. Thus, the 19D-East wolf predation control implementation plan involves both research and management components. The Board also recommended the department implement the Unit 19D-East experimental management program according to specific guidelines.

There were 4 key guidelines for the Unit 19D-East Experimental Predator Management program:

1) Establish the EMMA.
2) Close hunting in the EMMA during predator control, and reopen hunting when intensive removal of predators ceases.
3) Remove bears from the EMMA.
4) Remove wolves from the EMMA.

The wolf predation control program began in regulatory year (RY) 2003–2004 (regulatory year begins on July 1 and ends June 30, e.g., RY03 = July 1, 2003–June 30, 2004). In January 2006, the Board adopted a revised implementation plan in the form of an emergency regulation. The emergency regulation clarified and updated key components of the implementation plan that included: wildlife population and human use information, predator and prey population levels and objectives, plan justifications, methods and means, time frame for updates and evaluations, and miscellaneous specifications.

In May 2006, the Board further modified the emergency regulation, added black and brown bear predation control within the EMMA, deleated the link between the hunting closure in the EMMA and intensive removal of predators, and adopted a final predator control implementation plan. The plan was approved for 5 years, beginning on July 1,

2004. The following prey and predator population levels and population objectives for Unit 19D-East are included in the final regulation.

- 2004 moose population: 3,444–5,281 (0.5 moose/mi^2)
- Moose population objective: 6,000–8,000
- Moose harvest objective: 400–600
- Fall 2000 pre-control wolf population estimate: 198
- Wolf population control objective:
  - As low as possible in EMMA
  - No less than 40 in 19D-East
- Pre-control black bear population estimate:
  - 1,700 in 19D-East
  - 130 in EMMA
- Black bear population control objective:
  - As low as possible in EMMA
  - Maintain as a viable part of natural ecosystem in 19D-East
- Pre-control brown bear population estimate:
  - 128 in 19D-East
  - 9 in EMMA
- Brown bear population control objective:
  - As low as possible in EMMA
  - Maintain as a viable part of natural ecosystem in 19D-East

Plan Implementation Activities

EXPERIMENTAL MICRO MANAGEMENT AREA (EMMA)

The EMMA was established in 2001 and is within a 20 mile radius of McGrath (528 mi^2). This area encompasses the highest density of moose in 19D-East and was established as a treatment area where predator population manipulations and other management actions could be tested. Beginning in 2004, moose hunting was closed within the EMMA.

REMOVAL OF BEARS

We conducted a non-lethal bear removal project in May 2003 and 2004. During 2003, 81 black bears (all older than 1-year old) and 9 brown bears (including 2 cubs-of-the-year) were captured and moved from the EMMA and surrounding area. In 2004, we captured and moved 34 black bears and 1 brown bear (all older than 1-year old) from the EMMA.

WOLF CONTROL

The Board authorized the commissioner to issue public aerial shooting or land and shoot permits as the method of lethal wolf removal pursuant to AS 16.05.783. We exercised discretion to adjust the size of the area where wolf predation control activities would occur within the Unit 19D-East Wolf Predation Control Area. The wolf control zone established when control efforts began in RY03 initially encompassed 1728 mi^2, surrounding and

including the EMMA. Within 2 weeks, we expanded to 3,210 mi^2 to allow permittees to take wolves that used the EMMA but were frequently located outside its boarders. In RY06, we expanded the wolf control zone to 6,245 mi^2 to provide local residents with more moose available for harvest by hunters displaced from the EMMA, which is closed to moose hunting. The expanded area includes all of Unit 19D-East, west of a north-south line near Telida (153° 20' 0.00" west longitude).

In RY06, the control program began on November 1, 2006 and continued through April 30, 2007. We issued 9 control permits (5 pilot, 3 gunner), and 2 wolves were taken (Table 1). In RY07, the control program began on November 1, 2007 and will continue until April 30, 2008 or until the wolf population in Unit 19D-East is reduced to the control objective of 40 wolves specified in the May 2006 plan. We estimated that 46–74 wolves will need to be taken in order to reach the control objective. We have issued 24 control permits (9 pilot, 15 gunner), and 14 wolves have been reported taken as of February 21, 2008.

Table 1. Wolf control dates, control permits issued and wolves killed.

		Permits issued		Wolves killed		
Year	Authorized dates	Pilot	Gunner	F	M	Total
RY03	Dec. 2003–Apr. 30, 2004	28[a]		7	10	17[b]
RY04	Nov. 17, 2004–Apr. 30, 2005	6	11	7	7	14[c]
RY05	Dec. 3, 2005–Apr. 30, 2006[d]	3	3	3	1	4
RY06	Nov. 1, 2006–Apr. 30, 2007	5	3	2	0	2

[a]Record of number of pilots vs. gunners was lost, some permittees had multiple permits.
[b]Three additional wolves were taken illegally outside the control zone.
[c]Two wolves remained in the EMMA.
[d]The wolf control program was closed January 18–27, 2006 due to a court injunction.

BLACK BEAR AND BROWN BEAR CONTROL

The board approved black bear and brown bear control within the EMMA beginning in RY06. We began issuing control permits on September 1, 2006 and continued until June 30 of each regulatory year. Requirements and restrictions for the take of black and brown bears included in the Alaska Hunting Regulations apply to the permittees, except that permittees do not have an individual kill limit and they may set out 10 additional bait stations for black bears, may bait brown bears and take brown bears same-day-airborne at bait stations if the bait stations are registered with the McGrath office. In addition, hunting regulations allow permittees to bait black bears, take black bears same-day-airborne at bait stations and sell the raw hide and skull of both black and brown bears if they obtain a department sale tag and permit.

In RY06, we issued no black bear control permits or black bear control baiting permits. We issued 4 brown bear control permits, no brown bear baiting permits and no bait sites were established. No black or brown bears were reported taken. Tags and permits were issued to hunters to allow sale of hides and skulls when requested.

To date in RY07, we have issued 2 black bear control permits and 1 black bear control baiting permit and 2 sites were established by 1 of the permittees. We issued 2 brown

bear control permits, and 1 brown bear baiting permit and the permittee established 2 bait sites (the black bear and brown bear bait sites were the same). No black or brown bears were reported taken. Tags and permits were issued to hunters to allow sale of hides and skulls when requested.

Status of Prey and Predator Populations

RESEARCH COMPONENT

Prey–predator research in Unit 19D-East included the following objectives and results during March 2001–January 2008.

Objective 1a: Estimate moose numbers and population composition in Unit 19D-East.

Results of 2001 and 2003–2007 surveys indicate that the moose density within the EMMA was approximately 1.0 moose/mi^2 in 2001 and increased to approximately 1.7 moose/mi^2 in 2007 (Table 2). Moose densities in the remainder of the 19D-East moose survey area (19D-East MSA) are approximately 0.4 moose/mi^2, with no clear trend given the variability in the estimates (Table 3). The bull/cow ratio has started to increase in the EMMA as a result of the hunting closure within the area and increasing population. Moose numbers and population composition are summarized in Tables 2 and 3.

Table 2. Results of 2001–2007 moose surveys in the 528 mi^2 EMMA. Included are the actual number of moose observed, SCFs (sightability correction factor — based upon observations of radiocollared moose during the survey) calculated for each year, and the estimated number of moose in the area based upon the multiplication of observed moose and the SCF. Ratios are based only on observable moose.

Year	Area	Number of moose observed[a]	SCF	Estimate with SCF applied	Calves: 100 Cows	Bulls:100 Cows	Yearling bulls:100 cows
2001	EMMA	440	1.19 (32/38)	524	34	18	8
2003	EMMA	237	1.33 (21/28)	580[c]	55	18	5
2004	EMMA	531	1.25[b]	664	63	13	6
2005	EMMA	479	1.29 (38/49)	618	51	18	9
2006	EMMA	591	1.17 (42/49)	691	58	25	14
2007	EMMA	662	1.32 (31/41)	874	56	39	16

[a]All 87 units within the EMMA were counted in 2001, 2004, 2005, 2006, and 2007, in effect a population census. Only 52% (45) of the 87 EMMA units were counted during the 2003 survey.
[b]Sightability of radioed moose was not recorded in 2004, therefore, the SCF for 2004 is a combination of the 2001, 2003, 2005, and 2006 SCFs.
[c]In 2003 only 52% of the SUs within the EMMA were counted, and the estimate with SCF applied is based upon 1.33 x the GeoSpatial population estimate for the EMMA of 393 moose.

Table 3. Results of 2001–2004 moose surveys in the remainder of 19D-East moose survey area (MSA) (that portion of the 19D-East MSA excluding the EMMA) and combined results for the EMMA and the remainder of 19D-East MSA (19D-East MSA). No surveys were conducted in the remainder of 19D-East in 2005, 2006, or 2007.

Year	Area (mi^2)	Population estimate[a,b]	Calves:100 Cows	Bulls:100 Cows	Yearling bulls:100 cows
2001	Remainder 19D-East MSA (4,676)	1135,2005,2912	10,24,45	20,47,88	1,7,15
2003	Remainder 19D-East MSA (4,676)[c]	692,1084,1528	21,53,99	5,29,60	0,2,4
2004	Remainder 19D-East MSA (4,676)	1652,2190,2728	43,55,67	24,35,45	8,14,21
2001	19D-East MSA (5,204)	1652,2536,3469	14,25,42	19,39,66	3,7,13
2003	19D-East MSA (5,204)	1219,1664,2195	30,53,84	13,23,37	0,3,13
2004	19D-East MSA (5,204)	2287,2825,3464	47,56,66	22,30,37	7,12,17

[a]The three values given are the lower 90% confidence interval, the estimate, and the upper 90% confidence interval.
[b]Based upon radiocollared moose sightings during surveys, sightability correction factors of 1.19 and 1.33 were applied to population estimates in 2001 and 2003, respectively. Because radiocollared moose were not radiolocated during the 2004 survey, a sightability correction factor of 1.25 (a combination of the 2001 thru 2006 sightability data) was used to estimate population size in 2004.
[c]Because of poor weather conditions, only 7% (52) of the sample units in the remainder of the 19D-East MSA were surveyed, therefore, caution needs to be used when interpreting the 2003 survey results for the 19D-East MSA.

Objective 1b: Determine primary causes of mortality of moose calves.

In May 2001 we captured and radiocollared 67 newborn moose calves in Unit 19D-East, 51 of those were captured within or near the EMMA. We monitored those calves through their first year of life and investigated causes of mortality. The overall survival rate for our collared sample of calves was 26% (17 of 66 lived). We attributed 18 deaths (37%) to black bears, 17 deaths (35%) to brown bears, 12 deaths (24%) to wolves, 1 (2%) death to drowning, and 1 death (2%) to an unknown cause. The survival rate for only those calves captured within or near the EMMA was 33% (17 of 51 lived). Within the EMMA we attributed 18 deaths (53%) to black bears, 5 deaths (15%) to brown bears, 9 deaths (26%) to wolves, 1 (3%) nonpredation cause, and 1 death (3%) to an unknown cause.

In May 2002 we captured and radiocollared 81 newborn moose calves, and visually monitored an additional 4 calves, within and near the EMMA. Survival for those calves through their first year of life was 27% (22 of 85 lived). We attributed 21 deaths (33%) to black bears, 12 deaths (19%) to brown bears, 28 deaths (44%) to wolves, and 2 deaths (3%) to nonpredation cause.

In May 2003 we captured and radiocollared 53 newborn moose calves within or near the EMMA. Survival for those calves through their first year of life was 52% (26 of 53 lived, 2 calves were censored from the study in mid-summer). We attributed 8 deaths (32%) to black bears, 4 deaths (16%) to brown bears, 9 deaths (36%) to wolves, 3 deaths (12%) to nonpredation causes, and 1 death (4%) to an unknown cause.

In May 2004 we captured and radiocollared 52 newborn moose calves within or near the EMMA. Survival for those calves through their first year of life was 40% (21 of 52 lived). We attributed 3 deaths (10%) to black bears, 8 deaths (26%) to wolves, 19 deaths (61%) to nonpredation causes, and 1 death (3%) to illegal take.

In May 2005 we captured and radiocollared 50 newborn moose calves within or near the EMMA. Survival for those calves through their first year of life was 42% (21 of 50 lived). We attributed 12 deaths (41%) to black bears, 3 deaths to brown bears (10%), 3 deaths (10%) to wolves, 10 deaths (34%) to nonpredation causes, and 1 (3%) death to unknown cause.

In May 2006 we captured and radiocollared 51 newborn moose calves within or near the EMMA. Survival for those calves through their first year of life was 63% (32 of 51 lived). We attributed 6 deaths (32%) to black bears, 3 deaths to brown bears (16%), 3 deaths (16%) to wolves, 6 deaths (32%) to nonpredation causes, and 1 (5%) death to unknown cause.

In May 2007 we captured and radiocollared 51 newborn moose calves within or near the EMMA. Survival for those calves through January 2008 was 43% (22 of 51 lived). We attributed 7 deaths (24%) to black bears, 14 deaths to brown bears (48%), 5 deaths (17%) to wolves, 2 deaths (7%) to nonpredation causes, and 1 (3%) death to unknown cause.

The highest annual survival of calves was experienced by those cohorts that were born following removal of predators from the EMMA Calves from these cohorts (2003-2006) experienced considerably less early summer mortality than those from 2001 and 2002. This ultimately translated into 20% more calves on average surviving to 1 year of life following predator removal than prior to removal.*Objective 1c:* Determine condition, movements, and mortality rates of yearling and adult moose.

In March 2001 we captured 25 adult and 15 short-yearling moose within the study area. In March 2002 we captured 15 adult and 15 short-yearling moose, and in March and April 2003–2007, we captured 15 short-yearling moose each year. During processing, moose had a blood sample taken, a tooth pulled (adults only), morphometric measurements obtained, rump fat determined via ultrasound (adults only in 2001 and 2002), weight taken (yearlings only), and a radio collar affixed. These collared individuals were then monitored to determine reproductive indices and condition indices (Table 4), movements, and mortality rates.

Table 4. Reproduction and condition indices for moose in Unit 19D-East, 2001–2006.

Year	Observed rate of parturition for radiocollared cows > 2 yrs-of-age (number cows monitored)	Observed rate of parturition for radio-collared cows 3 yrs-of-age (number of cows monitored)	Observed rate of twinning for radiocollared cows > 2 yrs-of-age (n)	Observed rate of twinning for uncollared cows (n)	Average maximum adult rumpfat depth in cm (n)	Median maximum adult rumpfat depth in cm (n)
2001	73%[a] (22)	100% (3)	25% (16)	--	0.71 (25)	0.55 (25)
2002	88%[b] (25)	0% (1)	59% (22)	39% (46)	1.51 (15)	1.58 (15)
2003	84%[c] (31)	56% (9)	24% (25)	36% (39)	--	--
2004	80%[d] (40)	70% (10)	32% (31)	39% (31)	--	--
2005	92%[e] (51)	100% (11)	44% (45)	50% (40)	--	--
2006	97%[f] (62)	100% (13)	40% (60)	35% (29)	--	--
2007	95%[g] (59)	71% (7)	52% (56)	50% (30)	--	--

[a] Includes one fetal calf found during necropsy of cow in late May, and two births observed during June.
[b] Includes three births observed during June.
[c] Includes one cow considered to have given birth because placenta was observed but no calf was seen, and one birth observed during July.
[d] Includes two births observed during July.
[e] Includes five births observed during June.
[f] Includes one birth observed during June.
[g] Includes six births observed during June.

Monthly locations of study animals indicated that moose within the EMMA are relatively nonmigratory, and no discernable large-scale movement pattern was evident. However, some moose that reside in the Pitka Flats (east of the EMMA) during calving season are apparently migratory, spending spring and summer in the Pitka Flats and then moving to the Farewell Burn/Alaska Range foothills in fall and winter.

Yearling natural survival rates (legal hunter take is not included) varied from 74% to 96% annually during 2001–2007. The highest annual survival was experienced by the 2004 and 2005 cohorts which coincides with both department removal of bears from the EMMA and public wolf control efforts. We attributed the largest proportion of radio-collared yearling mortalities to wolves, with black bears and non-predation mortality accounting for some deaths. Hunters also legally harvested 4 male yearlings, 2 during 2002 and 2 during 2003.

Adult annual survival rates varied from 86% to 100% during 2001–2007. Wolves and nonpredation causes accounted for most mortality during these time periods, with illegal take and brown bears also accounting for some mortality.

Objective 1d: Determine twinning rates and age at first reproduction of moose in Unit 19D-East.

Twinning rates for radiocollared and uncollared females are listed under Objective 1c (Table 4).

We have observed three parturient radiocollared 2-year-old moose, one each during spring 2005, 2006, and 2007. Rates of parturition are listed for radiocollared 3-year-old moose in Table 4.

Objective 1e: Obtain data snow depth and density within the EMMA.

Preliminary data is summarized in Table 5.

Table 5. Monthly snow depth and average daily temperature for the McGrath Alaska airport, winter 2000–2001 through winter 2004–2005.

Depth of snow in inches on last day of month / average daily temperature (^{o}F)[a]							
Winter	October	November	December	January	February	March	April
2000–01	11 / 23.3	19 / 12.6	17 / 4.0	17 / 10.1	29 / 11.8	29 / 11.1	14 / 31.2
2001–02	7 / 21.8	8 / -4.0	10 / -12.9	32 / 4.5	22 / 5.8	21 / 14.1	5 / 25.5
2002–03	3 / 32.1	3 / 20	8 / 5.0	10 / -5.2	19 / 15.8	14 / 12.2	0 / 32.3
2003–04	0 / 32.7	12 / 13.9	16 / -9.3	18 / -14.1	21 / 6.4	20 / 8.2	0 / 35.7
2004–05	3 / 33.0	18 / 15.0	31 / -1.2	41 / -7.6	41 / -0.4	42 / 16.0	14 / 26.2
2005-06	1 / 28.6	11 / -6.3	14 / 5.2	16 / -22.3	22 / 10.9	20 / 6.5	11 / 26.1
2006-07	0 / 35.0	3 / 1.2	12 / -5.2	18 / -5.7	17 / -1.4	16 / -3.7	0 / 38.8

[a] Data obtained from the National Oceanic and Atmospheric Administration (NOAA).

Objective 2: Characterize winter moose browse in Unit 19D-East.

Browse surveys were conducted in March 2003 via helicopter and snowmobile throughout the EMMA. A total of 39 locations and 236 plants were sampled within the area. Browse biomass removal in the EMMA was 20%, which falls between the range seen in areas of high moose browse use and low moose browse use. Birch, poplar, and willow species were all present in the survey area, although willow species tend to be the most preferred winter browse species in the EMMA. This is similar to most areas in Interior Alaska.

Objective 3a: Estimate wolf numbers in Unit 19D-East and identify wolf packs that hunt moose within the EMMA.

We conducted a reconnaissance style wolf survey within the Unit 19D-East moose survey area (MSA) during February 21–February 24, 2001. During that survey, 103 wolves were estimated to occur in the 19D-East MSA, 47 of which were believed to be permanent residents in the survey area. The remainder were considered to be wolves that likely did not reside within the survey area at all times.

During March 17–19, 2005, we conducted another reconnaissance style wolf survey in Unit 19D-East, focusing primarily on the wolf control zone within Unit 19D-East (a 3,210 mi^2 area encompassing the EMMA). During that survey, we estimated 82 wolves occurred within Unit 19D-East, with 9 of those wolves occurring within the wolf control zone.

During March 14–17, 2006, we conducted a reconnaissance style wolf survey in Unit 19D-East, focusing primarily on the wolf control zone within Unit19D-East. During that

survey, we estimated 53–65 wolves occurred within the portion of Unit 19D-East we surveyed (an area slightly larger than the 19D-East MSA), with 13 of those wolves occurring within the wolf control zone.

No wolf survey was conducted during 2007.

Objective 3b: Determine reproductive rates and condition of wolves in Unit 19D and compare rates with other wolf populations in Alaska.

We purchased 25 hunter- and trapper-killed wolf carcasses for necropsy between June 2001 and July 2003. Necropsies were performed in spring 2002 and 2003. Data collected from carcasses and reproductive tracts indicate wolves from Unit 19D have normal condition parameters.

Objective 4: Document the distribution of black bear and brown bears numbers within and adjacent to the EMMA and characterize bear predation on moose calves.

In a collaborative project with Pennsylvania State University, we captured and radiocollared 20 black bears during May and June 2002 within the study area. Preliminary analysis of data obtained by monitoring these bears indicates that most black bears use riparian areas within the central portion of the study area in spring and summer and move to higher elevations in fall. Most of these bears also denned in back spruce forests near the areas where they spent time in the fall.

During May 2003, we captured and moved 81 black bears (all older than 1 year old) and 9 brown bears (including 2 cubs-of-the-year) from the EMMA and surrounding area. During May 2004 we captured and moved 34 black bears and 1 brown bear (all older than 1-year old) from the EMMA. Bears were captured using both helicopter darting and ground based snaring, and translocated using fixed-winged aircraft to areas at least 150 miles from McGrath. Of the bears captured in May 2004, 7 were black bears that had been captured and removed during 2003 and had returned to the area, indicating a low rate of return in the first year. Of the 7 recaptured bears, 6 were adult males and 1 was an adult female.

Base upon bears that were captured and moved during 2003 and 2004 and bears that were known the inhabit the EMMA during that time that were not captured, we estimated that there were approximately 95 black bears/1000km^2 (130 black bears not including cubs) in the EMMA prior to the removal project. During spring 2007 we estimated that there were 53 black bears/1000km^2 (72 black bears not including cubs) within the EMMA by using replicated mark-resight techniques. These results indicate that the black bear population is still lower than pre-removal levels, however, it is rebounding relatively quickly.

We plotted locations of the 115 black and 10 brown bears captured during 2003 and 2004. These locations best reflect the distribution and relative abundance of bears within the EMMA during the time of moose calving. Plotting these locations indicated that both black bears and brown bears (brown bears at a much lower relative density) are dispersed throughout the entire EMMA, however, both black and brown bears are concentrated

along the main riparian corridors of the Kuskokwim and Takotna rivers. This is similar to distribution of radiocollared black bears in 2002, as mentioned above. In the near future, the bear capture and observation data gathered during 2002–2004 will be used to formulate better estimates of bear density in the Upper Kuskokwim Area.

MANAGEMENT COMPONENT

Moose Population Size. In fall 2001, we estimated 3,959 moose in Unit 19D-East (0.46 moose/mi^2), based on extrapolation of a survey conducted in a 5,204 mi^2 portion of the unit. Using similar techniques in 2004, we estimated 4,374 moose in Unit 19D-East (0.5 moose/mi^2). These population estimates are well below our objective of 6,000–8,000.

Moose density was higher in the EMMA (1 moose/mi^2) in 2001 than in Unit 19D-East as a whole, and density in the EMMA increased to 1.7 moose/mi^2 by fall 2007. Calf and yearling survival in the EMMA increased during most years when bears and wolves were removed.

Moose Harvest. The RY01–RY07 average reported harvest of moose in Unit 19D-East under the registration permit system currently in place is 75 per year (range 60–98; Table 6). This harvest is well below our objective of 400–600 moose annually.

Table 6. Unit 19D-East moose registration permit hunt (RM650) results, 2001–2007.

Regulatory year	Successful	Unsuccessful	Did not hunt	Total permits issued
2001–2002	73	137	83	293
2002–2003	98	127	50	275
2003–2004	75	115	66	256
2004–2005	60	109	73	242
2005–2006	71	115	51	237
2006–2007	62	112	74	248
2007–2008	86	99	68	253

Wolf Population Size. The wolf population density was moderate, with an autumn 2000 pre-control population estimate of 198 wolves (23.3 wolves/1000 mi^2). We estimated the 2004 autumn wolf population was 103 wolves based on the spring 2005 wolf survey, RY04 wolf harvest, and estimated number of pups. No surveys were completed during winter 2006–2007 because of unsuitable survey conditions. However, we estimated the autumn 2006 population at 85–110 wolves using our PredPrey model. A survey planned for March 2007 was not completed due to poor survey conditions. We estimated the 2007 autumn wolf population was 86–114 wolves based on previous population estimates, RY06 harvest, productivity, survival and immigration.

Wolf Harvest. The effort by trappers in Unit 19D to harvest wolves has been high. Harvest ranged from 11 to 44 during RY97–RY06 (Table 7). The majority of the Unit 19D harvest has been in Unit 19D-East and has been variable within the EMMA. Pelt quality of most 19D-East wolves is low, which reduces the financial returns from the sale of hides. In RY04, one wolf from Unit 19D was confirmed as having lice. The desires of

local trappers to help reduce predation on moose and a private wolf harvest incentive program have helped to maintain a relatively high level of trapping effort.

Table 7. Reported wolf harvest in 19D, 19D-East, and EMMA; RY97–RY05. Includes wolves taken in wolf control program beginning in RY03.

Regulatory year	Wolf harvest			% 19D-East harvest in EMMA
	19D	19D-East	EMMA	
1997–1998	30	29	22	76%
1998–1999	21	14	3	21%
1999–2000	40	34	12	35%
2000–2001	37	36	17	47%
2001–2002	30	24	7	29%
2002–2003	44	39	22	56%
2003–2004	35[a]	27	7	26%
2004–2005	32[b]	29	15	52%
2005–2006	15[c]	15	7	47%
2006–2007	24[d]	19	5	21%
Total	308	266	117	38%
10-year mean	31	27	12	41%

[a] 17 of these wolves were taken in the wolf control program.
[b] 14 of these wolves were taken in the wolf control program.
[c] 4 of these wolves were taken in the wolf control program.
[d] 2 of these wolves were taken in the wolf control program.

Black and Brown Bear Population Size. In 2005, we estimated the pre-control black bear population at 1,700 in Unit 19D-East by using data from the bear removal program as well as extrapolating bear estimate data from areas with similar habitat. We estimated the brown bear pre-control population at 128 in Unit 19D-East by extrapolating brown bear data from bear removal in the EMMA, as well as extrapolating bear estimate data from areas with similar habitat.

During May 2007, we conducted an aerial black bear survey and estimated 72 independent black bears (60 – 91 95%CI) in the EMMA.

Black and Brown Bear Harvest. During RY01–RY07, 36 black bears were reported taken by the public in Unit 19D (average = 5/year). 29 of these bears were taken in Unit 19D East. As of RY03, all black bears taken in Unit 19D East were required to be sealed and since then, 21 black bears were reported harvested in 19D East, (average = 4/year; Table 8). No fall baiting permits have been issued under hunting regulations since they became available in RY01. In RY03–RY05, registration hunt permits were available for hunters to take 2 additional black bears per year in 19D-East. However, no permits were issued. In RY06, the black bear bag limit was changed from 3 to 5 under general hunting regulations. The maximum number any hunter harvested since RY01 was 2 black bears per year.

During RY01–RY07, 27 brown bears (average = 4/year) were harvested in Unit 19D, 15 of which were killed in 19D-East (average = 2.5/year). Harvest averaged 2/year prior to implementation of the brown bear resident tag fee exemption in 1998.

Table 8. Reported Black and Brown Bear harvest in Unit 19D East RY01–RY07. Sealing required in Unit 19 for all black and brown bears in Unit 19D East throughout this period.

RegulatoryYear	Black bear Hunting	Control	Brown Bear Hunting	Control
2001–02	2		4	
2002–03	6		0	
2003–04	8		1	
2004–05	3		4	
2005–06	8		2	
2006–07	1	0	4	0
2007–08[a]	1	0	0	0

[a] preliminary data

Recommendations to Achieve Plan Objectives

We recommend continuing wolf and brown bear control activities as approved by the Board.

Wolf reduction objectives have not been achieved for all of Unit 19D East for a variety of reasons, including lack of snow cover for tracking wolves and landing aircraft, dense tree cover in parts of the control area, and the high price of aircraft fuel. However, progress is being made, particularly within the EMMA, and the program should be continued to allow operations during more favorable snow conditions.

Black and brown bear reduction objectives have also not been achieved. Control methods currently authorized have not been effective, and more extreme methods such as trapping and snaring are not supported by the department. However, the bear program should continue an additional year so that a more complete evaluation can be made.

Unit 19A Wolf Predation Control Implementation Plan and Activities
Division of Wildlife Conservation Report to the Alaska Board of Game
March 2008

Background

For several years the Central Kuskokwim Fish and Game Advisory Committee expressed concern to the Board about declining moose numbers in both Units 19A and 19B. The committee submitted several regulation proposals and recommended wolf predation control to stop the decline of the moose population and boost moose numbers in the area. In response to the concerns of the advisory committee and other users, the Alaska Department of Fish and Game initiated a comprehensive planning process for the area with a citizen based planning committee composed of a broad cross-section of stakeholders in Units 19A and B wildlife management. Upon reviewing information on the moose populations the majority of the Central Kuskokwim Moose Management Planning Committee agreed:

> ***"There is a major concern that the moose populations in Units 19A and 19B will not meet the needs of local subsistence users and other consumptive users. Local observations and available scientific data indicate that the moose population has substantially declined and in some areas is very low and will continue to jeopardize subsistence and other uses."***

The Central Kuskokwim Moose Management Plan developed by the planning committee is a comprehensive plan for the area that includes a recommendation for a wolf predation control program for Units 19A and B. The control program is one component of a multifaceted plan to rebuild the moose populations in the Central Kuskokwim region. The planning committee recommended that the first priority for wolf predation control efforts should be the areas most important for providing moose for subsistence uses. Unit 19A is where the majority of subsistence moose hunting by local residents and residents of Unit 18 occurs.

A wolf control implementation plan was first adopted by the Board of Game in March 2004 for the Central Kuskokwim and consisted of Units 19A and 19B. It was approved for 5 years and began on July 1, 2004. The Board authorized the commissioner to issue public aerial shooting permits or public land and shoot permits for Unit 19A only as methods of wolf removal pursuant to AS 16.05.783. In January 2006, the Board adopted a revised implementation plan in the form of an emergency regulation. The emergency regulation limited control activities to Unit 19A to make it consistent with the Board's previous findings that implemented wolf control in Unit 19A only. Also, the emergency regulation clarified and updated key components of the plan that included: wildlife population and human use information, predator and prey population levels and objectives, plan justifications, methods and means, time frame for updates and evaluations, and miscellaneous specifications. In May 2006, the Board further modified the emergency regulation and adopted it as a final regulation. Authorization to issue

public aerial shooting permits or public land and shoot permits was reaffirmed, and the following prey and predator population estimates and population objectives were specified.

- 2006 moose population: 2,700–4,250
- Moose population objective: 7,600–9,300.
- Fall 2004 precontrol wolf population: 125–150
- Wolf population control objective: 30–36

Plan Implementation Activities

2005–2006 CONTROL PROGRAM

We conducted control activities during regulatory year (RY) 2005–2006 in Unit 19A under authority of the wolf control implementation plan adopted by the Board in March 2004 and modified in January 2006 (regulatory year begins on July 1 and ends June 30, e.g., RY05 = July 1, 2005–June 30, 2006). We received 95 applications for public wolf control permits and issued 82 permits, 30 to pilots and 52 to gunners. The control program began on December 3, 2005, and was suspended on April 4, 2006 because the wolf population was reduced to the control objective of 40–53 specified in the predator control implementation plan adopted by the Board in January 2006. It was also temporarily suspended during January 18–27, 2006 due to a court injunction. Permittees took 47 wolves, and an additional 30 wolves were taken by hunters and trappers (Table 1). All take of wolves by hunters and trappers, was also suspended on April 4, 2006.

2006–2007 CONTROL PROGRAM

We conducted control activities during RY06 in Unit 19A under authority of the wolf control implementation plan adopted by the Board in May 2006. We received 73 applications for public wolf control permits and issued 38 permits, 17 to pilots and 21 to gunners. The control program was in effect during November 1, 2006–April 30, 2007. We estimated that 9–35 wolves needed to be taken in order to reach the upper end of the control objective. Permittees took 7 wolves, and an additional 3 wolves were taken by hunters and trappers (Table 1).

Table 1. Wolf harvest and wolf control take in Unit 19A, RY01–RY06.

Regulatory Year	Hunting and Trapping Harvest	Wolf Control Take	Total Kill
2001–2002	49	-	49
2002–2003	25	-	25
2003–2004	30	-	30
2004–2005	29	43	72
2005–2006	33	47	80
2006–2007	3	7	10

2007–2008 CONTROL PROGRAM

We are conducting control activities during RY07 in Unit 19A under authority of the wolf control implementation plan adopted by the Board in May 2006. As of January 28, 2008, we had received 82 applications for public wolf control permits and issued 47 permits, 18 to pilots and 29 to gunners. The control program will be in effect during November 1, 2007–April 30, 2008 or until the wolf population is reduced to the control objective of 30–36 specified in the in the May 2006 plan. To achieve the upper end of this objective we need to remove 30–57 wolves. As of January 28, 2008, no wolves have been reported taken in Unit 19A.

Status of Prey and Predator Populations

MOOSE POPULATION

Population Composition. In November 2005, we conducted composition surveys in central Units 19A and B in the Holitna–Hoholitna drainage and in western Unit 19A in the Aniak drainage including the Kuskokwim River from Lower Kalskag to Napaimiut. In central Units 19A and B, a total of 307 moose were observed and the bull:cow ratio was 8:100 with most bulls classified as yearlings (12 of 19). The calf:cow ratio was 24:100. The low bull:cow ratios observed during this and past composition surveys indicate that hunting pressure has been high in this area. In western Unit 19A, a total of 410 moose were counted, with a bull:cow ratio of 20:100 and a calf:cow ratio of 23:100. No composition surveys were completed during November 2006 because survey conditions were unsuitable, and current data are insufficient to evaluate the effect of the wolf control program on the moose population. Composition surveys are planned for November 2007 if survey conditions are suitable.

In May 2007, we conducted twinning surveys in Unit 19A in the Aniak and Holitna River drainages. In the Aniak drainage, too few moose were located to provide for a meaningful analysis. In the Holitna River drainage, we located 71 moose, with 7 of 11 litters produced twins (64% twinning rate).

In November 2007, we conducted composition surveys in the Aniak drainage including the Kuskokwim River from Aniak to Lower Kalskag and in the Holitna drainage within the Holitna, Titnuk, and Hoholitna Rivers beginning at the southern part of the Macar Hills (labeled Kulukbuk Hills on the map) and ending approximately 10 miles south of Sleetmute. In the Aniak survey we found 122 moose, including 68 cows, 35 calves (including 6 sets of twins and one set of triplets; 51 calves:100 cows), and 28 bulls:100 cows. In the Holitna survey, we found 200 moose, including 111 cows, 50 calves (including 9 sets of twins; 45 calves:100 cows), and 35 bulls:100 cows.

Population Size. In March 2006, we estimated 2,700–4,250 moose (0.27–0.42 moose/mi^2) were present in Unit 19A. This was based upon extrapolation of population estimation surveys conducted in the entire area south of the Kuskokwim River in February 2005 (0.27 moose/mi^2 ±16%, 90% CI) and south of the Kuskokwim between

Kalskag and Crooked Creek in March 2006 (0.39 moose/mi^2 ±15%, 90%CI). The estimated population is well below the objective of 7,600–9,300 moose.

Poor survey conditions prevented a moose population estimation survey planned for March 2007. Another population estimation survey in the eastern portion of Unit 19A is planned for March 2008.

Harvest. Based upon current estimates of recruitment, population density and bull:cow ratios, there is no harvestable surplus of moose in eastern Unit 19A (upstream from and excluding the George River). The hunting season was closed in eastern Unit 19A beginning in RY06, with the exception of the Lime Village Management Area (LVMA). Hunting is currently allowed in the LVMA under a state Tier II permit during August 10–September 25 and November 20–March 31 with a bag limit of 2 bulls and under a federal community harvest system during July 1–June 30 with a quota of 28 bulls. 1 bull was reported taken during this regulatory year under the state and federal hunts.

In western Unit 19A (downstream from and including the George River), the harvestable surplus is 60 bulls. Beginning in RY06, hunting in this area was restricted to a state Tier II permit hunt with 200 permits issued and a federal permit hunt with 100 permits issued during September 1–20. The bag limit was 1 bull. Reported harvest during RY06 included 26 bulls taken by Tier II permittees and 6 bulls taken under the federal permit. During RY07, 230 Tier II and 100 federal permits were issued. Reported harvest included 54 bulls taken by Tier II permittees and 16 bulls taken under the federal permit.

WOLF POPULATION

Population Size. We conducted a complete wolf survey in Unit 19A in January and March of 2006, and estimated 107–115 wolves in 26–27 packs or approximately 1.1–1.2 wolves/100 mi^2. Sixty-seven wolves were reported killed after the survey was completed, leaving an estimated 40–48 wolves in the population when all take of wolves by control program permittees and hunters and trappers was suspended on April 4, 2006.

We conducted a complete wolf survey in Unit 19A in February 2008, and estimated 74 wolves in 17 packs or approximately 0.74 wolves/100 mi^2. As of February 8, no wolves were known to be reported killed.

Harvest. Hunting and trapping harvest over the past 6 years (RY01–RY06) averaged 28 wolves annually (Table 1). Periodically, higher harvests occurred and are probably related to effects of snow on travel in the Aniak and Holitna drainages. An additional 43, 47, and 7 wolves were taken in the wolf control program during the last 3 regulatory years, respectively.

Recommendations to Achieve Plan Objectives

We recommend continuing wolf control activities as approved by the Board.