

Emergency Regulations - 5 AAC 92.125 (b): Upper Yukon/Tanana Predation Control Area in Units 12, 20(B), 20(D), 20(E), and 25(C):

92.125 (b): Upper Yukon/Tanana predation control area in Units 12, 20(B), 20(D), 20(E), and 25(C). Notwithstanding any other provision in this title, and based on the following information contained in this section, the commissioner or the commissioner's designee may conduct a wolf population reduction or wolf population regulation program in the Upper Yukon/Tanana Wolf Control Area in Units 12, 20(B), 20(D), 20(E), and 25(C), and conduct a brown bear population reduction or brown bear population regulation program in the Upper Yukon/Tanana Brown Bear Predation Control Area in Unit 20(E):

(1) The following predation control areas are established in the upper Yukon/Tanana region of the state:

(A) an Upper Yukon/Tanana Wolf Control Area is established to increase both the Fortymile Caribou Herd (FCH) throughout its range and the moose population in Unit 12 north of the Alaska Highway and in Unit 20(E) to aid in achieving intensive management objectives; the control area includes that portion of Unit 12 north of the Alaska Highway, that portion of Unit 20(D) within the Goodpaster River drainage upstream from and including the South Fork Goodpaster River drainage, and within the Healy River, Billy Creek, and Sand Creek drainages, that portion of Unit 20(B) 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 20(E), and that portion of Unit 25(C) 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, encompassing approximately 18,750 square miles; this wolf control program does not apply to any National Park Service or National Wildlife Refuge lands unless approved by the federal agencies;

(B) an upper Yukon/Tanana Brown Bear Predation Control Area is established to increase moose numbers in central Unit 20(E) to aid in achieving intensive management objectives; the control area includes that portion of Unit 20(E) 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, encompassing approximately 4,050 square miles;

(2) the discussion of wildlife population and human use information is as follows:

(A) the prey population information is as follows:

(i) The FCH population was estimated to be 350,000–568,000 caribou in the 1920s and numbered at least 50,000 caribou during the 1950s and early 1960s, but by the early 1970s the population declined to an estimated low of 5,000 caribou; between 1974 and 1990, the FCH grew slowly to

about 23,000 caribou and remained at that level due to low calf survival until 1995; an intensive private wolf trapping effort, nonlethal wolf control, favorable weather conditions, and reduced hunting pressure enabled the population to increase to 43,375 caribou by 2003; by mid-May 2004, the population decreased to an estimated 42,000 caribou, due largely to a combination of predation and a low percentage of births in the herd during 2003 (69 percent birthrate) because of adverse summer weather in 2002; the population further declined to an estimated 39,700 caribou by early May 2005, due largely to high predation mortality among calves and adults during icing conditions and deep snow in winter 2004–2005; in the 1920s, the FCH's range encompassed approximately 85,000 square miles extending from Whitehorse, Yukon to the White Mountains north of Fairbanks; currently the FCH's range occupies only about 25 percent of this area and only a small number of Fortymile caribou move into the Yukon Territory each year; the control area corresponds to the current FCH range in Alaska;

(ii) during fall 2000–2005, calves per 100 cows averaged 28 (range 17–39);

(iii) during 2000–2005, spring birth rates averaged 85 (estimated birth rate of calves per 100 cows that were at least 36 months of age);

(iv) the estimated harvestable surplus of caribou within the control area in 2005 was 850 caribou; this is based on an annual herd harvest rate of approximately two percent of the early May population estimate of 39,700 caribou, with 25 percent of the annual harvest comprised of cows and 75 percent of the harvest comprised of bulls;

(v) the intensive management population objective established by the board for the FCH is 50,000–100,000 caribou; the intensive management harvest objective is 1,000–15,000 caribou annually;

(vi) based on available data, habitat has not been a factor limiting FCH population growth since 1995; annual birth rates of radiocollared adult cows was 85–98 percent during 1995–2005, except in 2003 (69 percent) and 2005 (77 percent), indicating the herd was in good nutritional condition during most years; annual October calf weights during the last 15 years also indicated good nutritional status, except during 2003 and 2005; reduced nutritional condition in 2003 and 2005 was likely related to adverse weather; winter samples obtained during the 1990s indicated that lichens were readily available and, therefore, winter range used by the herd was in excellent condition; in addition, most of the historic winter range not used for decades is still available and, except in burned areas, likely has abundant lichens; recent large burns in the FCH range in 2004 and 2005 likely improved the range in summer, when the diet contains predominately willows, sedges, grasses, and flowers; on burned winter ranges, lichens are reduced for decades, but caribou are well adapted to rapidly traversing vast distances, using unburned inclusions, and substituting evergreen shrubs and sedges for lichens in areas where lichens are rare; blood samples collected annually from the FCH during 1980–2003 indicate these caribou are generally healthy and there are no indications of impact from infectious diseases;

(vii) wolf predation has consistently been a major cause of death among Fortymile caribou; during nine years of detailed calf mortality

studies (May 1994–April 2003), wolves killed an average of 26 percent of radiocollared calves annually (47 percent of the usual calf mortality); during May 1991–April 2005, wolves caused 80 percent of the total adult caribou mortality;

(viii) brown bears are also important causes of mortality among Fortymile caribou; during nine years of detailed calf mortality studies (May 1994–April 2003), brown bears killed an average of 16 percent of radiocollared calves annually (28 percent annual calf mortality) and black bears killed an average of three percent of radiocollared calves annually (six percent of annual calf mortality);

(ix) the number of caribou that can be harvested from the FCH on an annual basis without causing a decline or altering its composition in a biologically unacceptable manner is less than the intensive management harvest objective set by the board;

(x) the FCH has been at low density since the 1970s; without an effective predation control program, the population will likely remain below the intensive management objective; implementation of this predation control implementation plan is expected to initiate an increase of the caribou population towards the intensive management population objective; given weather favorable to caribou, this plan is expected to result in a rate of increase similar to that observed from 1995 (22,558 caribou) to 2003 (43,375 caribou); an 8.5 percent average annual rate of increase; the rate of increase resulted in part from an intensive private wolf trapping effort (winters 1995–1996 and 1996–1997), nonlethal wolf control (110 wolves in 15 key, remote packs in early winter 1997 reduced to 27–51 wolves each spring during 2000–2003), favorable weather conditions (spring 1996–spring 2002) and reduced caribou hunting pressure (150 bulls annually during fall 1996–fall 2000); this plan provides a means of action to reach the minimum intensive management population objective of 50,000 caribou and the harvest objective of 1,000 caribou by 2012;

(xi) the moose population size in Unit 12 north of the Alaska Highway and Unit 20(E) was estimated to be 4,300–5,200 in 2004, and 4,300–5,900 in 2005; these estimates were based upon extrapolations from surveys conducted in a 4,630 square mile area of southern Unit 20(E) in 2004 and 2005 and surveys conducted within a 1,200 square mile area of the Yukon Charley Rivers Preserve in northern Unit 20(E) in 2003; no trend in population size is apparent from these surveys because confidence intervals around estimates overlap; public observations and department surveys indicate the moose density was higher (1.0–1.5 moose per square mile) in the 1960s, but has been lower (less than 1.0 moose per square mile) since the late 1970s;

(xii) based on surveys conducted in a 4,630 square mile area of southern Unit 20(E), calves and yearling bulls per 100 cows averaged 18 and 9, respectively, during fall 2000–2004; fall 2005 surveys within the same survey area indicated 23 calves per 100 cows and 11 yearling bulls per 100 cows; surveys conducted within a 1,200 square mile area of the Yukon Charley Rivers Preserve in northern Unit 20(E) during 2003, indicated 25 calves per 100 cows and six yearling bulls per 100 cows;

(xiii) estimated birth rate of moose in Unit 12 north of the Alaska Highway and Unit 20(E) is likely 110–138 calves per 100 cows two years of age or older, based on research conducted during the 1980s in Unit 20(E) and on spring twinning rate surveys conducted in southern Unit 20(E) during spring 2004 and 2005;

(xiv) based on 2004 and 2005 recruitment estimates, and using a four percent harvest rate for bulls, the harvestable surplus of moose in Unit 12 north of the Alaska Highway and Unit 20(E) was 135–201 moose;

(xv) the intensive management moose objectives established by the board in Unit 12 are for a population of 4,000–6,000 moose, with a harvest of 250–450 moose annually; the intensive management moose objectives established in Unit 20(E) are for a population of 8,000–10,000 moose, with a harvest of 500–1,000 moose annually; in Unit 12 north of the Alaska Highway and Unit 20(E) where control activities are conducted to benefit moose, the geographically proportional intensive management objectives are for a population of 8,744–11,116 moose, with a harvest of 547–1,084 moose; achieving these population and harvest objectives for this area will contribute to achieving the intensive management population and harvest objectives established for all of Units 12 and 20(E);

(xvi) based on available data, habitat is not a factor limiting moose population growth in Unit 12 north of the Alaska Highway and Unit 20(E); in southern Unit 20(E), moderate twinning rates of 30 percent and 24 percent were observed during spring surveys in 2004 and 2005, respectively; those twinning rates indicate the habitat is capable of sustaining a higher moose density; in addition, recent wildfires resulted in improved habitat conditions for moose in much of northern Unit 12 and in Unit 20(E), and fire suppression efforts are limited over most of this area; over 1,600 square miles of habitat were burned within and surrounding the control area in 2004 alone, which is expected to benefit moose productivity for decades;

(xvii) research conducted during 1981–1988 within Unit 20(E) indicates brown bear predation on calves and wolf predation on all sex and age classes throughout the year are important factors limiting moose population size and growth; in the research study area, wolves killed 12–15 percent of neonate moose calves, brown bears killed 52 percent, and black bears killed three percent; in addition, wolves and brown bears accounted for 89 percent of all yearling and adult moose mortality during the study; models developed from data collected during the research project indicated that within the research area, 81 percent of all moose mortality, within the postcalving moose population, was caused by predation, four percent and 15.5 percent of mortality was caused by hunting and all other causes, respectively; most brown bear predation occurred during the six weeks following calving, while wolf predation on all sex and age classes occurred throughout the year; due to current moose harvest restrictions, mortality from harvest by humans is likely a minor limiting factor for the moose population in the control area;

(xviii) the number of moose that can be removed from the moose population in Unit 12 north of the Alaska Highway and Unit 20(E) on an

annual basis without causing a decline in the population or altering its composition in a biologically unacceptable manner is less than the harvest objective for this area;

(xix) the moose population in Unit 12 north of the Alaska Highway and Unit 20(E) has been at a low density since the late 1970s; without an effective predation control program, moose in the control area are likely to persist in a low density dynamic equilibrium state with little expectation of increase; data from moose mortality studies, and predator and prey studies, conducted throughout Alaska and similar areas in Canada indicate that reducing the number of predators in the control area can reasonably be expected to result in an increase in the survival of moose; reducing wolf and bear predation on moose, in combination with the current restricted level of moose harvest, can reasonably be expected to initiate an increase of the moose population towards the population objective;

(B) the human use information for the prey population is as follows:

(i) the FCH has traditionally been an important subsistence resource for residents of Units 12, 20(B), 20(D), 20(E), and 25(C), including the communities of Central, Chicken, Circle, Boundary, Eagle, Eagle Village, Northway, Tanacross, Tok, and Tetlin; the FCH has also been important for other residents of interior, southcentral and southeast Alaska, as well as western Yukon Territory, Canada; the FCH's range also provides important hunting opportunities for nonresident hunters and the guiding and transporting industries;

(ii) Since at least 1976, local communities have expressed concern about chronically low FCH density and have proposed various predator control programs to increase caribou numbers and caribou harvest to meet their needs; since 1995, management actions to increase the population and restore the herd to its former range were directed by the Fortymile Caribou Herd Management Plan (1995–2000) and the Fortymile Caribou Herd Harvest Plan (2001–2006) that were approved by the board; the management plan addressed many aspects of herd management and included provisions to reduce caribou mortality by decreasing harvest and by implementing the Fortymile Nonlethal Predator Control Program; the harvest plan provided for conservative harvest management to promote continued herd growth; initially the herd responded positively, increasing to 43,375 caribou by 2003, but declined to 39,700 caribou by early May 2005; a revised Fortymile Caribou Herd Harvest Plan (2006–2012) that was endorsed by the board in March 2006 called for renewed population growth and recommended lethal wolf control;

(iii) during 1996–2000, an average of 129 caribou were harvested annually by an average of 732 resident hunters; while an average of nine caribou were harvested annually by an average of 12 nonresident hunters; during 2001–2004, an average of 731 caribou were harvested annually by an average of 2,675 resident hunters; while an average of 68 caribou were harvested by an average of 191 nonresident hunters;

(iv) without a control program, there is a low probability that the FCH will increase sufficiently to meet harvest demands in the future;

(v) moose have long been an important subsistence resource for residents of Units 12 and 20(E), including the communities of Chicken, Boundary, Eagle, Eagle Village, Tanacross, Tok, Tetlin, and Northway, and for other residents of interior, southcentral and southeast Alaska; Units 12 and 20(E) also provide important hunting opportunities for nonresident hunters and the guiding and transporting industries;

(vi) Since at least 1986, local communities have expressed concern about chronically low moose density due to predation and have proposed various predator control programs to increase moose numbers and moose harvest to meet their needs; during the February–March 2004 board meeting, the Upper Tanana/Fortymile Fish and Game Advisory Committee and the public provided testimony explaining the problem and made proposals to correct the situation, which resulted in the creation of this control program;

(vii) during 1995–2004, within Unit 12 north of the Alaska Highway and Unit 20(E), an average of 135 moose were harvested annually by an average of 593 resident hunters, while an average of 16 moose were harvested annually by an average of 66 nonresident hunters;

(viii) both resident and nonresident hunter numbers steadily increased between 1984 and 2004 in Unit 12 north of the Alaska Highway and Unit 20(E); average annual numbers of resident moose hunters increased 38 percent from 497 during 1995–1999 to 688 hunters during 2000–2004; average annual numbers of nonresident moose hunters increased 53 percent (from 42 to 89 hunters) between the same two periods; hunting pressure by both resident and nonresident moose hunters is expected to remain at current levels or continue increasing; if the control program is successful, it will help to meet harvest demand for moose in the future; without a control program, there is a very low probability that the moose population will increase sufficiently to meet demands;

(C) the predator population information is as follows:

(i) the pre-control wolf population during fall 2004 within the wolf control area was 350–410 wolves (18–22 wolves per 1,000 square miles) in 50–70 packs; this estimate was developed using information from department wolf surveys, wolf research in interior Alaska and Yukon, anecdotal observations, trapper and hunter interviews, and sealing records; during winters 2004–2005 and 2005–2006, wolves were reduced due to predation control activities in southern Unit 20(E) and northeastern Unit 12 and due to harvest by trappers; the fall 2005 wolf population estimate was 300–375 wolves (16–19 wolves per 1,000 square miles) in 50–70 packs;

(ii) during winter 2004–2005, a total of 128 wolves were reported taken in a portion of the wolf control area; of those, 58 were taken by wolf control permittees and 70 were taken by trappers and hunters;

(iii) wolf population levels in interior Alaska, including the wolf control area, are primarily dependant on prey abundance and mortality

associated with human harvest, intraspecific competition, and disease; there is no evidence that disease has contributed to significant mortality of wolves within the control area;

(iv) moose and wolf population data available for Unit 12 north of the Alaska Highway and Unit 20(E) indicated the moose-to-wolf ratio was 19:1–20:1 in fall 2004 and 24:1–27:1 in fall 2005;

(v) winter migration of the Nelchina caribou herd through northern Unit 12 and southern Unit 20(E) provides alternative prey for wolves; however, they are not consistently available because migrations into the area vary each year;

(vi) studies in Alaska and elsewhere have repeatedly concluded that large reductions are required to reduce wolf population levels and to reduce predation by wolves on their prey; research indicates a reduction of about 60–80 percent of the pre-control wolf population may be necessary to achieve prey population objectives; once the wolf population has been reduced to the population control objective, annual reductions of less than 60 percent will regulate the wolf population at the control objective; the wolf population control objective for the wolf control area is 88–103 wolves, in order to achieve a reduction of between 60–80 percent of the pre-control minimum estimated wolf population of 350 wolves; the minimum wolf population control objective will achieve the desired reduction in wolf predation, and also ensure that wolves persist within the control area;

(vii) the FCH population is well below historical levels; the moose population in Unit 12 north of the Alaska Highway and Unit 20(E) is in a low density dynamic equilibrium state and numbers are likely to fluctuate at low levels indefinitely; if wolf predation control efforts continue under this plan and the wolf population is reduced according to the wolf population and harvest objectives, the wolf population within the control area will be maintained at reduced levels (88–103 wolves) for several years; once the caribou and moose populations increase and wolf control efforts are discontinued, the wolf population will increase in response to the increased prey base;

(viii) the pre-control brown bear population within the brown bear predation control area was estimated to be 170 bears in June 2004; it was based on extrapolation of a density estimate obtained in central Unit 20(E), including the entire 4,050 square mile bear predation control area, during 1986 and on intensive research studies conducted in similar habitats with similar bear food resources during 1981–1998 in Unit 20(A), 100 miles to the west; this estimate very nearly reflects the habitat limitations for brown bears within the brown bear predation control area, because the brown bear population is only lightly harvested; a DNA-based mark-recapture study of brown bear numbers in a 2005-square mile portion of the bear predation control area resulted in an estimate of 111–189 bears in the entire 4,050 square mile bear predation control area in 2006;

(ix) during 1995–2004, the average annual brown bear harvest within the brown bear predation control area was eight bears (range 2–12); during the first year of the control program (January–December 2005), a

total of nine brown bears were taken from the bear predation control area; three of these bears were taken by control program permittees and six were taken by hunters under state hunting regulations;

(x) based on research data in Alaska and Canada, a 60 percent reduction in the brown bear population within the 4,050 square mile brown bear predation control area specified in this program is expected to result in an increase in moose survival; to achieve the desired reduction in brown bear predation, but ensure that brown bears persist within the predation control area, the minimum brown bear population objective for the predation control area is 68 bears, which represents a 60 percent reduction from the pre-control minimum estimated brown bear population of 170 bears; if brown bear predation control efforts are successful and the brown bear population is reduced according to the objectives, the brown bear population will be maintained near the minimum population objective of 68 bears for several years;

(D) the human use information for the predator population is as follows:

(i) total reported annual harvest of wolves in the wolf control area by both hunters and trappers during 1994–2004 averaged 74 wolves annually (range 39–141), well below levels required to significantly reduce the population; during the winter of 2004–2005, a total of 128 wolves were reported taken in the wolf control area; of those, 58 were killed by wolf control permittees and 70 were harvested by trappers and hunters under state trapping and hunting regulations;

(ii) total reported annual harvest of brown bears by hunters in the brown bear predation control area during 1994–2004 averaged eight bears (range 2–12); during the spring and fall 2005, a total of nine bears were reported taken in the predation control area; of those, three were taken in the brown bear predation control program and six were taken by hunters under state hunting regulations;

(iii) the human population in the upper Yukon/Tanana predation control area is concentrated along the Alaska Highway in Unit 12 on the south border of the control area and along the Taylor Highway in Unit 20(E), and along the Steese Highway in Units 20(B) and 25(C); there are large portions of the control area that are remote and difficult to access; in addition, the low price of wolf pelts, high cost of caring for brown bear hides, and high cost of fuel make it difficult for local residents to harvest a high number of wolves and brown bears;

(3) predator and prey population levels and population objectives and the basis for those objectives are as follows:

(A) the estimated FCH population during late June 2005 was 40,000–42,000 caribou; the FCH intensive management population objective is 50,000–100,000 caribou; this objective was based on historical information about caribou numbers, habitat limitations, sustainable harvest levels, and human use;

(B) the estimated moose population in Unit 12 north of the Alaska Highway and Unit 20(E) during fall 2005 was 4,300–5,900 moose; the proportional intensive management moose population objective for this area is

8,744–11,116 moose; this objective was based on historical information about moose numbers, habitat limitations, sustainable harvest levels, and human use;

(C) the pre-control (fall 2004) estimated wolf population in the wolf control area was 350–410 wolves; studies in Alaska and elsewhere have repeatedly concluded that large, annual reductions of wolves are required to diminish wolf population levels and predation by wolves on their prey; consistent with scientific studies and department experience, the objective of this plan is to reduce the pre-control wolf population within the control area by 60–80 percent; this plan also has as a goal to maintain wolves as part of the natural ecosystem within the control area; to achieve the desired reduction in wolf predation, but ensure that wolves persist within the control area, the wolf population in the control area will be reduced to no fewer than 88–103 wolves;

(D) the pre-control estimated brown bear population in the brown bear control area was 170 bears in 2004; consistent with studies in Alaska and elsewhere, the objective of this plan is to reduce pre-control brown bear numbers by approximately 60 percent to diminish bear population levels and predation by bears on their prey; this plan includes a goal to maintain brown bears as part of the natural ecosystem within the predation control area; to achieve the desired reduction in brown bear predation, and ensure that brown bears persist within the predation control area, the brown bear population in the predation control area will be reduced to no fewer than 68 bears;

(4) justifications for the predator control implementation plan are as follows:

(A) the estimated population of the FCH in the wolf control area in late-June 2005 was 40,000–42,000 caribou; the harvestable surplus of caribou in the control area is estimated at 850 caribou and is not sufficient to meet the intensive management harvest objective; the caribou population and harvest objectives for the control area are not being met because growth of the FCH has stopped; research has shown that wolf and brown bear predation are the primary causes of FCH mortality and the primary factors limiting FCH population growth in the control area;

(B) the estimated density of moose in Unit 12 north of the Alaska Highway and Unit 20(E) in 2005 was 0.5–0.6 moose per square mile, with a population of 4,300–5,900 moose; the harvestable surplus of moose in the area is estimated at 170–240 moose and is not sufficient to meet the intensive management harvest objective; the moose population and harvest objectives for the area are not being met because mortality has equaled or exceeded recruitment and moose are currently at low densities; research has shown that wolf and brown bear predation are the primary causes of moose mortality and hence the primary factors limiting moose population growth in the area;

(C) predation rates on the FCH by wolves are affected by the availability of caribou, snow depth, number of alternate prey, and other local factors; based on research conducted on the FCH during 1994–2005, wolves accounted for an average of 70 percent of adult and 43 percent of calf mortality annually during this period; based on this research 4,500 FCH adult and 5,900

FCH calf caribou were likely killed by wolves between mid-May 2004 and mid-May 2005, within the wolf control area;

(D) kill rates by wolves on moose are affected by the availability of moose, snow depth, number of alternate prey, size of wolf packs, and other local factors; in Alaska and Canada where moose are the primary prey of wolves, documented kill rates ranged from four to seven moose per wolf per winter (October 1–April 30);

(E) based on research conducted on the FCH during 1994–2005, brown bears accounted for an average of nine percent of adult and 31 percent of calf mortality annually during this period; therefore, an estimated 850 adult and 4,450 calf caribou were likely killed by brown bears between mid-May 2004–mid-May 2005, within the upper Yukon/Tanana predation control area;

(F) research conducted during 1981–1988 in a 3,750 square mile area within Unit 12 north of the Alaska Highway and Unit 20(E) showed that brown bears accounted for 36 percent of adult and 52 percent of calf moose mortality annually;

(G) reducing wolf numbers through a wolf predation control program within the wolf control area, combined with maintaining a restrictive caribou harvest, is the approach most likely to result in continued recovery of the FCH; wolf harvest through hunting and trapping efforts has not resulted in an adequate reduction in the wolf population to allow the FCH to continue growing toward the intensive management objective; public information and education programs have been implemented to improve understanding of the biological effect of predation on caribou and the potential benefits to the FCH of increasing harvest of wolves; education should help increase harvest to a limited degree in the long-term, but is not expected to result in a significant increase in the caribou population in the short-term; the FCH harvest was restricted to no more than 150 bulls during 1996–2000 and has been restricted to 850–950 caribou, with no more than 25 percent cows, during 2001–2005;

(H) reducing wolf and brown bear numbers within Unit 12 north of the Alaska Highway and Unit 20(E) through a wolf and brown bear predation control program, combined with maintaining a restrictive moose harvest, is the approach most likely to succeed in a recovery of the moose population; wolf and brown bear harvest through hunting and trapping efforts has not resulted in an adequate reduction in the wolf and brown bear populations to allow the moose population to grow toward the intensive management objective; waiver of the \$25 brown bear tag requirement in Unit 20(E), outside of the Yukon Charley Preserve, has not resulted in a measurable increase in the brown bear harvest; public information and education programs have been implemented in Units 12 and 20(E) to improve understanding of the biological effect of predation on moose and the potential benefits to the moose population of increasing harvest of wolves and bears; education should help increase harvest to a limited degree in the long-term, but is not expected to result in a significant increase in the moose population in the short-term; in 2001, the Unit 12 and 20(E) moose seasons within the majority of each unit were restricted from a 14-day August spike-fork and 15-day September any-bull moose season, to a five-day any-bull August and

a 10-day any-bull September season; these changes excluded the Labor Day weekend and a portion of September when bull moose are relatively vulnerable to harvest; in addition, a registration permit system for most of Unit 20(E) was established in the same year;

(I) presently known alternatives to predator control for reducing the number of predators are ineffective, impractical, or uneconomical in the control area; hunting and trapping conducted under authority of ordinary hunting and trapping seasons and bag limits is not an effective reduction technique in sparsely populated areas such as the upper Yukon/Tanana predation control area; numbers of hunters and trappers are relatively low and educational programs to stimulate interest and improve skills in taking wolves and brown bears have been unsuccessful because of the inherent wariness of wolves and brown bears, difficult access, relatively poor wolf pelt prices, and the expense of preparing brown bear hides as a trophy; application of the most common sterilization techniques (surgery, implants, or inoculation) are not effective reduction techniques because they require immobilization of individual predators, which is extremely expensive in remote areas; relocation of wolves and brown bears is impractical because it is expensive, and it is very difficult to find publicly acceptable places to relocate wolves and brown bears; although habitat manipulation may sometimes improve moose birth rates, research indicates that inadequate moose survival rates, not birth rates, are the primary factor limiting moose population growth in rural areas of interior Alaska; diversionary feeding of wolves and bears as an alternative to predator control has improved moose calf survival in two experiments; however, large numbers of moose carcasses are not available for this kind of effort and transporting them to remote areas of Alaska is not practical; stocking of moose is impractical because of capturing and moving expenses; thus, the alternatives to a wolf and brown bear predation control program are not likely to be effective in achieving the desired level of predator removal or are not economically feasible;

(J) without an effective predation control program, the wolf and brown bear reduction objectives cannot be achieved; therefore, the FCH is likely to persist below the intensive management population objective with little expectation of increase, and moose in Unit 12 north of the Alaska Highway and Unit 20(E) are likely to persist in a low density dynamic equilibrium state with little expectation of substantial increase; data from caribou and moose mortality studies, and predator and prey studies, conducted in Alaska, including research conducted in portions of the control areas, and similar areas in Canada indicate that reducing the number of wolves and brown bears can reasonably be expected to increase the survival of caribou and moose; reducing predation on caribou and moose, combined with a conservative harvest, can reasonably be expected to initiate an increase in the populations; aerial wolf predation control and liberalized methods for taking brown bears make it possible to increase take of these predators over large portions of the control areas;

(5) the permissible methods and means used to take predators are as follows:

(A) hunting and trapping of wolves by the public in the control area during the term of the control program may occur as provided in the hunting and trapping regulations set out elsewhere in this title, including use of motorized vehicles as provided in 5 AAC 92.080;

(B) the commissioner may issue public aerial shooting permits or public land and shoot permits as a method of wolf removal under AS 16.05.783;

(C) the commissioner may reduce the brown bear population within the brown bear predation control area by means and direction included in the Board of Game Bear Conservation and Management Policy (2006-164-BOG), dated May 14, 2006, and incorporated by reference;

(6) the anticipated time frame and schedule for update and reevaluation are as follows:

(A) for up to five years beginning on January 1, 2005, the commissioner may reduce the wolf and brown bear populations in the upper Yukon/Tanana predation control area;

(B) annually, the department shall, to the extent practicable, provide to the board at the board's spring board meeting a report of program activities conducted during the preceding 12 months, including implementation activities, the status of moose, caribou, wolf and brown bear populations, and recommendations for changes, if necessary, to achieve the objectives of the plan;

(7) other specifications that the board considers necessary:

(A) the commissioner shall suspend wolf control activities
(i) when wolf inventories or accumulated information from permittees indicate the need to avoid reducing wolf numbers below the management objective of 88–103 wolves specified in this section;

(ii) when spring conditions deteriorate to make wolf control activities infeasible; or

(iii) no later than April 30 during any regulatory year;

(B) the commissioner shall suspend brown bear control activities
(i) when extrapolated population estimates for brown bear or accumulated information from permittees indicate the need to avoid reducing brown bear numbers below the management objective of 68 bears specified in this section; or

(ii) no later than June 30 during any regulatory year;

(C) wolf and brown bear control activities will be terminated
(i) when prey population management objectives are attained; or

(ii) upon expiration of the period during which the commissioner is authorized to reduce predator numbers in the predator control plan area;

(D) the commissioner will annually close wolf hunting and trapping seasons, and brown bear hunting seasons, as appropriate to ensure that the minimum wolf and brown bear population objectives are met.