COLORADO PARKS and WILDLIFE COMMISSION POLICY

Title: **Prohibition of Diversionary or Supplemental Feeding of Black Bears**
Effective Date: September 12, 2013

STATUTORY AUTHORIZATION

33-1-101 Legislative Declaration. (1) "It is the policy of the state of Colorado that the wildlife and their environment are to be protected, preserved, enhanced, and managed for the use, benefit, and enjoyment of the people of this state and its visitors. It is further declared to be the policy of this state that there shall be provided a comprehensive program designed to offer the greatest possible variety of wildlife-related recreational opportunity to the people of this state and it visitors and that, to carry out such program and policy, there shall be a continuous operation of planning, acquisition, and development of wildlife habitats and facilities for wildlife-related opportunities."

33-1-104 (2) C.R.S. authorizes the Parks and Wildlife Commission to set objectives that enable the Division of Parks and Wildlife to develop, manage and maintain sound hunting, fishing and other wildlife-related recreational programs with a focus on a multiple-use concept of management.

POLICY STATEMENT

Black bear populations will be managed on the basis of natural forage availability without recourse to diversionary or supplemental feeding in all circumstances, excluding agency-approved research.

IMPLEMENTATION

When natural food failures occur, black bears become increasingly mobile and persistent in their search for food, which increases the likelihood of them encountering and exploiting human food sources. These behaviors result in conflicts with humans, which increases mortality in bears.

When severe human-bear conflicts arise as the result of catastrophic natural forage failure, Colorado Parks and Wildlife will respond aggressively with public information about how to minimize conflicts and will specifically consider impacts to agricultural producers. CPW may trap, translocate, aversively condition, or euthanize individual bears per Administrative Directive W-2. Diversionary or supplemental feeding will not be used to mitigate catastrophic natural forage failures or severe human bear conflicts.

Periodic local natural food failures and related human conflicts will be considered, but will not be used as the sole justification, for increases in black bear harvest to reduce population levels. Adjustments to black bear populations will be effected through public processes in developing or revising existing black bear management plans, which consider conservation of populations, habitat quality, levels of game damage and levels of human conflicts.

APPENDIX A

This appendix provides extensive background information pertaining to the proposed new Commission policy prohibiting supplemental or diversionary feeding of black bears. Catastrophic natural forage failures result in increased human conflicts because bears are seeking other food sources to meet their energy demands. Citizens become concerned when natural forage failures stress bear populations and as a result the agency receives requests to feed black bears to ameliorate the effects of the natural forage loss, similar to CPW winter feeding efforts for big game. It is an unfortunate fact that when bears access human food sources they become food-conditioned and/or habituated which increases risks to public safety. A policy prohibiting supplemental or diversionary feeding of black bears, supported with defensible ecological and behavioral justifications, provides support for wildlife managers and information to publics and media about human conflicts and why feeding bears, deliberately or unintentionally, is unacceptable. In general, any action which results in habituation of bears to food and the consequent reduction in wariness of humans is harmful to both bears and people. As a result, staff is proposing the attached policy prohibiting diversionary or supplemental feeding of black bears.

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DISCUSSION:

Black bears are large, adaptable long-lived omnivores that have evolved to depend on a wide variety of naturally available food sources. Black bear populations have evolved to be resilient to periods of natural food failures through relatively long lives and the ability of adult females to delay or retard reproductive success in exchange for survival. Since natural food failures typically occur at certain elevations or in localized areas these adaptations allow for a geographic distribution in the population impacts of natural food failure. Population impacts are also buffered by the mobile nature of dispersing sub-adults.

When natural food failures occur, black bears become increasingly mobile and persistent in their search for food, which increases the likelihood of them encountering and exploiting anthropogenic food sources. These behaviors result in conflicts with humans, which increases mortality in bears. Access to anthropogenic food sources increases food-conditioning and/or habituation of bears to human activities which often increases risks to public safety. Exploitation of relatively small amounts of anthropogenic food sources also has been shown to increase bear reproductive success, but not overall survival. The net result of these competing factors complicates CPW's ability to manage black bear populations in balance with natural forage availability and human tolerance of bear presence and abundance.

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When severe human-bear conflicts arise as the result of catastrophic natural forage failure, Colorado Parks and Wildlife will respond aggressively with public information about how to minimize conflicts and will specifically consider impacts to agricultural producers. CPW may trap, translocate, aversively condition, or euthanize individual bears per Administrative Directive W-2. Diversionary or supplemental feeding will not be used to mitigate catastrophic natural forage failures or severe human bear conflicts. Diversionary or supplemental feeding of black bears is contradictory to the regulations that prohibit artificial feeding of wildlife generally and black bears specifically, as well as agency's policy of encouraging individual responsibility and cooperation in controlling black bear access to anthropogenic food.

Definitions and Legal References

***Diversionary Feeding*:** a planned management action for limited periods of time to provide alternative foods or to relocate existing food items and intended to attract bears away from potential locations or situations where they can come into conflict with humans.

Food-conditioning: form of operant conditioning in which bears learn to associate sources of food with humans or their infrastructure.

Habituation: type of learning in which bear no longer responds to presence of a stimulus; "learned indifference."

***Supplemental feeding*:** intentionally placing natural or artificial food in the natural environment for use by bears on an annual, seasonal, or emergency basis to provide additional nutrition or make up for natural food shortages. The intent is to prevent starvation, increase reproduction, improve condition of individual bears, or conserve vulnerable bear populations.

***Legal References*:** The Parks and Wildlife Commission regulates activities that result in providing anthropogenic food to bears (*PWC Regulation #021-D – Feeding or Attracting Wildlife*). The Commission has Policy related to supplemental feeding of big game ungulates (*Emergency Winter Feeding and Baiting of Big Game Ungulates*). State statute prohibits knowingly luring bears with food or edible waste (C.R.S. §33-6-131).

Background: Social, Ecological, and Behavioral Considerations for Policy Development

Many citizens become concerned when natural forage failures stress bear populations. Catastrophic natural forage failures result in considerable local increases in human conflicts with bears seeking anthropogenic food sources. During these events the agency receives inquiries as to why we do not feed black bears to ameliorate the effects of the natural forage loss. These inquiries often refer to exceptions in statute, regulation and policy that provide for the supplemental feeding of deer, elk, or antelope in severe winters. It is because black bear ecology

and behavior is significantly different from the ecology and behavior of big game ungulates that CPW avoids feeding bears.

A policy on feeding black bear will not prevent pressure on CPW to feed bears in severe conflict years. However, a policy backed by defensible ecological and behavioral justification will provide substantial support for wildlife managers and will provide information to publics and media about human conflicts and why feeding bears, deliberately or unintentionally, is an unsound practice.

There are two different objectives in citizen proposals to feed black bears. One objective is to protect the lives of individual bears or to protect bear populations. The other objective is to reduce or eliminate bear-human conflicts. Understanding the natural feeding patterns of black bears is necessary to assess the practicality of accomplishing these objectives and the likely consequences of artificial feeding.

Black bears have a basic carnivore digestive system, characterized by having high pass-through rates and relatively low digestibility of plant parts. Bears lose weight throughout hibernation and when they emerge, forage is dominated primarily by vegetation. Black bears compensate by eating large amounts of vegetative matter and selecting for the most nutritious and digestible parts of plants when possible. When feeding on grass or forbs, black bears select the newest growth and flowers to maximize digestibility. Nevertheless, this period of feeding on grass and forbs produces a net deficit of calories, resulting in black bears continuing to lose weight during spring and into about mid-summer. The two primary causes of spring-summer food failure for black bears are lack of moisture and early blooming of plants. Lack of moisture causes succulent green plants to dry up, becoming less digestible and lower in abundance. A warm, early spring causes plants to grow, flower and set seed earlier than normal. Once seed set occurs, plant digestibility is very low. In this kind of year, forbs may be abundant in volume, but low in nutritional value.

The most critical feeding period for bears is late summer and fall, when highly nutritious berries and acorns ripen and bears are preparing for hibernation. The primary cause of fall food failure is damaging frost during the flowering stage of berries and oakbrush. During the fall, the daily activity of black bears changes, with individuals feeding for up to 20 hours per day. The timing of this "hyperphagic" period is keyed to the ecology of local fruit-producing plants. A bear can eat a prodigious amount of food, up to 20-30 pounds per day. When food is abundant, weight gains of 3-5 pounds per day are possible. This amounts to a lot of berries: 20,000-30,000 per day (chokecherries average 1,070 berries per pound). Black bears may make seasonal migrations of between 20 and 30 miles to obtain fall foods, as the areas with abundant berries and acorns are spatially separate from the spring-summer feeding areas. In fall, nearly all nutrient intake is converted into fat deposition, because fat provides the only energy source for maintenance of bodily functions during hibernation and for lactation for newborn cubs in the den.

Food failure impacts to black bear population welfare

Black bear populations have evolved with periodic food failures and are resilient to infrequent events. They are relatively immune to annual changes because of their long lives (20-25 years),

delayed maturity (four to six years), high adult survival of females (>90%), and infrequent litters (only 40% of adult females give birth each year). Short-term consequences of food failures primarily affect cubs and yearlings. Cubs born in years of extreme fall food failures will suffer higher-than-average mortality in the den or soon after den emergence in the spring. Yearlings also suffer higher-than-average mortality in the den or soon after emergence in the spring. Sub-adult females that survive poor food years often delay onset of reproduction until they are older and larger. Population modeling indicates that massive food failures at a frequency of one or two per decade have little or no effect on population size. Adult females that lose a litter or reabsorb blastocysts prior to implantation will cycle back into reproductive receptivity the next year. With a 40% pregnancy rate of adult female black bears, each adult female may produce four litters over a 10-year period. A one-year delay may change the timing of a sow's litters, but will have little impact on her lifetime productivity. If failures occur more frequently in local areas, hunter harvest should be closely monitored to look for increases in adult females in the hunter kill. Such increases warrant more conservative harvests if the management goal is to maintain or allow an increase in the population. Regardless, periodic food failures are not a threat to the long-term presence of bears in Colorado.

Even though the welfare of a bear population may not be threatened, some interests will focus on a humanitarian appeal, to feed bears to increase survival of individual cubs and yearlings. Ironically, a feeding program intended to increase survival in these age classes may in fact increase their mortality. Given the nature and behavior of bears during hyperphagia, it would be impossible to implement a feeding program to specifically benefit cubs and yearlings. Any supplemental feeding will eventually attract a large portion of the adult bears. Such aggregations are risky places for young bears because of intraspecific aggression (i.e., cannibalism). As a result, adult females are often reluctant to bring cubs into such areas and when they do cubs are typically sent up trees for protection. This would allow the mother to feed but not the cubs. Larger bears would consume most of the food. Thus, you would have to feed a large amount to get to the few individuals that you wanted to help. More importantly, the short-term gains, if any, would be negated by the long-term problem of habituation and food-conditioning, leading to human conflict and ultimately mortality of the bear. Cubs and yearlings are the easiest to habituate and the least likely to benefit from artificial feeding. Any feeding program is likely to result in bears with a propensity to seek out supplemental food sources again at some point in the future.

Food failure impacts on human-bear conflicts

Black bears are naturally wary of humans; but they are also driven to find large amounts of nutritious, highly digestible natural food in the fall. However, high-calorie food is nearly always available around human habitations. In normal food years, the wariness of bears keeps most bears foraging away from habitations. Those bears less wary, or those that are habituated to human presence, will still forage around houses and camps even in good food years, since the benefit in terms of food is excellent. However, in food failure years, the bear’s natural wariness of humans succumbs to its need for large quantities of food. In these situations, the number of human-bear conflicts escalates dramatically, as does the amount of property damage caused by bears along with increasing mortality of bears. Recent years have seen increasing levels of human-bear conflicts along with increasing incidents involving injuries to humans. Injuries to

humans by bears are strongly associated with food-conditioned or habituated bears. CPW policy regarding bear conflicts seeks to eliminate bears access to human and livestock foods as the first line of defense. This policy must be consistent in all years since once a black bear learns of a food source, they rarely forget it and successful feeding around humans leads to habituation and food-conditioning.

Citizens often advocate supplemental feeding of black bears in areas distant from human habitation in hopes of keeping bears "away from conflicts." Such an approach is harmful to both bears and humans.

Feeding of bears will contribute to bears becoming less wary of humans. In a review of bear populations throughout Europe, researchers concluded that access to human-derived food was the principal factor in loss of wariness among brown bears. The presence or absence of hunting was not a factor. North American experiences in National Parks and open garbage dumps provide ample evidence that black bears can be attracted to artificial food sources. Such unnatural scenes resulted in changes in bear behaviors and a lessening of respect for bears by humans.

There have been programs of supplemental feeding of black bears on industrial forest land in Washington. The goal of that program is to minimize black bear feeding on tree cambium in the spring, which kills the tree. Coniferous forests in this area have little forb or grass understory so spring food is quite limited. The program is most successful at reducing tree deaths in local areas suffering high damage from a low-density bear population. As damage becomes more dispersed or the bear population density increases, the effectiveness of the supplemental food program declines. Even though the supplemental food is provided ad libitum (the amount needed to meet their entire energy demand), all black bears studied also foraged away from the feeders. Not all bears used the feeders and the amount of time spent at feeders was quite variable, so it is improbable that all bears and, in particular, young bears will be “diverted” by feeding.

CPW believes that a feeding program would not reduce bear-human conflicts but would carry the risk of making conflicts more common over time. First, any feeding program will result in black bear losing wariness of humans. Humans will necessarily travel to and from the feed sites and human scent will invariably be on the food and around the site. Black bears have a tremendously acute sense of smell. The bears know these concentrated feed sites are not natural and they will know that humans bring the food. In times of food stress, bears readily trade off wariness for energy. The more times this happens without a negative consequence to the bear, the less a bear will be concerned with the presence or actions of a human. A human-habituated bear will likely cause conflicts with people until it is killed.

Second, such feeding sites will **only** attract black bears if placed into natural habitats where the bear has learned to travel. Thus, in mid-August, black bears in much of Colorado move to low elevation regions where gambel oak, chokecherries, serviceberry and piñon pine are dominant. Placing food at high- elevation sites will not stop bears from undertaking seasonal movements. They make these moves each year even when food is still abundant on summer areas. So the feeding sites have to be mixed in with the natural fall foraging habitats. These lower-elevation

sites are also where the bear-human conflicts have been occurring. Black bears will naturally still attempt normal foraging even if abundant food is provided. In wild situations, black bears will feed until their stomach is full, and then wander in search of new feeding areas. The fast passage of food through their digestive system means that bears must search for food often. Bears do not stay at a single berry or acorn site until all the food is exhausted. They fill up, move on, and perhaps come back. Thus many bears use each site and the bears are constantly mobile. Such mobile bears will still contact human habitations and while their hunger may be less than without the artificial food, their wariness has also decreased.

Currently CPW manages human bear conflicts to keep these interactions socially tolerable in the average years, knowing that the fall food failure years will be very stressful for both bears and people. Even if feeding were to reduce the number of conflicts in the bad years, there is ample evidence from Colorado and other western States and Provinces that habituation would lead to an increase in conflicts during the average years. More important than the property damage levels is the safety of humans. The evidence is very strong: food-conditioned black bears are dangerous and prone to injure people. The long-term consequences greatly outweigh any potential short-term gains.

Other issues/ problems with diversionary or supplemental feeding

Once you begin a feeding program black bears will quickly make the feed stations part of their "habitat". They will return the following year, and the year after. Black bears can regularly forage for 5-10 mile distances during a single day. Colorado has few remaining places in fall bear habitat so isolated that less wary, artificially fed bears will not wander to nearby human habitations. Feeding sites will cause locally high bear densities. Human access to these areas would need to be carefully controlled. There would be a strong advocacy to allow humans access for viewing. This would further contribute to habituation. Feeding would have to continue throughout most of September, which is our fall bear hunting season. Colorado Statutes prohibit the use of bait for bear hunting. This poses an immediate conflict for hunters, either knowingly or unknowingly, hunting at or near feeding sites. Liability issues seem obvious but would be largely unresolved until someone is injured or killed by a bear. And, while those liability issues seem obvious if someone is harmed or killed by a bear near a feeding site, given the foregoing information the question could be raised regardless of location.

There is ample evidence that artificial feeding programs alter the behavior of wild bears, and current CPW policy is firmly rooted in the notion to ‘Keep Wild Bears Wild’. The last four decades have seen significant change in how the general public, hunters, and wildlife managers perceive black bears. These changes have succeeded due to a committed effort to elevate the status of black bears. Any action, which results in greater habituation of bears and the consequent reduction in wariness of humans, is harmful to both bears and people in the long term.