

Environmental Consequences-Alternative D with alternative implementation techniques

Elk (page 157-158)

The long-term benefits of reducing the population of elk would be similar to other action alternatives. The Boland Ridge may experience more noticeable benefits from initial reduction. As with other alternatives, benefits to the population structure compared to no action from reductions in density dependent physiological changes and increased calf:cow ratio would occur. Selective shooting during maintenance would also allow park managers to attain the most natural bull:cow ratio and age distribution, a benefit to herd structure. Long-term beneficial increases in calf survival and recruitment and in increases in adult survival relative to no action would occur from reducing herd numbers and density. Improved body condition and survivability for cow elk, calves and older elk are possible, resulting in beneficial effects. Selective removals during maintenance could also affect age and sex structure and survival rate herd wide, with negligible to moderate, adverse or beneficial impacts. The use of noise-suppressed rifles would eliminate or limit stress-related behavior or changes in movements and distribution. If changes do occur, they would be in keeping with natural elk behavior, a beneficial change relative to no action. Helicopters would result in short-term minor adverse impacts to elk distribution and behavior. In the long term, reductions in density would improve access to forage and lower energy used to compete for it, a benefit for elk health and survivability. Benefits to elk health inside and outside the park from reductions in the risk of transmitting CWD would occur relative to no action.

Fencing and past predator elimination have changed distribution and herd size with adverse cumulative effects. Additional adverse cumulative effects from CWD on the former elk ranch adjacent to the park may have occurred; if so, they could be offset somewhat by depopulation of the infected herd and by hunter harvest. Beneficial cumulative impacts include habitat enhancement, hunting and herbivore management.

Using helicopters to remove elk carcasses was going to cause a temporary disturbance of the elk remaining in the vicinity of the carcasses; a short-term, minor adverse impact. Replacing helicopters with ATV/UTV use may still cause a temporary disturbance to the elk remaining in the area, but it will be no more damaging/possibly less disturbance than the original consideration. Therefore, it is unlikely there will be more impact to the elk population than envisioned in the EIS.

Soils and Water Quality (page 176)

Beneficial impacts to soils for the duration of the plan from elevated nutrient levels associated with leaving carcasses in the field would occur. Washing these nutrients or bacteria into nearby streams would result in negligible to moderate, short-term localized adverse impacts to water quality. Negligible to minor impacts to soils and groundwater surrounding landfill sites where ash from incineration or CWD positive carcasses would be disposed, as well as to soils inside the park where incineration takes place are possible. In the long term, reductions in elk numbers could have benefits to water quality and to physical properties of soils, as well as moderate adverse impacts to the chemical makeup of soil through lower nutrient levels.

Cumulative benefits to soil chemical make-up from wildlife and prescribed burning are possible, and cumulative adverse impacts to its physical properties from development, other ungulates and bison roundups likely occur. Logging and wildlife management activities may have increased sedimentation in Highland Creek, which may be offset by prescribed burning in the park. Upstream livestock ranching or faulty septic systems may be responsible for increased fecal coliform bacteria in Beaver Creek.

Under Alternative D, elk carcasses would have been removed via helicopter (for the most part). This alternative did allow for carcasses to be left in place if they are very difficult to remove or if wildlife managers believed their natural breakdown is environmentally preferred or accepted. Using the proposed methods for this cull, elk carcasses will still be removed from the field (for the most part). There may be instances where limited elk parts will remain in the field (likely only stomach contents). This impact will be the same as previously analyzed.

For carcasses removed using ATV/UTV instead of helicopter, best management practices will be followed. Short-term, negligible to minor impacts to soils may occur with ATV/UTV use during dry conditions, but no impacts are expected when the ground is frozen. Previous projects utilizing ATV/UTVs have confirmed that any impacts from their use are short term. Previous ATV/UTV use following best management practices has not created soil erosion.

ATV/UTV use will not involve the crossing of any streams, wetlands, seeps, or springs. That, coupled with the lack of soil erosion, means that impacts to water quality would therefore be negligible or less.

Vegetation (page 195)

Impacts of management activities on vegetation would be minor, as sharpshooters would operate during winter when vegetation is covered in snow or senescent.

Current major adverse impacts to aspen from elk browsing would continue, with possible beneficial effects relative to no action from herd reductions in slowing the pace of their eventual disappearance from the park. No differences in impact relative to no action on impacts from elk on hardwood forests would occur, as regeneration in these species has not occurred in the park since 1880 regardless of the size of the elk herd. The long-term impact of reducing the elk herd on shrubs in the park would be beneficial compared to no action, and would include areas of the park where elk exert year-round browsing pressure on shrubs now. Beneficial impacts to meadow or riparian herbaceous vegetation and willows from decreased grazing is likely. No change in impact to current adverse impacts to riparian trees is expected and impacts from trampling during travel or resting would be only minimally reduced from lowering elk numbers. Long-term benefits to grasslands in the form of reductions in biomass lost and prevalence of nonnative invasive species are possible. Minor adverse impacts to grassland production from a reduction in nutrients may also occur relative to no action.

ATV/UTV use to recover elk carcasses will include more trampling of vegetation than was initially described. However, this activity will be taking place from November to March when the vegetation is either covered in snow or senescent. Therefore, though larger areas would be affected, the impacts of management activities (Alternative D with alternative implementation techniques) on vegetation would still be minor and short term.

Other Wildlife (page 215)

In the long-term beneficial impacts to biodiversity and wildlife habitat in most vegetative communities in the park, with possible additional benefits for grassland species, would occur from reductions in elk grazing. Implementation of alternative D would result in short-term minor adverse impacts to ungulates, predators, small mammals and breeding birds from disturbance and displacement from helicopters and from human activity. Impacts from these management activities would occur over a longer time each season during both initial reduction and maintenance phase than alternatives B or C. Short-term benefits to predators and scavengers from an increase in food following sharpshooting from leaving carcasses would occur. Reductions in elk numbers would have generally beneficial effects on wildlife habitat and wildlife populations. Less competition for habitat and forage, with benefits for most ungulates, including bison and mule deer, would occur. Benefits for pronghorn and white-tailed deer from reducing elk numbers would be possible. Additional benefits from a reduction in competitive exclusion by elk and increase in population size for mule deer are likely. Localized beneficial impacts to prairie dogs from decreased elk foraging would occur. Continued high use by elk in hardwood, riparian and shrubland habitats would limit beneficial impacts to small mammals and birds in these habitats, although more noticeable benefits to grassland species are likely. Grassland birds dependent on open spaces would experience negligible to minor adverse impacts from a controlled elk population. Benefits for the meadow jumping mouse and the least shrew would occur from increases in herbaceous cover. Predators and scavengers would experience negligible to minor adverse impacts from reduced numbers of calves and other vulnerable prey, although beneficial impacts to mountain lions from increased numbers of mule deer, and to coyotes and bobcats from increases in small mammal numbers are positive and related indirectly to reducing the elk herd. A long-term beneficial impact to rare butterflies from improved grassland habitat conditions is also possible. Cumulative effects from park management have generally been beneficial, including habitat management through mechanical means and prescribed fires and the implementation of species management plans. Previous predator control actions have had adverse impacts on the predators themselves and the populations they historically controlled.

ATV/UTV use would entail no more disturbance/possibly less disturbance compared to helicopter operations for ungulates, predators, small mammals, and breeding birds as ATV/UTV are much quieter than helicopters and also a disturbance that has likely already been encountered by the aforementioned species before.

Under Alternative D, elk carcasses would have been removed via helicopter (for the most part). This alternative did allow for carcasses to be left in place if they are very difficult to remove or if wildlife managers believed their natural breakdown is environmentally preferred or accepted. Using alternative implementation techniques, elk carcasses will still be removed from the field (for the most part). There may be instances where limited elk parts will remain in the field (likely only stomach contents). This impact will be the same as previously analyzed.

Special Status Species (page 224)

Some negligible impacts to bald eagles from displacement related to sharpshooting is possible, and minor impacts from roundup related to helicopter noise if needed would occur. Reduction in elk numbers and resulting increase in eagle prey would have beneficial effects.

Sharpshooting would have no direct effect on black-footed ferrets, but reductions in competition from a reduced elk herd would have indirect benefits. Additional indirect benefits compared to alternative A from managing prairie dogs at higher numbers are also possible. Alternative D would not be likely to adversely affect this species as defined by the Endangered Species Act.

The use of ATV/UTV's on prairie dog towns has already been shown to have no impacts on black-footed ferrets. Also, the noise disturbance from ATV/UTV use would be no more/possibly less than previously analyzed since it would be sporadic and temporary.

Northern-long eared bats are now a special status species in Wind Cave that was not addressed during the initial Elk Management Plan. During the implementation of Alternative D (November through March), all northern-long eared bats will be in hibernacula. All known hibernacula are not in areas where ATV/UTV use will occur.

Air Quality (page 234)

Negligible to minor short-term adverse impacts to air quality criteria pollutants and of hazardous air pollutants from operation of the air-curtain incinerator, should it be needed, would occur. Additional short-term negligible impacts from the operation of the helicopter during sling-loading to remove carcasses during initial reduction would also occur. Ongoing sources of air pollution, including stationary and mobile sources inside and outside of the park in Custer County would continue. Visibility is excellent, but may be degraded by regional development of oil, gas or coal-fired power plants over time. When compared to the no-action alternative, this alternative would result in additional negligible to minor adverse effects to air quality.

The removal of elk carcasses from the field using ATV/UTVs will produce no more/possibly less short-term negligible impacts to air quality. Carcasses would be incinerated once removed from the field. However, the meat will be removed most carcasses before incineration. The total amount of material (animal parts) incinerated would be less than originally considered. Therefore, no more/possibly less negligible to minor short-term adverse impacts to air quality criteria pollutants and of hazardous air pollutants from the operation of an incinerator would be expected.

Cultural Resources

An Assessment of Effect on Cultural Resources was prepared for 2009 Elk Management Plan. This included to potential use of ATV/UTVs. A determination of No Adverse Effect was concurred by the SHPO. Wind Cave will continue to implement the best management practices for ATV/UTV off-highway use.

Visitor Experience (page 256)

Under alternative D, short to long-term beneficial impacts to some visitors, and negligible to major adverse impacts to others from witnessing elk management activities or knowing they are ongoing may occur. The expected long-term decrease in the elk population would result in minor to moderate, longterm, adverse effects to the visitor experience related to fewer opportunities for viewing elk. Soundscape impacts from the use of firearms (sharpshooting) and helicopters (sling-loading carcasses) would be confined to the backcountry areas of the park which would be closed to visitors. This is expected to result in negligible to minor, long-term, localized adverse effects to the visitor experience

(similar to alternatives B and C). Additional minor adverse impacts to the soundscape from a reduction in elk "bugling" would occur. The closure of the backcountry to visitors during management actions (helicopters, firearms use, incineration) would likely result in negligible to moderate, long-term, localized adverse effects to the visitor experience, depending on the month. Long-term benefits and adverse impacts of negligible to minor intensity are expected related to carcasses being left in the backcountry. In addition to the effects of this alternative, cumulative effects to the visitor experience include benefits from elk educational and interpretive programs and exhibits provided by the park. The annual bison roundup also results in additional cumulative adverse effects (negligible to minor) when access to certain park areas is restricted and helicopter noise is experienced by visitors. When compared to the no-action alternative, alternative D would result in additional negligible to moderate, long-term, adverse effects to the visitor experience. In addition, benefits are expected.

There are two alternative implementation techniques incorporated into the 2016 Elk management implementation plan. The first is the use of ATV/UTV to retrieve elk carcasses instead of helicopters and the second is only partial/limited closure of backcountry areas during elk reduction activities.

ATV/UTV use would entail no more disturbance/possibly less disturbance compared to helicopter operations as they are much quieter than helicopters. Also, this action would be limited to only two discrete areas within the park each day as opposed to helicopter operations potentially occurring throughout the park each day. As a result of not using helicopters, only partial/limited closure of backcountry areas may be utilized during elk reduction activities. This would reduce the amount of impact previously determined to be experienced by visitors to the backcountry as most of the backcountry would remain open each day. Furthermore, 2016 elk reduction operations will not begin until November (instead of August as initially evaluated). Visitation is lower in November as compared to the August, September, and October; further reducing the potential number of visitors impacted.

The impact of Alternative D with alternative implementation techniques will be no greater/possibly less than when compared to the initial assessment.

Socioeconomics (page 267)

Alternative D, the sharpshooting alternative, would create a short-term minor to moderate adverse impact on tourism and recreation, and then a long-term negligible impact on tourism and recreation. Alternative D would produce a long-term moderate adverse impact on hunting because of the smaller elk population. Alternative D would also have a short-term beneficial impact on elk depredation and state policies to address depredation and grazing on leased USFS lands, and then a long-term beneficial impact. When compared to the no-action alternative, alternative D would result in increased adverse socioeconomic effects to tourism/recreation and hunting, as well as increased benefits to state programs addressing elk impacts on private lands.

The alternative implementation techniques previously described would have no additional impacts to socioeconomics described in the original assessment.

Park Operations

Under alternative D, elk management efforts would involve negligible to minor, long-term adverse effects to park operations. These include minor effects to the Resource Management and Resource and Visitor Protection. Adverse effects to the Interpretation (negligible to minor) and Administration (minor)

divisions are also expected. Minor adverse effects to the Maintenance division are expected. In addition, cumulative effects to park operations include benefits related to implementation of recently completed natural resource management plans, as well as minor adverse impacts resulting from effects of dwindling funding, ongoing natural and cultural resource management activities, and provision of visitor facilities/services. When compared to the no-action alternative, this alternative would result in a slight increase in adverse (minor) effects to park operations.

The impact of Alternative D with alternative implementation techniques will be no greater/possibly less than when compared to the initial assessment.

Human Health and Safety

This alternative would result in negligible to minor, long-term, adverse effects to human health and safety related to the use of aircraft for elk monitoring surveys and sling-loading of carcasses out of the backcountry (similar to that under no action). The handling of carcasses (CWD sample collection, incineration, or landfilling) would result in minor, long-term, adverse effects to health and safety. Negligible to moderate, long-term, adverse effects related to euthanasia activities (use of firearms) are possible. Existing cumulative effects to health and safety include benefits (maintenance of facilities, resource management) and negligible to minor adverse effects (resource management, infrastructure repair or construction, CWD-related work). When compared to the no-action alternative, alternative D would increase the potential risks to human health and safety in the frequency of occurrence of potential risks and in the potential intensity of effects (possibly moderate, adverse) of these risks.

There are two alternative implementation techniques incorporated into the 2016 Elk management implementation plan. The first is the use of ATV/UTV to retrieve elk carcasses instead of helicopters and the second is to distribute meat to the public.

ATV/UTV is considered a safer alternative to helicopter use when either is an option. Compared to helicopter use, ATV/UTV operators encounter lower noise levels (ear protection not required), less injury as a result of engine failure, and can be operated under a wider range of environmental conditions (high wind, snow). Therefore, the impact of ATV/UTV would be no greater/possibly less than the impact of using helicopters.

Distribution of meat to the public was considered as part of Alternative C. Therefore, the expected impact would be the same as evaluated in Alternative C.

Sustainability and Long-term Management

Under this alternative, elk populations would be initially reduced over a four to five year period via sharpshooting. As is the case under all action alternatives (B–D), the elk population would be managed in a similar manner to that described under alternative B. Benefits and adverse impacts which affect the short-term uses of the environment and the maintenance and enhancement of long-term productivity are similar under this alternative as those described under alternative B.

As the overall elk population size will decrease using Alternative D with alternative implementation techniques, the impact would be the same as previously analyzed.

Irreversible or Irretrievable Commitments of Resources

As is true under alternatives B and C, this alternative would result in the reduction of the park's elk population to an environmentally sustainable level and would improve conditions for the park's resources, particularly vegetation and wildlife. Irreversible or irretrievable commitment of resources under this alternative are similar to those described under alternative C.

As the overall elk population size will decrease using Alternative D with alternative implementation techniques, the impact would be the same as previously analyzed.