



COLORADO

Parks and Wildlife

Department of Natural Resources

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Scott Fitzwilliams
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June 1, 2020

RE: Bergman Bowl Enhancement Projects

Dear Mr. Fitzwilliams

Thank you for the opportunity to comment on the proposed projects at Keystone Resort. Colorado Parks and Wildlife (CPW) has a statutory responsibility to manage all wildlife species in Colorado; this responsibility is embraced and fulfilled through CPW's mission to protect, preserve, enhance, and manage the wildlife of Colorado for the use, benefit, and enjoyment of the people of the State and its visitors. CPW encourages Keystone Resort, and the Dillon Ranger District of the White River National Forest to afford the highest protection for Colorado's wildlife species and habitats. The proposed projects are as follows:

- 1) Construction of a detachable chairlift in Bergman Bowl and associated infrastructure and utility improvements to serve approximately 555 acres of ski terrain;
- 2) Construction of 13 ski trails in Bergman Bowl and 3 ski trails in Erickson Bowl, requiring approximately 73 acres of tree clearing, 19 acres of grading, and glading within 40 acres;
- 3) Installation of 22 acres of snowmaking coverage on proposed beginner and intermediate ski trails in Bergman Bowl;
- 4) Construction of a 2,200-foot road, intended to provide access to the bottom terminal of the proposed Bergman Bowl lift;
- 5) Construction of a 1,000-square-foot ski patrol facility near the top terminal of the proposed Bergman Bowl lift; and
- 6) Expansion of the Outpost Restaurant to provide approximately 6,000 square-feet of space for guest services including restaurant seating and restrooms.

CPW has reviewed the proposed projects, and would like to offer specific comments on impacts to wildlife.

General Wildlife

The current proposed plan of action made no mention of novel summer recreational use in the project area in conjunction with the new developments. CPW recommends that Keystone keep the proposed



project area closed to all summer resort activity to lessen impacts to all summering wildlife. Additionally, outside of initial construction, CPW recommends that worker presence in the area be limited to only essential maintenance of equipment and infrastructure.

CPW recommends that the environmental assessment include an alternative that excludes any tree removal outside of what is necessary for the chair lift infrastructure. As was stated by the SE Group, the terrain within Bergman Bowl is uniquely well suited for lower ability level guests in its natural state, and in addition to signed routes, the tree islands of these areas also receive heavy skier traffic. If the Bergman bowl area is already accessible and satisfactory to skiers of different levels in its current state, why do more trees need to be removed to create new trails and thin other areas? At a minimum, CPW recommends minimizing the amount of tree removal for both the proposed glading and development of new ski trails which would benefit lynx and all other wildlife that utilize forested areas near Bergman Bowl.

In addition, CPW supports implementing strong closures above the Jones Gulch area to prevent skiers from accessing that location and other portions of the Management Area 5.5 outside of the project area. Illegal access into these adjacent areas will cause disturbance and fragmentation, and degrade habitat value for wildlife. CPW encourages Keystone and the DRD to clearly mark the closed areas using signs, ropes, gates and snow fencing. CPW is happy to help develop public education and signage materials, and requests that these closures be strongly enforced to protect both wildlife and habitat.

Elk and Mule Deer

The project area occurs within summer range and summer concentration areas for elk and mule deer. Additionally, it occurs within a mule deer migration corridor. Summer habitat and subsequent available nutrition impacts both mule deer and elk survival and is especially important for recovering from winter weight loss, birthing and rearing of the young, building fat reserves for the coming winter, and maintaining movement and connectivity between seasonal habitats (Cook et al. 1996, Parker et al. 1999, Sawyer et al. 2005, Bolger et al. 2008, Tollefson et al. 2010). CPW recommends that all activities, including construction, tree removal, grading and trail improvement at all locations occur between the hours of 9am-4pm to minimize disturbance to elk and mule deer during the time periods when they are most active.

While these developments are not located in known reproduction (deer fawning and elk calving) areas, it is possible some elk and deer will give birth nearby or within the project area based on the available habitat. Furthermore, elk and mule deer will certainly utilize the project area with their still vulnerable offspring later in the summer after the initial birth pulse in late May and early June. Elk and deer are susceptible to energetic tolls generated by human disturbance, which can also directly impact fawns and calves by increasing energy requirements from displacement, and by increasing risk of detection by predators including coyotes, black bears, and mountain lions (Freddy et al. 1986, Stankowich 2008, Ciuti et al. 2012). Repeated displacement of elk has been shown to result in major declines in elk calf survival (Phillips et al 1998, 2000). Deer are similar in their response to human disturbance and fawns are equally susceptible to predation. CPW recommends that all summer construction and associated activities begin after June 30th to minimize the disturbance to deer and elk during the critical reproductive time period of May 15 to June 30.

Mountain Goats

All components of the proposed project area at and above tree line fall within mountain goat summer range. Mountain goats are limited in habitat choices by topography and may have to venture far from

escape terrain to access certain features such as salt and water (Thompson 1981). The high alpine habitat of Independence Mountain, Keystone Mountain and adjacent peaks provide movement corridors and landscape connectivity between limited habitat areas for mountain goats in Southern Summit County. Mountain goat kids face risk of separation from nannies while fleeing from humans and experience higher mortality if not reunited due to prolonged human disturbance (Canfield et al. 1999), particularly during the summer months when they are highly dependent and most vulnerable. Similarly, mountain goats in the vicinity of ski areas have been observed to alter their use of suitable habitat due to physical modification of the landscape and a perceived higher level of risk associated with anthropogenic activity (Richard and Cote 2015). Physical modifications to the ski area (including tree removal, new roads and lifts) can lead to changes in habitat use patterns, especially in the summer. Changes in vegetation cover in the upper sections of the project area that provide preferred mountain goat habitat could influence resource availability for mountain goats as well. Helicopters, which are proposed to be used in construction, have also been shown to significantly disturb mountain goats (Cote et al. 2013).

Construction and future maintenance activities for the proposed developments have the potential to displace mountain goats out of this valuable summer habitat, interrupt movement and migration patterns, and change the existing available forage base. In addition to minimizing disturbance to deer and elk, CPW recommends that all construction and associated activities at and above tree line occur outside of May 15-June 30 to avoid displacement of mountain goats during this sensitive time period. CPW also recommends restoration of any disturbed areas to pre-construction vegetation. Additionally, CPW recommends that any helicopters used for construction or maintenance avoid mountain goats by a minimum of 1500 meters if possible.

Canada Lynx

The project area is located adjacent to a USFS Forested Landscape Linkage 5.5 Management Area for Canada Lynx. This important landscape linkage has been identified as high quality summer and winter habitat for Canada lynx. This area provides a crucial forested corridor between the highly recreated areas of Georgia Pass and A-Basin, allowing for connectivity and movement from southern Summit County north to the land bridge over I-70 and other crossing areas. Maintaining habitat connectivity is considered to be critically important to sustaining lynx populations in the Southern Rockies. Lynx are dependent on contiguous forested habitat for travel, diurnal security, reproduction and foraging. Spruce-fir and mixed timber, multi-story forests such as this provide food and cover for snowshoe hares and squirrels, the primary food sources for lynx (Aubry et al. 2000). Continuous snow compaction caused by winter recreation and maintenance, combined with tree removal for ski runs will decrease the habitat value for lynx and their prey base, and can provide access for interspecific competitors such as coyotes (Joslin and Youmans 1999).

The proposed actions will increase fragmentation of suitable lynx habitat and decrease an already narrow pinch point within this lynx corridor. The cumulative effects of direct habitat loss and increased disturbance may negatively impact lynx by altering their movement and behavior. CPW also strongly recommends a closure of the Bergman Bowl lift on May 1 every year to minimize impacts to lynx movement and reproduction (Ivan, CPW Mammals Research, unpublished data). CPW also recommends limiting snow grooming operations on the proposed ski runs to outside the hours of 10pm-4am to minimize disturbance to nocturnal movement of lynx.

White-tailed Ptarmigan

While Ptarmigan were not detected in surveys, they do inhabit high alpine areas in and around Keystone, and are negatively impacted by snow compaction. Ptarmigan are dependent on alpine habitat, feeding and nesting on exposed slopes above tree line. Ptarmigan seek deep, soft snow for winter roosting in protected areas near tree line, in isolated basins and on the lee side of ridges (Braun et al. 1976). Snow compaction in these areas will negatively impact ptarmigan by limiting winter roosting areas, and affecting plant growth and insect emergence in the spring. Increased development and recreation in Bergman and Erickson bowl may also directly displace wintering ptarmigan due to the operational disturbance. Ptarmigan utilize the areas above treeline in the spring and summer where they rely on alpine forbs, mosses, lichens, shrubs and other low growing vegetation for survival. They use snow-free, rocky areas adjacent to cover and moisture for brood rearing during spring and early summer months.

These birds are negatively impacted by disturbances throughout their range, and the proposed actions will likely decrease the probability of ptarmigan use in the area. Ptarmigan begin nesting activity in mid-May, and CPW's recommended closure of the Bergman Lift on May 1 will benefit ptarmigan as well as lynx. CPW's recommendation to perform summer construction and removal activities after June 30 will benefit ptarmigan in addition to ungulate species.

Moose

The entire project area falls within moose summer range. These large ungulates are relatively unafraid of humans and move through the Keystone area year round, and have been sighted frequently along Keystone Gulch, Jones Gulch and Saints John Creek. Moose react to dogs as they would to wolves, and do not run from dogs but may defend themselves and attack if provoked. Dogs that bark at, chase or harass moose can create a dangerous situation for both pets and humans. In addition to creating conflicts with moose, dogs can chase, harass and kill other wildlife including fawns, calves, small mammals and songbirds. CPW recommends that no dogs are allowed on site at any of the projects to avoid conflicts with moose and harassment of other wildlife.

Black Bears

The Keystone area experiences high levels of black bear activity throughout the spring, summer and fall. CPW requests that all restaurants on the resort that operate during summer months, including the Outpost Restaurant with proposed expansion, utilize bear-proof trash containers to minimize conflicts. During project construction, CPW also recommends that all contractors on site are required to utilize bear proof trash containers for any material that can be a wildlife attractant (food or odiferous substances). Food should not be stored in vehicles to minimize conflicts with black bears.

Raptors and Songbirds

Multiple species of raptors and migratory birds inhabit the forested areas within and surrounding Keystone Resort. Potential impacts to bird species due to construction disturbance, tree removal, and new infrastructure for the proposed projects are a concern. CPW recommends that raptor nest surveys (before July 31) and migratory bird nest surveys (before July 15) are performed by a qualified biologist within two weeks prior to any disturbance or tree removal. CPW recommends that if any active nest sites are found, that trees with active nests are to be retained and that the construction and installation activities occur outside of the recommended seasonal timing and surface occupancy buffers for identified raptor species (see Appendix A). Appendix A includes a list of raptors that are most likely to occur throughout Summit County, although other raptor species may be found.

CPW also recommends that Keystone Resorts follow the guidelines for the U.S. Fish & Wildlife Service Recommended Best Management Practices for Tall Structures to minimize impacts of ski lift towers to raptors and migratory birds.

Boreal Toads

The project area is located in the Boreal toad's overall range, and potential breeding habitat was located in the Keystone Gulch headwater. While no toads were detected, CPW recommends that construction activities avoid downstream disturbance to potential toad habitat. Disturbance, discharge or sedimentation may negatively impact existing boreal toads, or prevent them from recolonizing suitable areas in the future.

Bats

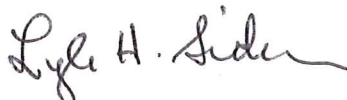
Bat roost/hibernacula habitat was discovered in the Erickson Mine. CPW recommends avoiding surface disturbance activities within 350 feet of the Erickson mine entrance, and prohibiting site entry from October 15 to April 15.

Weeds

Soil disturbance at the project sites may introduce non-native vegetation and weeds that could negatively impact wildlife species and degrade neighboring riparian habitat and wetlands. Introduction or spreading of non-native, undesirable vegetation and noxious weeds is problematic and challenging to control. Weed impacts can be reduced by utilization of certified weed free seed and straw, and conducting pre disturbance weed surveys in the project area. CPW recommends re-seeding of any disturbed areas with a native plant seed mix, implementation of an effective weed management plan, and reclamation of disturbed areas around the projects to a natural state to minimize invasive plant species.

CPW would like to thank you for the opportunity to comment on these projects on the Dillon Ranger District in Summit County. If you or your staff should have any questions, please contact Jacob Kay at 970-485-3081.

Sincerely,



Lyle H. Sidener
Area Wildlife Manager

Cc: JT Romatzke-Regional Manager (CPW)
Jacob Kay-District Wildlife Manager (CPW)
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APPENDIX A

RECOMMENDED RAPTOR BUFFER ZONES AND SEASONAL RESTRICTIONS

BALD EAGLE

Nest Site:

No surface occupancy (beyond that which historically occurred in the area; (see Definitions below) within ¼ mile radius of active nests (see Definitions below). Seasonal restriction to human encroachment (see Definitions below) within ½ mile radius of active nests from October 15 through July 31. This closure is more extensive than the National Bald Eagle Management Guidelines (USFWS 2007) due to the generally open habitat used by Colorado's nesting bald eagles.

Winter Night Roost or Communal Roost Site:

No human encroachment from November 15 through March 15 within ¼ mile radius of an active winter night roost (see Definitions below), if there is no direct line of sight between the roost and the encroachment activities. No human encroachment from November 15 through March 15 within ½ mile radius of an active winter night roost if there is a direct line of sight between the roost and the encroachment activities. If periodic visits (such as lift maintenance work) are required within the buffer zone after development, activity should be restricted to the period between 1000 and 1400 hours from November 15 to March 15.

Hunting Perch:

Diurnal hunting perches (see Definitions below) associated with important foraging areas should also be protected from human encroachment. Preferred perches may be at varying distances from human encroachment and buffer areas will vary. Consult the Colorado Division of Wildlife for recommendations for specific hunting perches.

GOLDEN EAGLE

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within ¼ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile radius of active nests from December 15 through July 15.

RED-TAILED HAWK

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within 1/3 mile radius of active nests. Seasonal restriction to human encroachment within 1/3 mile radius of active nests from February 15 through July 15. Some members of this species have adapted to urbanization and may tolerate human habitation to within 200 yards of their nest. Development that encroaches on rural sites is likely to cause abandonment.

PEREGRINE FALCON

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within ½ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile of the nest

cliff(s) from March 15 to July 31. Due to propensity to relocate nest sites, sometimes up to ½ mile along cliff faces, it is more appropriate to designate 'Nesting Areas' that encompass the cliff system and a ½ mile buffer around the cliff complex.

NORTHERN GOSHAWK

No surface occupancy (beyond that which historically occurred in the area) within ½ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile radius of active nests from March 1 through September 15.

DEFINITIONS:

Active nest - Any nest that is frequented or occupied by a raptor during the breeding season, or which has been active in any of the five previous breeding seasons. Many raptors use alternate nests in various years. Thus, a nest may be active even if it is not occupied in a given year.

Active winter night roost - Areas where Bald Eagles gather and perch overnight, and sometimes during the day in the event of inclement weather. Communal roost sites are usually in large trees (live or dead) that are relatively sheltered from wind and are generally in close proximity to foraging areas. These roosts may also serve a social purpose for pair bond formation and communication among eagles. Many roost sites are used year after year.

Human encroachment - Any activity that brings humans in the area. Examples include driving, facilities maintenance, boating, trail access (e.g., hiking, biking), etc.

Hunting perch - Any structure on which a raptor perches for the purpose of hunting for prey. Hunting perches provide a view of suitable foraging habitat. Trees are often used as hunting perches, but other structures may also be used (utility poles, buildings, etc.).

Surface occupancy - Any physical object that is intended to remain on the landscape permanently or for a significant amount of time. Examples include houses, oil and gas wells, tanks, wind turbines, roads, tracks, ski lifts, zip lines, etc.