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(Updated 1998)

PROTECTING BIRDS OF PREY IN THE LUMPY RIDGE AREA

FROM

ROCK CLIMBING AND PARK BOUNDARY DEVELOPMENT

ROCKY MOUNTAIN NATIONAL PARK

ABSTRACT: A survey for birds of prey began in Rocky Mountain National Park in 1987. First year survey work identified a high concentration of birds of prey along a 5.6-kilometer by 2.4-kilometer ridge at the east boundary of the park. Twelve species, including two federally endangered birds of prey were found to be nesting or foraging along this ridge. The ridge has a collection of south facing cliffs, which is lower in elevation than most cliffs in the park and is the park's most popular rock climbing area. The highest elevation of the ridge is 3250 meters. Over 300 named climbing routes exist along the ridge on 31 named rock formations. Due to the high concentration of raptors and climbers, conflicts occur during the birds breeding season which is also the peak climbing period. Based on breeding birds of prey, the park closes certain cliffs to climbing to protect the birds, and also climbers from raptors that may aggressively defend their nest.

From late March to April 30th each year, cliffs previously used by birds of prey are closed, providing the opportunity for the birds to chose nest sites. Once a nest or ledge is determined, adjustments are made to climbing closures to provide the optimum number of cliffs for climbers while still protecting the nesting birds of prey. The park takes an open approach to protecting the birds by using press releases, contacting climbers and organized climbing groups, conducting guided walks with an emphasis on raptors, developing site bulletins, and posting closure notices to inform the public. To date the program is working well with few complaints from climbers, and raptors successfully producing offspring..

Besides protecting nesting habitat, there also is a concern about protecting the prey base. Some of the foraging habitat used by raptors that nest along the ridge is on private land adjacent to the park boundary. Long-term development is a concern. The park staff includes one full time Land Use Specialist that works with the adjacent communities in trying to minimize resource impacts to the park from outside development. Even though no conflicts presently exist, long-term development could eliminate prey, which in turn could eliminate the raptors.

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INTRODUCTION

In 1978 Rocky Mountain National Park was the first National Park to begin a hacking program for peregrine falcons in the United States. Fifty-eight peregrine falcons were successfully fledged in the park from 1978 until 1990 when the program was discontinued. In 1988 the Peregrine Fund, (a private organization in Boise Idaho dedicated to the protection and enhancement of the peregrine falcon), conducted a survey in Rocky Mountain National Park to determine if the hacking program had established any nesting peregrine falcons (*Falco peregrinus*).

The Peregrine Fund identified an area within the park called Lumpy Ridge, as excellent peregrine falcon habitat. Lumpy Ridge is the only documented location in the park of a historic peregrine falcon eyrie. The eyrie had been unoccupied since 1959, but with the hacking program initiated in 1978, the Peregrine Fund expected peregrine falcons to reoccupy former habitat.

In the spring of 1988 potential cliffs were surveyed for peregrine falcons by the Peregrine Fund and park staff. Lumpy Ridge was one of the first areas surveyed and within the first day, a female peregrine falcon, a breeding pair of prairie falcon (*Falco mexicanus*), a single northern goshawk (*Accipiter gentilis*), a single golden eagle (*Aquila chrysaetos*), and a single red-tail hawk (*Buteo jamaicensis*) were observed.

As the survey along Lumpy Ridge progressed into April, sightings of raptors became more frequent. By April 30, additional species of birds of prey were identified, including cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), turkey vulture (*Cathartes aura*), American kestrel (*Falco sparverius*), great-horned owl (*Bubo virginianus*), and Northern pygmy owl (*Glaucidium gnoma*). By April 30, active nests sites were found in the Lumpy Ridge area for two breeding pairs of prairie falcons, one pair of peregrine falcons, one pair of golden eagles, two pair of Common ravens, three pair of red-tailed hawks, one pair of Northern goshawks, one pair of great-horned owls, one pair of pygmy owls, and one pair of American kestrels. In addition a turkey vulture roost was identified on the East End of the ridge. Further survey work throughout the park indicated that Lumpy Ridge had the highest concentration of birds of prey in the park and most likely anywhere along the Front Range in Colorado based on density of breeding birds of prey within a 1,120 hectare area.

DESCRIPTION OF LUMPY RIDGE

Lumpy Ridge is a collection of south facing cliffs just north of Estes Park located on the eastern end of Rocky Mountain National Park. Named cliffs vary in height from 61 to 305 meters. Lumpy Ridge has lower elevation cliffs than other areas in the park (the highest point on the ridge is a named formation called The Needle that is 3,250 meters above sea level). Most of

the cliffs elsewhere in the park are above 3,250 meters. Besides the low elevation south facing cliffs, accessibility to areas of high concentrations of prey such as small mammals and birds make this ridge ideal habitat for birds of prey.

Lumpy Ridge is about 5.6 kilometers long by 2.4 kilometers wide representing about 1,120 hectares. The rock is granite maintaining an even consistency throughout the ridge that is ideal for rock climbing. Geologic information reveals that faulting is occurring under the base of the ridge running north to south. The ridge is unglaciated, which explains the rough granite, crystalline cracks and rounded structures. The freeze-thaw cycle is the predominant erosive factor in the shaping of the rocks.

CLIMBING HISTORY OF ROCKY MOUNTAIN NATIONAL PARK AND LUMPY RIDGE

Lumpy Ridge has 31 named rock faces with over 300 named climbing routes (Kimbell, 1986). Rocky Mountain National Park, designated a national park in 1915, had no technical climbing until the 1920's. By the 1970's, the number of named climbs on Lumpy Ridge warranted the publishing of a climbing guidebook. With this text of previously unpublished climbs, climbing activity increased dramatically. Nondestructive protection replaced the use of pitons, and the practice of "clean climbing" became the ethical standard of the era in the 1970's. This change in climbing technology led to the first clean or "free ascent" of the Diamond on Longs Peak in 1979.

By the 1980's, more of the aided big walls were receiving free ascents. Improved equipment, climbing-specific training, and chalk enabled climbers to surpass the earlier standards of difficulty, turning interest to unclimbed blank rock faces. An increased number of bolts were drilled and installed at Lumpy Ridge to "protect" climbers. Portable power drills made the construction of face climbs even easier and safer. "Ethics," or the manner how a route is constructed and ascended, became topical.

Climbing has now reached such extreme levels of difficulty that climbers have recognized the need to train more vigorously, creating a market for artificial climbing walls. Media coverage and climbing competitions have gained popularity and have brought more attention and profit to the sport. In the past few years, remote high peaks within the park and accessible day-use climbing areas have received a proliferation of bolted routes.

Rock climbing has increasingly become a popular pastime and attracts not only participants but spectators as well. As climbers and spectators converge on the limited area suitable for the sport, impact is inevitable. In certain areas of the park and especially Lumpy Ridge, soil erosion, loss of vegetation, braiding of non-designated trails, water quality degradation, rock scarring, and displacement of wildlife are occurring due to

climbing activity. There is a concern that without a long-term perspective and plan, serious degradation of natural resources and a reduced quality of visitor experience will occur.

NEED FOR NEW SYSTEM

Because Lumpy Ridge is prime habitat for birds of prey, Rocky Mountain National Park decided in 1988 to lessen influence on wildlife behavior, such as migration patterns, nest selection, feeding, resting inhabitation, and reproduction, by establishing temporary climbing closures on certain cliff faces. Rocky Mountain National Park also decided to take an open approach towards protecting birds of prey. Press releases, contacting climbers and climbing organizations, conducting guided walks with an emphasis on birds of prey, posting closure notices, writing and printing a site bulletin, explaining the park's management of birds of prey, and increasing ranger patrols in the area have all been done. To date the program has worked well with few complaints from climbers, and birds of prey successfully producing offspring.

Climbing closures occur along Lumpy Ridge because park staff believes the raptors would fail in their nesting due to the amount of climbing on or near nests. It has been documented that a pair of peregrine falcons nesting in the Lumpy Ridge area relocated to another cliff in 1990 when a pair of climbers inadvertently disturbed them at a critical time. In addition climbing closures also protect climbers. Falcons have harassed climbers when climbing near an eyrie. Aggressive raptors could clearly jeopardize a climber's safety.

Cliffs used for nesting by birds of prey in previous years are initially closed from March 25 to April 30. Field observers monitor the cliffs during those 35 days to determine where the birds are going to nest. Some raptors such as red-tailed hawks and golden eagles have several alternative nests and move around from year to year. Falcons will also use different cliffs and ledges. After ten years of monitoring, there are few surprises which cliffs are used by nesting birds of prey on Lumpy Ridge. When a breeding pair pick a site, climbing closures are refined. Some cliffs are reopened to climbing while others remain closed, usually until mid July. Frequently cliffs that will not be used that year by nesting raptors are reopened to climbing before April 30. However, even during the biggest climbing closure from March 25 to April 30, less than 25% of the cliffs used by climbers on Lumpy Ridge are closed. After April the number of cliffs closed to climbing are usually about 10 to 15 percent of the total.

Compliance by climbers is good during the closures with few documented violations. However, several climbing parties expressed frustration to park employees when told they could not climb in closed areas. One climbing party stated when told they could not climb in one of the closed areas; "Why doesn't the park

just move the nest to an area where climbing doesn't occur."

Lumpy Ridge has the best raptor-breeding habitat in the park, and one of the densest populations of raptors along the eastern slope of the Continental Divide in Colorado. It is also an area where climbers can use the area during the height of the nesting season, with a minimum amount of impact to raptors.

WHY PROTECTING BIRDS OF PREY IS SO IMPORTANT

Being high on the food chain, birds of prey are environmental barometers (Call, 1978). Because they feed largely on the primary consumers, the next lower rung on the food chain, they pick up residual toxins that have built up in the tissues of such animals as fish, rabbits, ground squirrels, birds, and other small animals. Monitoring birds of prey can help managers determine the health of an ecosystem. If the birds of prey population is healthy usually the primary consumers are healthy.

Monitoring and protecting birds of prey are important for the following reasons:

- a. The National Park Service's Organic Act of 1916, and Rocky Mountain National Park's 1915 enabling legislation mandate that native flora and fauna should be protected.
- b. To be knowledgeable on nesting, feeding, wintering, and roosting areas to give adequate protection.
- c. To be able to determine and monitor the effects of human activities on nesting and other life phases of raptors and other birds.
- d. To find out general trends in populations and productivity by species and the probable reasons for those trends.

Birds of prey basically have few needs: 1) breeding sites, 2) adequate and available prey base; 3) cover and roosting sites; and 4) a lack of disturbance particularly during the breeding season. The courtship and incubation period are the most critical time for birds of prey when disturbance by humans can cause nest abandonment. Humans should not flush birds of prey from nests, especially when eggs are present. If adults leave a nest unexpectedly, there is an increased chance for predation by both aerial and ground predators. Exposure may cause the death of the embryos or young birds due to excessive cold or heat. If an adult bird leaves the nest quickly during incubation or brooding, they may knock young birds or eggs from the nest or ledge. Dehydration of eggs or an adverse change in humidity within the egg may occur if eggs are unprotected for more than a few minutes in some cases. Young birds may miss essential

feedings and become weakened if adults are away from the nest for extended periods. When young birds are old enough to fledge at someone's approach, a premature try may damage bones, incur other injuries, or cause the bird to become lost or abandoned (Snow, 1972). All of the mentioned impacts can occur if a nest is located on or near a climbing route.

Some of the climbing routes on Lumpy Ridge require hours or most of the day light period in a day to reach the summit. If a climber(s) was on a cliff for hours that a raptor occupied, he or she could cause the raptors to be off the nest for so long that death of the eggs, young, or nest abandonment is almost certain.

Disturbances to birds of prey by climbers are caused by either the direct presence of humans and noise, or indirect from soil and plant degradation, deposition, or loss of essential prey base. Anyone of the causes, or a combination, may be enough to discourage many birds from nesting in an area or causing an active nest to fail. Such disturbance may gradually reduce the number of total sites available. The presence of a human or associated noise will affect birds more directly than erosion and deposition. Erosion may reduce vegetation cover causing a reduction in small mammals and songbirds, reducing the prey base.

Long-term monitoring of nesting birds of prey in the park indicates some breeding pairs are more tolerant of people than others. The visual or noise distance a bird will tolerate the presence of a human can vary even between the same species of bird. For example, one known pair of golden eagles in the park can tolerate humans from a short distance away even when a hiking trail or climbing route passes near the nest, whereas another known pair will leave the nest if someone gets within ½ kilometer of the nest. Observations of raptors on Lumpy Ridge indicate that a raptor nesting high above a hiking trail or a climbing route usually tolerates people below, whereas a hiking trail or a climbing route on the same level or above the nest will cause a disturbance. Raptors may tolerate climbers on the same cliff if the climbers are out of sight and sound and do not walk above the nest or descend within view of the nest. A hiking trail through a forested area will have less of an impact than a hiking trail in open grasslands when a nesting pair of raptors is nearby.

* Climbing on a cliff with nesting raptors will usually cause the birds to leave the nest until the climbers are out of sight and sound, but this can even vary from nesting pair to nesting pair. The one pair of golden eagles that breed on Lumpy Ridge can tolerate climbing on a nearby cliff within sight and sound of the nest depending on which nest they use. They have three alternative nests on the ridge with two of them being on named rock formations with climbing routes. The other nest is on an unnamed formation but within sight and sound of a popular climbing cliff. The rock on the unnamed formation is poor and is never climbed. When the eagles use the nest on the named formations climbing closures are established, but when they use

the nest on the unnamed formation no closures are done because monitoring indicates no signs of visible stress to the adult eagles or young.

There is no cook book answer to how far away a land manager should close an area to human access to protect breeding birds of prey. The land manager should base his or hers decision on the tolerance of the breeding pair and that can only be done by consistent monitoring from year to year. However, nest abandonment due to climbers and other recreationists have occurred with one documented case in 1990 in Rocky Mountain National Park. If one wants a cookbook answer for a climbing closure, my best guess, shooting from the hip, is establish the closure so a climber is out of sight and most sound from the nest. That distance can vary depending on the location but a closure of more than 0.5 kilometer away is probably excessive in most cases. At Rocky Mountain National Park climbing rangers have climbed on nearby cliffs and observed raptor behavior nesting nearby or an observer from the ground has watched the raptors while Rangers climb, to determine if a closure is adequate or can be reduced to a smaller size to accommodate climbers.

FUTURE CONCERNS

A large amount of habitat for hunting prey by the birds of prey on Lumpy Ridge is on private land next to the park. The habitat is principally open meadows and ponderosa pine with small aspen groves. The meadows have a high population of Wyoming ground squirrels (Spermophilus elegans). The ground squirrel population has remained stable or increased since 1988. The golden eagles, red-tail hawks, prairie falcons, northern goshawks, great horned owls that nest on Lumpy Ridge, have taken ground squirrels from private land. Some landowners concerned about the ground squirrels are worried about contacting bubonic plague, the ground squirrels feeding on vegetation especially gardens or the ground squirrels burrows being hazardous to livestock. The park had to close a campground in the early 1970's due to a die off of ground squirrels from bubonic plague. Some landowners near Lumpy Ridge have removed ground squirrels from their property. One landowner was observed using poison. A raptor feeding on a poisoned ground squirrel could be poisoned as well based on what was used. The park superintendent released a press release about the effect removing ground squirrels have on birds of prey in June 1991. Park staff continues to educate the public about the importance of protecting prey.

The private land adjacent to the park near Lumpy Ridge is still largely undeveloped, but town land plats indicate that fairly dense development could still occur. The Land Use Specialist from the park continues to work closely with town planners and developers to minimize impacts. No conflicts presently exist, but long-term development could eliminate prey.

ACKNOWLEDGEMENTS

A Climbing Task Force was assembled during the winter of 1989-1990 to develop a Climbing Management Plan for the park. It was decided by the Superintendent during that winter to not pursue a climbing plan due to unresolved issues about climbing in National Parks on a national level. A part of this paper is excerpts from the partially completed plan. Presently in 1998 the park has not developed a climbing plan but is developing a Commercial Use Management Plan and a Wilderness Management Plan that will address climbing in more detail.

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