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Study



Cliff-Nesting Raptors in Boulder County, OSMP Studies 4305

4305

CLIFF-NESTING RAPTORS IN BOULDER COUNTY 1997 STATUS REPORT

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INTRODUCTION

1997 was the fifteenth years of a study of nesting golden eagles and prairie falcons in Boulder County conducted by the Boulder County Nature Association (BCNA), City of Boulder Mountain Parks, City of Boulder Open Space, Boulder County Parks and Open Space, and the Colorado Division of Wildlife. Since 1991, peregrine falcons have been nesting within the study area, and their status has been monitored as well. The study's objectives are to:

- Locate active nests
- Measure productivity (number of young hatched and fledged)
- Monitor nests to document and prevent human disturbance
- Work with governmental agencies, land managers, and conservation groups to protect the raptors' habitat
- Locate and map important hunting territories

Numerous volunteers as well as ranger staff are involved in nest monitoring. Nests are watched with binoculars and spotting scopes from a sufficient distance so as not to disturb the raptors. Observations of nesting status, the birds' behavior, any disturbance to the birds, and other pertinent information are recorded. Databases of this information are maintained by the Mountain Parks, City Open Space, and the Boulder County Nature Association.

In some previous years, when there was sufficient time and volunteer assistance, many nests in Jefferson and Larimer counties were also monitored, to gain a broader regional perspective of raptor populations. This year the Jefferson County Open Space Department has begun its own monitoring program; we did not have the time and personnel to cover Larimer County.

1997 NEST STATUS

Golden Eagle

Of the total 10 known territories in the study area, 8 were investigated in 1997. Of these 8, seven were known to be active, with 6 nesting attempts, of which 5 were successful, producing a total of 6 young. One nest failed during incubation (egg or eggs did not hatch), and one of two young in another nest died after hatching, due to unknown causes.

From these numbers, it appears that 1997 was a good year (although not a banner year) for golden eagle reproduction compared to previous years of the study.

Each territory is discussed below, in order from south to north. Land ownership/jurisdiction for each nest site is indicated. Table 1 summarizes the status of each nesting territory from 1982 to 1997. Due to limited field observation time, young birds are rarely seen in the act of fledging or shortly thereafter, while still in the nest vicinity. We assume that a young bird has successfully

LEDERER

- **Eldorado Springs** (Boulder City Open Space and Eldorado State Park). Apparently inactive. No definite nest activity has taken place in this territory since 1985.
- **Skunk Canyon** (Boulder Mountain Parks). Active; two young hatched. One fledged; the other died.
- **Boulder Canyon** (Forest Service). At least one egg was laid on the Eagle Rock nest, but the nest failed sometime during incubation. The reason for the failure is unknown; no disturbance of the nest was observed.
- **North Fork of Middle Boulder Creek** (West of town of Eldora; Forest Service). No active nest has been found since the 1950's, but adult eagles are sometimes sighted in the territory.
- **Boulder North** (Private). Territory not investigated.
- **Lefthand Palisades** (Boulder Mountain Parks). Active; one young fledged.
- **St. Vrain Canyon, Lower** (Forest Service). Active; one young fledged.
- **St. Vrain Canyon, Upper** (Forest Service). Known nests inactive, but adult eagles sighted in territory.
- **Lyons / Meadow Park** (Town of Lyons). Active; one young fledged.
- **Rabbit Mountain** (Boulder County). Active; two young fledged.

Prairie Falcon

1997 status of breeding territories is shown below, in order from south to north. Five of the total 9 known territories in the study area were active, but only three of these produced young (total of 10 birds produced). From these numbers it appears that 1997 was an average year for production of prairie falcons. Some territories that have been used in recent years by prairie falcons are now being occupied by the more aggressive peregrine falcons, who are returning to reclaim territories they used decades ago. In some instances, such as the Mickey Mouse Wall area of Eldorado Mountain, the two species have been able to nest fairly close to each other and both produce young. In other areas the prairie falcons abandon nest attempts, and we do not know if they successfully relocate to a distant territory. Table 2 summarizes the status of each nesting territory from 1983 to 1997.

- **Bull Gulch** (private). Not investigated. This site is actually in Jefferson County, but is sometimes monitored in this study as it is very close to Boulder County.
- **Eldorado Mountain (Mickey Mouse Wall)** (City of Boulder Open Space). Active; four young produced from nest east of railroad tracks.
- **Eldorado Canyon** (Eldorado State Park). Active; two young fledged from Red Garden Wall.
- **Shadow Canyon** (Boulder Mountain Parks). Active early in season; a nesting attempt may have been made, but it was unsuccessful.
- **Fern Canyon** (Boulder Mountain Parks). Active; four young observed before fledging.

- **Bear Canyon** (Boulder Mountain Parks). Territory occupied, but nesting either failed or was not attempted.
- **Third Flatiron** (Boulder Mountain Parks). This territory was used by peregrines.
- **Mount Sanitas** (private). Not investigated.
- **Steamboat Mountain** (private). Not investigated.

Peregrine Falcon

In 1997, three sites were known to be active, all successfully fledging young, for a total of nine. This species is making a very good comeback to Boulder County. Table 3 summarizes nesting status from 1991 to 1997.

- **Eldorado Mountain** (Boulder City Open Space). Active; three young fledged.
- **Matron** (Boulder City Open Space). Active; three young fledged.
- **Shadow Canyon** (Boulder Mountain Parks). Inactive, as the alternate site at the Matron was used.
- **Third Flatiron** (Boulder Mountain Parks). Active; three young fledged..
- **Steamboat Mountain** (private). Not investigated.

PROTECTIVE MANAGEMENT

Boulder Mountain Parks

Skunk Canyon is closed to hikers and rock-climbers west of Ridge Two from February 1 through July 31 every year to protect the nesting golden eagles. The Sacred Cliffs, or south ridge of Green Mountain, which is the favored perch of the eagle pair, is also closed to all use. Lefthand Palisades is closed to all use from February 1 through July 31. Closures to protect falcons were in effect for part of the Third Flatiron, the north side of Fern Canyon, off-trail use in Shadow Canyon, and the north ridge of Shadow Canyon (Devil's Thumb Ridge) from Jam Crack Spire and Towers of the Moon at the canyon mouth up to Bear Peak.

Boulder City Open Space

Mickey Mouse Wall on Eldorado Mountain and The Matron were closed to rock-climbing from February 1 through July 31.

Eldorado State Park

Several climbing routes were closed on Red Garden Wall (where there was an active prairie falcon nest in 1991), and some on Upper Peanuts Wall (where prairie falcons nested in 1990). When a pair of falcons chose a new nest site on Red Garden Wall, an additional closure was added to protect them. The Park conducted much educational outreach, such as giving slide shows at mountaineering shops, to explain the need for raptor protection. Compliance with the closures was very good overall, with only a few violations noted.

Roosevelt National Forest

Eagle Rock in Boulder Canyon was posted closed to climbing from February 1 to July 31. No violations were observed. The Lower St. Vrain eagle nest in South St. Vrain Canyon has never been posted, because in the past there were very few rock climbers in the area, and the Division of Wildlife district manager was reluctant to draw attention to the nest by posting signs. Unfortunately, climbing activity in that canyon is increasing, and in 1997 we saw our first observation of a climber within about 50 feet of the nest, which had one young chick on it. The adult eagle was flying in the area but would not approach the nest as long as the climber was nearby. In the future it will probably be necessary to close this area to climbing.

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Table 1. Boulder County Golden Eagle nest status

| Territory (south to north) | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
|---|------------------|--|--|---|--|-------------------------------|-------------------------------|--|---------------------------------------|---|--|---|---|---|----------------------------------|---|
| Eldorado Springs (Eldorado Canyon) | 1 adult seen | Incub., Mouse Ears; failed | Terr. active* | 1 yg. fledged,** N. of Mouse E. | Terr. active | Undetermined | Undetermined | Terr. active | Undetermined | Inactive | Inactive | Inactive | Inactive | Inactive | Inactive | Inactive |
| Skunk Canyon | Not investigated | 2 yg. fledged, Inferno | 1 yg. fledged, Inferno | 2 yg. fledged, Superpower | 2 yg. fledged, Inferno | Terr. active, did not nest | Terr. active, did not nest | 2 yg. fledged, Inferno | 1 yg. died after fledging, Inferno | Nest failed, Inferno | Terr. active, no nest attempt | 1 yg. fledged | Terr. active, nest failed | Terr. active, no nest attempt | 1 yg. fledged, Superpower | 1 yg. flgd., Sup- erpower; 1 died |
| Boulder Canyon | Terr. active | Terr. active | 2 yg. fledged, Eagle Rock | 1 yg. fledged, Eagle Rock | At least 1 yg. fledged, Bitty Buttress | Undetermined | Incub. Eag. Rock; failed | 1 yg. fledged, Blob Rock; 1 yg. died | 2 yg. fledged, Eagle Rock | 1 yg. fledged, Eagle Rock, 1 yg. died | Nest failed during incubat., Blob Rock | Nest failed during incubat., Bitty Buttress | Nest failed during incub., Eagle Rock | 1 yg. fledged, Eagle Rock, 1 yg. died | 1 yg. fledged, Eagle Rock | Nest failed during incub., Eagle Rock |
| North Fork | Terr. active | Terr. active | 2 subadults seen | Not investigated | Undetermined | Undetermined | Undetermined | Not investigated | Terr. active | Not investigated | Terr. active | Not investigated | Not investigated | Terr. active | Not investigated | Not investigated |
| Boulder North | Not investigated | Not investigated | Not investigated | Not investigated | Not investigated | Not investigated | Not investigated | Not investigated | Not investigated | Not investigated | Not investigated | Not investigated | Not investigated | 1 yg. fledged | Not investigated | Not investigated |
| Lefthand Palisades | 1 yg. fledged | Terr. active | 2 yg. fledged | 2 yg. fledged | 1 yg. fledged | Incub., nest failed | 1 yg. fledged | Nest failed | 1 yg. fledged, Palisades South | Nest failed dur- ing incubation | 1 yg. fledged, Palisades North | 2 yg. fledged, Palisades North | Terr. active | 1 yg. fledged, Heil Ranch | 1 yg. fledged, Palisades | 1 yg. fledged, Palisades North |
| Lower St. Vrain | Terr. active | New mate; late nest-building, unsuccessful | 2 yg., nest fell off cliff; fate unknown | 2 yg. fledged, "Cracking Dome" nest | 2 yg. fledged, "Cracking Dome" nest | 1 yg. fledged | Terr. active | Terr. active, taken over by ravens | 1 yg. fledged, Cracking Dome | Unknown | Terr. active | 1 yg. fledged, Cracking Dome | Inactive | Nest failed, Cracking Dome | 1 yg. died, Cracking Dome | 1 yg. fledged, Cracking Dome |
| Upper St. Vrain | Terr. active | 1 yg., S. Sheep Mtn.*** | Terr. active | Terr. active | Terr. active | Terr. active | 2 yg. S. Sheep Mtn. | Terr. active | Terr. active | Terr. active | Terr. active | Terr. active | Inactive | Not investigated | Not investigated | Terr. active |
| Lyons | Not investigated | Not investigated | Not investigated | Not investigated | 1 yg., tree nest Stone Canyon | Pair carry- ing sticks | 2 yg. | At least 1 yg. fledged | 2 yg. fledged, Meadow Park | 1 yg. fledged Meadow Park | nest failed, Meadow Park | 2 yg. fledged, Meadow Park | 2 yg. fledged, Meadow Park | 2 yg. fledged, Meadow Park | 1 yg. fledged, Meadow Park | 1 yg. fledged, Meadow Park |
| Rabbit Mtn. | Not investigated | Not investigated | Not investigated | Not investigated | Not investigated | Not investigated | Not investigated | Not investigated | 2 yg. fledged | Not investigated | 2 yg. fledged, Rhino's Horn W | 2 yg. fledged, Rhino's Horn W | 1 yg. fledged, Rhino's Horn E | Nest failed, 1 yg died, R. Horn W | 1 yg. fledged, Rhino's Horn W | 2 yg. fledged, Rhino's Horn W |
| Total young presumed fledged from 10 territories | 1 | 3 | 7 | 8 | 7 | 1 | 5 | 4 | 8 | 2 | 3 | 8 | 3 | 5 | 5 | 6 |

† Undetermined means insufficient field work to establish territory status.
 * Territory active means frequent sightings of eagles in territory, but no active nest found.
 ** Young fledged means either that young were observed flying or that they were fully feathered and successful fledging was assumed.
 *** If fledging not specified, means that young were seen early in the season and later visits were not made to confirm fledging.

Table 2. Boulder County and vicinity Prairie Falcon nest status

| Territory (south to north) | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
|--|------------------|------------------|--------------------------------|------------------------------------|-----------------------------|------------------|---------------------------------|--|---------------------------------|-------------------------------------|-------------------------------------|----------------------------------|---------------------------|--------------------------------------|---|
| Bull Gulch | Not investigated | Not investigated | 3 yg. fledged** | Terr. active* | 5 yg. fledged | Undetermined† | At least 1 yg. fledged | 4 yg. fledged | 4 yg. fledged | Undetermined | Undetermined | Inactive | Not investigated | Not investigated | Not investigated |
| Eldorado Mtn. (Mickey Mouse Wall) | Terr. active | Terr. active | Terr. active | Inactive*** | Inactive | Inactive | At least 2 yg. fledged | 4 yg. fledged | Terr. active | Nest active, productivity unk. | 4 yg. fledged South Tower | 4 yg. fledged E. of RR tracks | Terr. active | Est. 3? yg. flgd E of RR | Est. 4 yg. flgd east of RR |
| Eldorado Canyon (State Park) | Not investigated | Not investigated | 4 yg. fledged | Inactive | Inactive | Inactive | Undetermined | 2 yg., Upper Peanuts | 2 yg., Red Garden Wall | Inactive | Inactive | Inactive | Inactive | Inactive | 2 yg. fledged Red Garden Wall |
| Shadow Canyon | Not investigated | 4 yg. fledged | Terr. active | Terr. active | 2 yg. fledged | Terr. active | Yg. heard, not seen | At least 2 yg. fledged | Terr. active | At least 1 yg. | Displaced by peregrines | Terr. active | Inactive | Terr. active | Terr. active, sus- pect nest failure |
| Fern Canyon | Not investigated | 3 yg. fledged | 5 yg. fledged | 1 yg. on ground; nest not found | 3 yg. fledged | Inactive | Inactive | Est. 2 yg. fldgd, by calls; nest not found | Terr. active | At least 2 yg. fledged, E. Ridge | Nest active, pro- ductivity unk. | 5 yg. fledged | 3 yg. fledged | 3 yg. fledged | 4 yg. fledged |
| Bear Canyon | Not investigated | Terr. active | 4 yg. fledged | Incub.; failed | 4 yg. fledged | 4 yg. fledged | Nest used by ravens | Inactive | Inactive | Inactive | Inactive | Inactive | Terr. active | Terr. active, no nest, Back Porch | Terr. active, no nest, Bear Can. |
| Third Flatiron | Terr. active | Terr. active | 1 yg. fledged, Queen Anne's | Not investigated | 4 yg. fledged, West side | Terr. active | At least 3 yg. fledged, West | At least 3 yg. fledged, West | 5 yg. fledged, West site | 4 yg. fledged, Queen Anne's | Nest active, pro- ductivity unk. | Pair displaced by peregrines | Occupied by peregrines | Occupied by peregrines | Occupied by peregrines |
| Mt. Sanitas | Not investigated | Not investigated | Not investigated | Not investigated | Not investigated | Not investigated | Terr. active | 4 yg. fledged, S. Cedarbrook | 3 yg. fledged, S. Cedarbrook | Inactive | Inactive | Inactive | Inactive | Not investigated | Not investigated |
| Steamboat Mtn. | Not investigated | 1 yg. fledged | 3 yg. fledged | Not investigated | Not investigated | Undetermined | At least 2 yg. fledged | At least 3 yg. fledged | Site occupied by peregrines | Briefly occupied by 1 peregrine | Inactive | Inactive | Inactive | Not investigated | Not investigated |
| Total young produced from 9 territories | 0 | 8 | 20 | 1 | 18 | 4 | 8 | 22 | 14 | 6 | 4 | 9 | 3 | 6 | 10 |
| *Territory active means frequent sightings of falcons in territory, but no active nest found. | | | | | | | | | | | | | | | |
| **Young fledged means that either young were observed flying or they were fully feathered and successful fledging was assumed. | | | | | | | | | | | | | | | |
| ***Inactive means we saw no falcons during our visits and assumed territory to be unoccupied. | | | | | | | | | | | | | | | |
| †Undetermined means insufficient field work to establish territory status. | | | | | | | | | | | | | | | |

Table 3. Boulder County Peregrine Falcon nest status

| Territory | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
|--|----------------------------|----------------------------|----------------------------|-------------------------------|------------------------|---|------------------------|
| Eldorado Mtn. | Inactive*** | Inactive | Inactive | Inactive | Inactive | 1 yg. fledged; (2 eggs) | 3 yg. fledged |
| Matron | 3 yg. fledged** | Alternate site used | Alternate site used | 2 yg. hatched, nest failed | Alternate site used | 3 yg. fledged | 3 yg. fledged |
| Shadow Canyon | Inactive | 1 yg. fledged | 2 yg. fledged | Alternate site used | Nest failed | Alternate site used | Alternate site used |
| Steamboat Mtn. | Terr. active* | Inactive | Inactive | Inactive | Inactive | Undetermined† | Undetermined |
| Third Flatiron | Used by prairie falcons | Used by prairie falcons | Used by prairie falcons | 2 yg. fledged | Nest failed | Active; female hybrid & eggs removed, DOW. | 3 yg. fledged |
| | | | | | | Re-nest w/ new mate failed (1 of 2 eggs hatched; yg. died) | |
| Total yg. known out of 4 territories | 3 | 1 | 2 | 2 | 0 | 4 | 9 |
| *Territory active means frequent sightings of falcons in territory, but no active nest found. | | | | | | | |
| **Young fledged means that either young were observed flying or they were fully feathered and successful fledging was assumed. | | | | | | | |
| ***Inactive means we saw no peregrine falcons during our visits and assumed territory to be unoccupied by this species. | | | | | | | |
| †Undetermined means insufficient field work to establish territory status. | | | | | | | |