

Boulder County Parks and Open Space 2016 Burrowing Owl Monitoring Summary



Prepared by:

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Introduction

For the ninth consecutive year, we recruited volunteers to monitor prairie dog colonies on Boulder County Parks and Open Space properties for nesting burrowing owls. The purpose of this study is to locate burrowing owl nests, determine the rate of nesting success, and devise strategies for protecting and enhancing nesting areas.

At a volunteer training in April we assigned individual prairie dog colonies to individual volunteers or small teams of volunteers. Monitoring was conducted from mid-April to October, with each volunteer or team of volunteers visiting their adopted prairie dog colony four times and volunteers visiting areas with active nests weekly.

Methods

Ten-minute observations were conducted from approximately 128 fixed points on 36 properties, with at least one observation occurring within each of four time periods: 15 April-15 May, 16 May-15 June, 16 June-15 July, and 16 July-15 August. Suspected nests were observed weekly until all young had fledged or the nesting attempt was determined to have failed. Volunteers submitted a field form after each observation detailing what they had seen. They were also asked to submit observations of other raptors and other Boulder County birds of special concern (Hallock and Jones 2010).

During 2016, a total of 39 volunteers plus 2 seasonal staff devoted 600 total hours to the training, monitoring, and data compilation effort:

- 479.5 total volunteer hours submitted to wufoo

- 45 indoor and outdoor training hours

- 40 hours for training, coordination, and compilation support by Sue Cass and Steve Jones

- 42.25 additional hours from BCPOS seasonal staff surveys at 13 locations

Results and Discussion

Burrowing owls were observed on a single property, Swanson, south of Longmont. Two adult owls were seen within a small (< 10 ha) prairie dog colony on this largely agricultural property on 11 April and 15 April, and behaviors of the adults suggested that nest building had begun by 15 April and incubation by 31 May. Four young were observed running and fluttering around on the dirt road south of the nest burrow on 29 June (Beccy and Joe Pem, Jamie Simo).

Observers reported seeing all four young within 50 m of the presumed nesting burrow on 6, 13, 21, and 28 July; 4, 11, and 17 August; and 1, 6, and 7 September (Beccy and Joe Pem, Jamie Simo). From these observations we conclude that four young fledged from this nest and all survived into autumn. Three young owls were observed at this site on 16 September and a single young owl on 22 and 24 September.

Table 1. Burrowing Owl Nesting Chronology.

Property	Owls First Seen	Incubation Initiated	No. Young (Date)	No. Fledged (Date)
Swanson	11 April	18-31 May	4 (29 June)	4 (13 July)

This is the fourth consecutive year that a nest on the Swanson property has fledged three or more young and the fourth consecutive year when no other nesting pairs were detected on Boulder County Parks and Open Space properties.

Table 2. Burrowing owl nesting observations on Boulder County Parks and Open Space properties, 2011-16. Nests/young observed.

Year	Darby	Lagerman	Rock Creek Farm Cradleboard	Rock Creek Farm N	Rock Creek Farm SE	Swanson	Warembourg
2011			1/3	1/6	1/6		
2012	1/3	2/3		2/0			1/3
2013						1/5	
2014						1/5	
2015						1/4	
2016						1/4	

The four young fledged from the Swanson property nest in 2016 equal the lowest total of young observed on Boulder County Parks and Open Space properties since we began formal monitoring in 2008 (Table 2). In 2013 burrowing owls were observed on 7 properties, but only a single nesting attempt was observed, on the Swanson property, fledging four young. In 2014 a single nesting attempt on Swanson produced 5 young, and in 2015 a single nesting attempt on Swanson produced 4 young. These numbers, along with recent nest productivity numbers for Boulder Open Space and Mountain Parks, Boulder Parks and Recreation and Louisville Open Space properties (Table 3), suggest that burrowing owl nesting success has diminished throughout Boulder County from 2008-16.

Table 3. Burrowing Owl Nesting Success on Parks and Open Space Properties in Boulder County, 2008-15. Nesting attempts/total young observed.

Years	Boulder County Parks and Open Space	Boulder Open Space and Mountain Parks ¹	Boulder Parks and Recreation ²	Louisville Open Space ³	Total
2008	2/10	7/22	0/0		9/32
2009	7/10	6/7	0/0		13/17
2010	4/12	5/10	0/0		9/22
2011	3/15	6/18	0/0		9/33
Years	Boulder County Parks and Open	Boulder Open Space and Mountain Parks ¹	Boulder Parks and Recreation ²	Louisville Open Space ³	Total

	Space				
2012	6/9	3/11	0/0		9/20
2013	4/4	3/13	0/0		7/17
2014	1/5	2/13	0/0		3/18
2015	1/4	2/10	0/0	1/4	4/18
2016	1/4	4/12	0/0	1/NA	5/16
2008-16	28/69	34/104	0/0	1/4	63/195

¹ Will Keeley and Christian Nunes, pers. comm.

² Jones 2016.

³ Chris Petrizzo, pers. comm.

Additional Observations of Boulder County Birds of Special Concern and of Special Interest (Hallock and Jones 2010)

Wood Duck

Flagg Park, 27 April. Pair flying through (Stuber).

Black-crowned Night Heron

Rock Creek Farm, 2 June. One perched on top of flight cage (Henley and McCasland).

Great Blue Heron (heronries only)

Flagg Park, 27 April. Active heronry with at least 11 nests, at least 6 occupied (Stuber).

Flagg Park, 12 June. Many large young herons in nests (Stuber and Coffee).

Snowy Egret

Warembourg, 4 May. Four observed (Lawrence)

Ring-necked Pheasant

Keyes North, 14 July. Adult female flushed near #52 (Cass).

Northern Harrier

AHI-Lagerman, 4 April, one hunting over cattails (Smith).

AHI-Lagerman, 11 April, one perched on ground (Smith).

AHI-Lagerman, 22 April, pair perched and flying over cattails marsh where they nested in 2015 (Andes-Georges).

Lagerman, 2 May, pair observed (Bryan).

Beech, 5 May. Male hunting (Latch).

AHI-Lagerman, 19 May. Female perched in cattails then returned to nest site (Andes-Georges).

Lagerman, 29 May. Male observed (Bryan).

AHI-Lagerman, 9 June. None observed (Andes-Georges).

Broomfield North, 12 June. One flying over (Laursen).

Imel, 16 June. Two hunting near 183 (Witkin).

AHI-Lagerman, 25 June. None observed (Andes-Georges).

Wolf Run/Centennial, 8 July. One hunting (Crawford).

Mayhoffer/Carlston-Lastoka. Juvenile hunting over wetland (Clark and Lupfer).

Osprey

AHI-Lagerman, 4 April. Two perched on nesting pole and gathering nesting materials (Smith).

11 April. Two perched on nesting pole and gathering nesting materials (Smith).

22 April. Occupied nest (Andes-Georges).

75th and Nelson, 4 April, two perched on nesting platform, (Smith).

AHI-Lagerman, 9 June. One young visible on nest (Andes-Georges).

AHI-Lagerman, 25 June. Two young visible on nest (Andes-Georges).

Lagerman, 12 July. Two young on nest, prey delivery (Bryan).

Bald Eagle

Hirschfield, 12 April. Two adults perched on pole close to nest site (Smith).

Imel, 21 and 22 April. Both adults present on and around nest (Andes-Georges, Witkin).

Weidemeyer/Brawley/Kenosha. Adult on powerline west of survey area (Mah).

Lagerman, 2 May. Adult bald eagle observed (Bryan).

Mayhoffer/Carlson/Lastoka. One soaring east of point 90 (Simo and Smith).

AHI-Lagerman, 19 May. Adult flying toward 75th St. (Andes-Georges).

Imel, 19 May. 2 adults and two juveniles on nearby nest (Witkin).

Rock Creek Farm Parrot's Beak, 29 May. One adult being chased by Red-tailed Hawks (Kampert).

Bailey-Kenosha-Doniphan, 29 May. Adult bald on powerline above point 75 (Mah).

Lagerman, 29 May. Adult observed flying (Bryan).

AHI-Lagerman, 29 June. One adult flying over (Andes-Georges).

Rock Creek Farm, 4 July. Pair soaring overhead (Sommerer and Cutter).

Lagerman, 13 August. Two youngsters, apparently fledglings (Bryan).

Cooper's Hawk

Warembourg, 4 May. Two circling high overhead (Lawrence).

Broomfield North 40, 9 August. One perched on fencepost and hunting (McCasland and Henley).

Golden Eagle

Rock Creek Farm, 12 April. Adult flyover (Smith).

Beech, 4 May. One juvenile hunting and a pair courting, (Latch).

Hicks-Spath, 7 August. One soaring near point 127 (Kleinman).

Swainson's Hawk

Keyes North, 25 April. Three flying out from cottonwoods and appearing territorial (Cass and Cass).

Liley, 25 April. One circling over property (Cass and Cass).

Flagg Park, 27 April. One circling over property (Stuber).

Mayhoffer/Carlson/Lastoka, 15 May. One soaring over point 90 (Simo and Smith).

Darby, 22 May. One perched on south side of prairie dog colony (Laubach).

Broomfield North, 12 June. One perched on fencepost (Laursen).

Mayhoffer/Carlson-Lastoka, 16 June. One on utility pole near McCasland and Rock Creek (Clark and Lupfer).

Hillside Estates, 21 June. One circling over property, apparently hunting (Whitehall and Redak).
Keyes North, 14 July. One circling over property (Cass and Cass).
Liley, 14 July. Adult male circling over and hunting over property (Cass and Cass).
Rock Creek Farm, 3 August. One adult (Cutter and Sommerer).
Keyes North, 8 August. One juvenile begging for food (Cass and Cass).
Imel, 11 August. Territorial pair (Witkin).
Broomfield North, 14 August. One individual (Laursen).
Mayhoffer/Carlson-Lastoka, 14 August. One soaring over parking lot (Clark and Lupfer).
Swanson, 7 September. One perched near road (Pems).

Ferruginous Hawk

Rock Creek Farm, 3 August. Pair perched on fence posts (Cutter and Sommerer).

Red-tailed Hawk (nesting reports only)

Keyes North, 25 April. Nest with two young in former bald eagle nest 250 m west of bridge (Cass and Cass).
Liley, 25 April. One circling over property (Cass and Cass).
Mayhoffer, 27 April. One circling over property (Wise).
Flagg Park, 27 April. One observed (Stuber).
Broomfield North, 4 May. One perched on and flying over the property (Henley and McCasland).
Mayhoffer-Carlson/Lastoka, 16 June. Active nest on second power tower south of Rock Creek (Clark and Lupfer).
Beech, 27 June. Territorial pair (Latch).
Wolf Run/Centennial, 8 July. Two juveniles circling overhead (Crawford).
Adler-Fingru, 12 July. Four soaring and hunting over property (Wegman-French).
Warembourg, 2 August. Adult with fledgling (Lawrence).
Keyes North, 8 August. Two adults with one juvenile (Cass and Cass).

Long-billed Curlew

Lagerman, 2 May. One seen (Bryan).

Great Horned Owl

Flagg Park, 27 April. Occupied nest (Stuber).
Rock Creek Farm, 4 July. One found dead between points 105 and 114 (Sommerer and Cutter).
Warembourg, 5 July. Juvenile great horned owl perched in cottonwood near point 136 (Lawrence).
Mountain View Egg Farm-Armstrong, 12 July. Two observed, couldn't tell if mature or not (Jamison and Bolduc).

Prairie Falcon

Rock Creek Farm, 12 May. One flying over (Sommerer, Carter).

Common Nighthawk

Beech, 2 June. A flock of 22 flying north (Latch).

Loggerhead Shrike

Wolf Run/Centennial, 25 April. One present (Crawford).
Mayhoffer, 27 April. Three observed (Wise).
Mayhoffer/Carlson/Lastoka. One seen (Simo and Smith).
Mountain View Egg Farm-Hazelwood/Armstrong, 15 June. One observed (Jamison and Bolduc).
Mountain View Egg Farm-Hazelwood/Armstrong, 12 July. At least two observed (Jamison and Bolduc).
DeBerry, 5 August. One flushed from perch (Simo).

Northern Mockingbird

Rabbit Mountain, 9 May. Seen at point 151 (Such).

Sage Thrasher

Mayhoffer/Carlson-Lastoka, 14 August. One seen (Clark and Lupfer).

Grasshopper Sparrow

Mayhoffer, 27 July. Two adults and two fledglings (Wise).
Rabbit Mountain, 1 August. Two observed (Such).

Lark Bunting

Rock Creek Farm SE parcel, 29 July. 6 adult males on fence line (MacLachlan).

Savannah Sparrow

Flagg Park, 27 April. One observed (Stuber).

Cassin's Sparrow

Rabbit Mountain, 7 July. One observed (Such).

Coyote dens and family groups

DeBerry, 29 May. Adult with three pups between points 3 and 4 (Klaver).
AHI-Lagerman, 25 June. Two pups observed (Andes-Georges).
Broomfield North, 7 July. Adult with pup (Laursen).
Adler-Fingru, 12 July. Four pups along fence line (Wegman-French).
Liley, 14 July. One adult with one pup (Cass and Cass).

Rattlesnakes

Hicks-Spath, 16 July. One observed (Kleinman).

Disturbance Reports

AHI-Lagerman, 22 April. Prairie dog colonies where burrowing owls nested historically have been converted to cropland (Andes-Georges).

Swanson, 25 April. Tractor was spraying the area with herbicides from 0830-0915, passing within 5 m of active burrowing owl nest.

Liley, 25 April. Huge amount of trash has blown onto property from industrial zone and highway to the west (Cass and Cass).

Mayhoffer, 27 April. Almost impassable weed (knapweed?) infestation west of points 86 and 87 (Wise).

Keyes North, 5 June. No prairie dogs left, area appears to have been scraped/leveled. Red-tailed hawk nest which supported young during first visit appears to be abandoned (Cass).

Rock Creek Farm, 4 July. Most of prairie dog colony is now a plowed field near 114; only one prairie dog visible (Sommerer and Cutter).

Warembourg, 5 July. Much of the area, especially west of 232, is so dry that it is lacking nearly all vegetation (Lawrence).

Mountain View Egg Farm/Armstrong/Hazelwood, 25 June. Much of ecosystem has been destroyed by oil extraction (Jamison and Bolduc).

COHIG, 14 May, 7 July. Most prairie dog colonies completely gone or greatly reduced (Hill and Lawry).

Keyes North, 14 July. Most of prairie has been plowed or flattened, with winter wheat planted and most prairie dog burrows gone (Cass and Cass).

Issues

Rock Creek Farm Parrots Beak: Map needs updating to reflect changes in access to property and to one point that is being encroached on by gas well (Kampert).

Ruth Roberts, 3 June. Survey point has no assigned number (Wegman-French).

512 (6/11) is missing. 516 (6/11) also missing.

Kenosha-Bailey-Doniphan-Wittemeier, 25 June. No prairie dogs near points 31 or 172 (Mah).

Literature Cited

Hallock, Dave, and Stephen Jones. 2010. Boulder County avian species of special concern. Boulder County Nature Association, PO Box 493, Boulder, CO 80306; www.bcna.org.

Jones, Stephen. 2016. Boulder Reservoir 2016. Birds of Special Concern Monitoring Report. Unpublished report for Boulder Parks and Recreation Department, 3198 Broadway, Boulder, CO 80304.

Appendix I. Observers Reporting

Volunteers: Linda Andes-Georges, Dale Ball, Bill Bolduc, Kerry Bryan, Alan Cass, Sue Cass, Karen Clark, Sue Coffee, Jean Crawford, Ruth Carol Cushman, Michael Cutter, Renée Haip, Brinda Henley, Elaine Hill, Joan Jamison, Steve Jones, Carol Kampert, Elena Klaver, Peter Kleinman, Maureen Last, Lark Latch, Kristin Laubach, Sandra Laursen, Viki Lawrence, Maureen Lawry, Joe Lupfer, Petrea Mah, Carol McCasland, Janet McLachlan, Beccy Pem, Joe Pem, Connie Redak, Joy Sommerer, Mary Stuber, Joel Such, Lisa Wegman-French, Mort Wegman-French, Cal Whitehall, Maikel Wise, Susan Wise, Howard Witkin.

Seasonal Staff: Jamie Simo, Jordan Smith.

Appendix II. 2016 Nesting Observations

Swanson

- 11 April. One perched next to the access road going into northern side of site (Smith).
15 April. Pair perched and flying near entrance road. Courtship, delivery of nesting materials, hunting--the female caught a vole, took it down a burrow, and came back up without it. Cheeping alarm calls directed at observers (Pems).
25 April. Pair present. Male apparently guarding the nest site, and female popped up for a few seconds. Tractor was spraying the area with herbicides from 0830-0915, passing within 5 m of nest (Smith).
11 May. Both adults present, standing together on/near burrow and bringing nest materials to burrow. Female eating large vole (Pems).
18 May. Pair standing by nest site (Pems).
24 May. No owls observed (Pems).
31 May. Both adults present on nest burrow and adjacent burrow (male). Male brings in frog to female. Female ducks down into nest burrow when private airplane flies over. Male also ducks down when another plane flies over (Simo).
3 June. Male standing watching over nest, female not visible presumed incubating (Pems).
11 June. Both adults visible and interacting near nest burrow. Two food deliveries by male to female (Pems).
29 and June. Four young running and fluttering around on the dirt road while both adults delivered prey (Pems).
6 July. Both adults and four young present. Two prey deliveries by male during 30 min. (Pems).
13 July. Both adults and four young active then flying around; young seem to be catching prey on their own (Pems).
21 July. Both adults and four young active and hunting on their own (Pems).
28 July. Both adults and four young active and hunting on their own (Pems).
3 August. Only two of burrowing owls observed--may be hiding in the grass on a hot afternoon (Pems).
4 August. Four young appeared to pop up periodically from a common nest burrow. Did not see adults (Pems).
11 August. For young flying, hunting, preening. Adults appear to be gone (Pems).
17 August. For young flying, hunting, preening; apparently more spread out than before. Adults appear to be gone (Pems).

24 August. Just three young owls seem, mostly flying over adjacent fields (Pems).
1 September. Four young owls observed again, spread out in prairie dog colony and even across road, mostly perched on mounds (Pems).
6 September. Four young owls mostly standing on mounds on south side of dirt road (Simo).
7 September. Still present on various mounds. Chronology: Courtship, 15 April; Nest building 15 May; Incubation, 23 May; Visible Young, 29 June (Pems).
16 September. Three young observed, mostly hunkered down in burrow openings (Simo).
20 September. No owls seen (Simo).
22 September. One owl hunkered down low in burrow (Simo).
24 September. One burrowing owl foraging and perched on burrow mound not far from nest burrow (Pems).
30 September. No burrowing owls observed (Pems).

Coalton Trail (City of Boulder)

1 April. 2 seen (Wise).
12 April. 4 seen (Wise).
27 April. 2 seen (Wise)
16 June. 3 burrowing owls perched on ground and fencepost on Boulder city open space west of points 78 and 86 (Wise).

Literature Cited

Hallock, Dave and Stephen Jones. 2010. Boulder County avian species of special concern. Boulder County Nature Association: www.bcna.org.