

## **Boulder County Parks and Open Space 2019 Burrowing Owl Monitoring Summary**



Photo by Sue Cullen, BCPOS deputy, 2014.

### **Prepared by:**

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**3 December 2019**

## **Thank you, Volunteers!**

On behalf of Boulder County Parks & Open Space, I would like to thank all the BCNA and BCAS members who participated in the 2019 survey effort, and to those who have continued to support the program year after year! Special thanks to Sue Cass and Steve Jones, who have carried the torch for this program for over a decade. This program runs on their enthusiasm and passion for wildlife, open spaces, public engagement, and good data.

Thank you to volunteer monitors: Danielle Pyevich, Emily Friedberg, Linda Andes-Georges, Lark Latch, Sandra Laursen, Robert & Ru Wing, Maureen Lawry, Bryce Bolton, Kristin Laubach, Carol Stock, Howard Witkin, Kerrie Bryan, Larry Arp, Joe Falke, Paula Hansley, Peter Kleinman, Brinda Henley, Carol McCasland, Lysa & Mort Wegman-French, Carol Kampert, Connie Redak, John Nelson, Joe & Beccy Pem, Bev Cole, Viki Lawrence, and Jean Crawford. And thank you to our BCPOS wildlife technician, Jordan Smith, for another year of helping with this program.



*Photo: Steve Jones and Sue Cass providing training to volunteers.*

## **Sensitive Data Policy**

Annual summaries of burrowing owl monitoring do not include discrete locations or detailed maps of nest sites but will provide general locality so that participants might understand the distribution of the species from year to year. Boulder County Parks and Open Space adopted a Sensitive GIS Data Policy which describes the criteria used for determining which data are sensitive, and provides guidance for the handling, release, and protection of information related to those cultural and natural resources. The nest locations of burrowing owls and other raptors is included in this policy because it is considered sensitive information. As stewards of natural resources, BCPOS has the responsibility to balance the protection of these resources - in this case the nest sites of rare, declining, and protected species- with the desire of the community to appreciate and preserve them. Under specific inter-agency agreements, nest locations and data are shared with appropriate entities on an annual basis.

## Introduction

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

At a volunteer training in April 2019 we assigned prairie dog colonies to individual volunteers or small teams of volunteers. Monitoring was conducted from mid-April to mid-August, with each volunteer or team of volunteers visiting their adopted prairie dog colony one time during each of four survey blocks. Volunteers who discover burrowing owls nesting on their assigned colony begin weekly monitoring until the owls depart the nesting territory, usually in late September or October.

## Methods

General surveys consisting of ten-minute observations from fixed points were conducted from approximately 124 points on 27 properties. There are four general survey periods, with at least one survey 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. Volunteers are encouraged to continue observation and reports while young disperse throughout the colony, which assists staff with internal management inquiries that continue through fall. Volunteers are also asked to submit observations of other raptors and other Boulder County birds of special concern (Hallock and Jones 2010).

During 2019, 33 volunteers plus 1 seasonal staff and 2 staff biologists devoted **430** total hours to the training, monitoring, and data compilation effort. Total hours are generally higher, however not all staff site visits or meetings with volunteers are recorded.

346 recorded volunteer and staff field hours

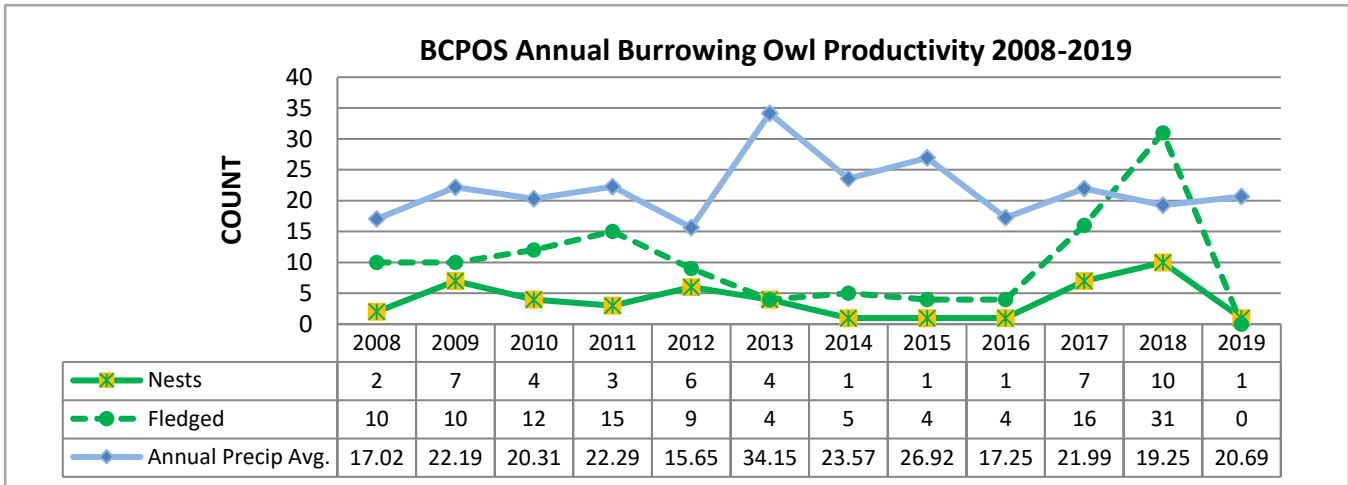
44 indoor and outdoor training hours

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

## Results and Discussion

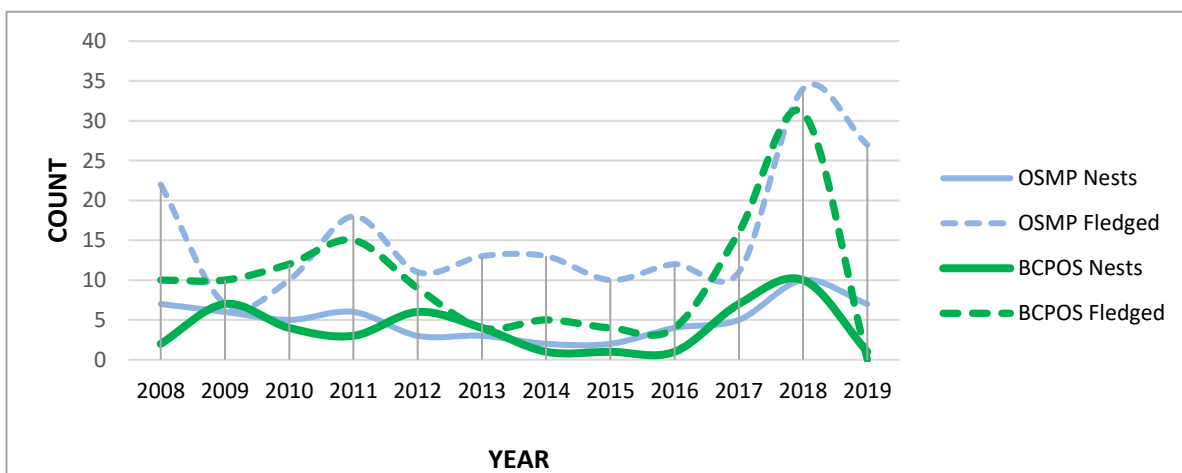
Burrowing owls were observed on three Boulder County Parks & Open Space properties during the season: a single sighting of two individuals on a southwest grassland parcel, a pair and single individual utilizing the southeast county grasslands complex, and a single observation of one adult at a northern county parcel in mid-April. These sites were all previously occupied territories, and all were diligently monitored for returning owls, however no owls were detected at most historic nest sites.

Both 2017 and 2018 had higher nest events than previous years, with 2018 being a banner year for BCPOS, fledging approximately 31 young from 10 sites. In 2019, a single nest site produced three young, but no evidence of successful fledging was observed.



*Figure 1: Annual nesting results 2008-2019 shows the number of nests located and monitored on BCPOS and the number fledged each year. After a banner year in 2018, BCPOS once again had only one nest event.*

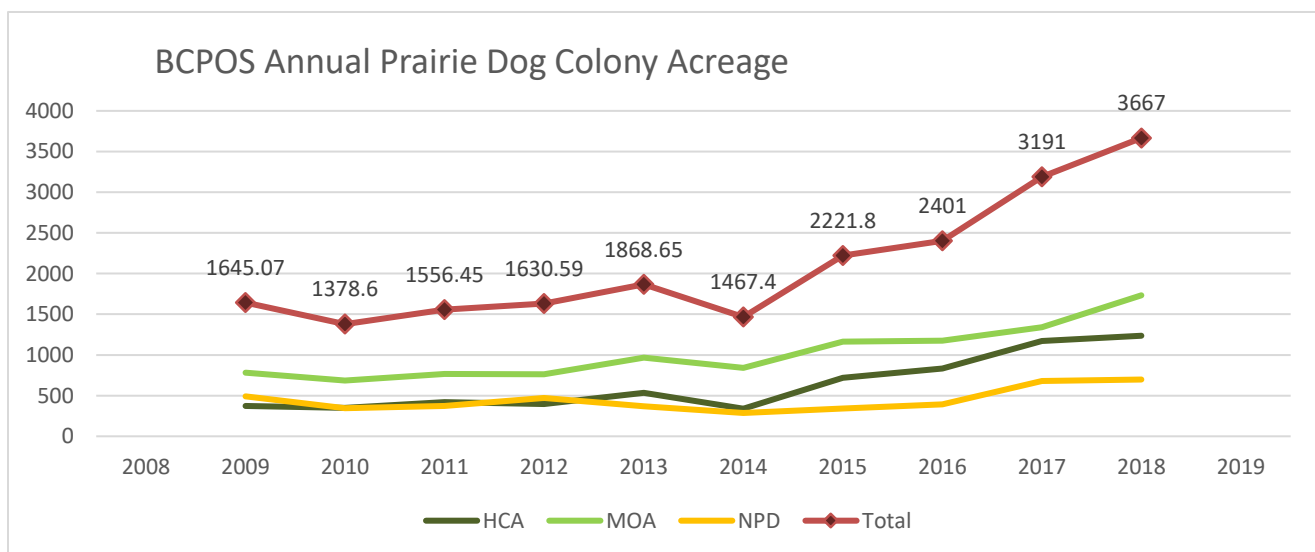
While BCPOS continues to see fluctuations in owl annual occupancy, City of Boulder’s Open Space and Mountain Parks division had a total of 7 nests and 27 fledglings in 2019, maintaining an 8-year average with more consistent occupancy by owls. It is unclear why BCPOS has inconsistent nesting, however differences exist between the habitat characteristics and management activity on BCPOS and OSMP that may provide some clues: the presence or lack of human disturbance or recreation, prairie dog colony characteristics, landscape features and agricultural practices which may cause changes in habitat suitability.



*Figure 2: Comparison of annual nesting and fledge counts, City of Boulder OSMP and BCPOS.*

Like BCPOS, in 2018 the Bird Conservancy of the Rockies (BCR) also recorded an increase in the number of nesting pairs of burrowing owls at a study site north of Fort Collins. In the past 5-6 years BCR has noted population fluctuations and observed temporary increases in nesting for 3-4 years after a reduction in prairie dog numbers occurs due to a plague event. In 2019, BCR recorded a steep decline in nesting owls following the increase in 2018. Colorado Parks and Wildlife may have observed similar trends on City of Fort Collins lands they monitor, with upwards of 40 nests in 2018 and only 6 in 2019 (Youngberg, personal communication, September 23, 2019).

Since 2014, the total acreage of BCPOS land occupied by prairie dog colonies has increased. At locations such as Lagerman Reservoir and the adjacent agricultural land (Imel, AHI, Suitts), where an increased number of animals and colony size has expanded throughout the No Prairie Dog (NPD) designated areas, BCPOS has received numerous complaints from tenants and local private landowners. At the direction of upper management and the Boulder County Commissioners, all NPD areas on Lagerman, Imel, AHI, and Suitts parcels will be cleared of prairie dogs by 2020. This action eliminates prairie dogs and burrows at 5 historical owl sites and reduces the suitability of the remaining 2 sites in Critical Wildlife Habitat due to prairie dog removal and installation of barrier fencing for vegetation restoration.

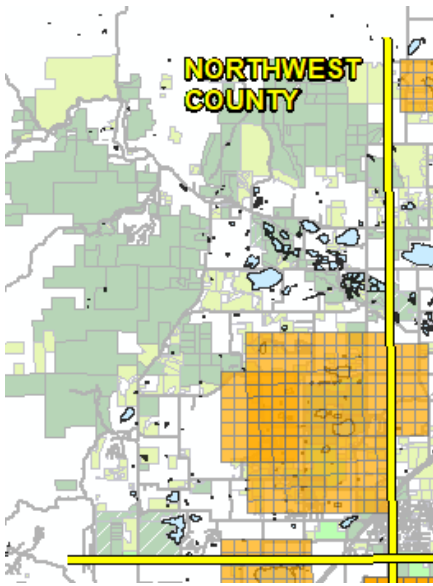


**Figure 3:** Annual prairie dog occupied acreage totals for the three management categories: HCA: Habitat Conservation Area; MOA: Multiple Objective Area; NPD: No Prairie Dog area.

*Colony extent is mapped on foot annually.*

## 2019 Nesting Observations

### Northwest County - Not active



Grazing is the primary activity on northwest parcels with active nest sites, and due to agricultural use, most of these parcels are categorized as No Prairie Dog and Multiple Objective Areas in the [2012 Prairie Dog Habitat Element of the Grassland and Shrubland Management Policy](#). Agricultural tenants and adjacent landowners regularly request reduction and elimination of prairie dog numbers and colony size on these parcels.

In 2019 focused control efforts were applied to the Lagerman-Imel-AHI complex of parcels, eliminating over 500 acres of active prairie dog colony. Wildlife staff was able to negotiate retention of one small colonized area in the Habitat Conservation Area west of Lagerman Reservoir originally designated for northern harrier nesting. However, this resulted in the installation of prairie dog barrier fencing along the perimeter to reduce spread of the colony into NPD and restoration areas, which creates additional movement barriers to other species. Of the 7 locations owls have occupied or been observed, no historical locations currently retain prairie dogs, and the sites are likely no longer suitable.

In addition, during the planning process for these parcels, an additional trail alignment was identified which may introduce additional infrastructure and recreation adjacent to remaining raptor nests south of Lagerman Reservoir.

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#### Observations Site 1: Imel-AHI complex (north)

This area takes two days of surveys to complete 10 survey points distributed over 700 acres.

May 6, 13 No burrowing owls observed. Pyevich.

June 14-15 No burrowing owls observed. Pyevich.

July 7-8, 11-12 No burrowing owls observed. Pyevich.

August 13-14 No burrowing owls observed. Pyevich.

*Summary: No nest events.*

#### Observations Site 2: Imel-AHI complex (south)

27 April, 1700-1820. No burrowing owls observed. Andes-Georges.

31 May, 0730-0910. No burrowing owls observed. Andes-Georges.

26 June. No burrowing owls observed. Andes-Georges.

27 July. No burrowing owls observed. Andes-Georges.

*Summary: No nest events.*

#### Observations Site 3: Imel-AHI complex (south)

8 May. No burrowing owls observed. Witkin.

15 June, 1440-1545. Suspected burrowing owls seen at a great distance near 179. Witkin.

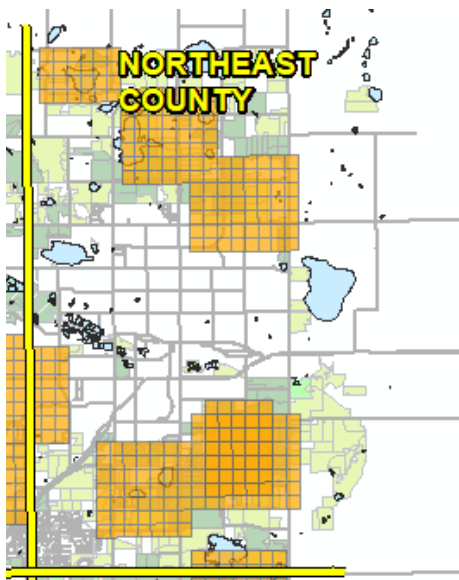
17 June, 1220-1410. Walked area of where saw suspected burrowing owl twice previously and saw no signs of owls or nesting activities. Witkin.

*Summary: No owls, no nest events.*

Table 1: Northwest quadrant nesting history.

SITE	YEAR	Adults first seen	No. Young	#FLEDGE	COMMENT	IMPACTS
Lagerman-Imel-AHI Complex (north)	2009		2-3	2		One additional adult on property. Note: 2 fledged, plus 3rd adult. Nest likely SE on AHI
Lagerman-Imel-AHI Complex (north)	2012	4/18/2019		0	Pair abandoned site	Pair in a burrow, discovered by volunteer monitor, confirmed same day by MD
Lagerman-Imel-AHI Complex (south #1)	2012	4/25/2019	3	3		Possibly north pair moved to south end.
Lagerman-Imel-AHI Complex (south #2)	2012	5/16/2019		0	Failed	Bull trampled and loafed on the burrow. Male owl displaying bobbing behavior.
Lagerman-Imel-AHI Complex (south)	2013	4/13/2019		0	Male abandoned site	Late snowstorm, males on site but females did not arrive. Males left after 3 weeks.
Lagerman-Imel-AHI Complex (north)	2013	4/13/2019		0	Male abandoned site	No mate
Lagerman-Imel-AHI Complex (north)	2018		4	4		Second time recorded BUOW present, first nesting recorded on north side of Pike.
Lagerman-Imel-AHI Complex (south)	2018	7/1/2018	3	3		Second time recorded BUOW present at this location (2012), first nest event at location. Found late in the season, 3 young in burrow - third adult possibly present. Fledge count assumed from initial observation.

**Northeast County – Owl present, not active**



Several northeast county areas where nesting has occurred have different characteristics. A former northernmost site is an active organic farm which retained a small prairie dog colony supporting one nesting pair for several years. Current conditions include pivot irrigation, tilling in the Multiple Objective Area (MOA), and the remaining colony has shifted to the northwest. A second northern, newly identified site occupied by owls in 2018 is under agricultural lease for grazing a small herd of cattle. It is categorized as a MOA. Adjacent landowners do request the County reduce prairie dog colony size and numbers at this site, on occasion. A third site south of Longmont was occupied for several years but is no longer suitable.

In April of 2019, one adult burrowing owl was detected at the 2018 nest site during on-site volunteer training. The entrance to the burrow appeared open and functional at the time of the observation, however, spring rain in the area caused the burrow entrance to slump and become obstructed with sediment. Multiple visits and thorough follow-up surveys over the entire property did not detect any owls in the area. Due to planned carbon sequestration research on the east side of this property, multiple follow-up surveys were completed by Durant and Stock to confirm an owl was not present.

### Observations Site 1: Northeast county/107th

April-May. Five visits by staff. No owls observed following an initial observation. Durant.  
15 April, Adult burrowing owl observed at the 2018 nest location. Flew from burrow when Durant and Stock traversed the property. Durant.

28 April, 0815-1015. No burrowing owls observed. Stock.

23 May, 0815-1015. No burrowing owls observed. Stock.

14 June, 0915-1055. No burrowing owls observed. Stock.

27 June, 1030-1230. No burrowing owls observed. Stock.

*Summary: Owl initially present, no nest event.*



### Site 2: Northeast County/119th

*Burrowing owls were discovered nesting on this property in 2013. The colony being used was only .08 acres in size and contained approximately 12 prairie dogs. The colony is located outside of an irrigated pivot circle, with crop on the north, south and west sides, road on the south and east.*

*The nest site established in 2013 and persisted until 2018. Due to the location, management policies, and nature of agricultural operations, this site is an extremely difficult location to manage for burrowing owls.*

From 2013 to 2018, a tremendous amount of staff time, management decisions, agreements, and effort were applied to protect nesting owls and site characteristics. This site was sometimes the only known nest location on surveyed BCPOS properties. However, during that timeframe, the small prairie dog colony and annual nest events were subjected to a high level of disturbance such as:

- Agricultural tilling and disturbance from farm machinery
- Pivot irrigation installation on adjacent cropland (modified to not water the pivot corner)
- Fluctuation in prairie dog numbers (limited to 20 animals due to No Prairie Dog status)
- Multiple trespassing events by the public through an unlocked access gate occurred with several vehicles driving over the nest site next to the access road. (This information was only apparent after game cameras were installed to monitor the site and nest.)
- Herbicide application by tenant eliminated vegetation in prairie dog colony.
- Reseeding and restoration efforts severely impacted by high wind events, and remaining vegetation buried by deposited sediment.





*Photo: 2014 photo by wildlife staff.*



*Photo: April 2016 photo by J.Pem, showing no vegetation and pair present.*

### Site History:

In 2013 and 2014, no juvenile prairie dogs were observed in the colony, and treatment was delayed until June 2014 to see if the owls would come back. Since the owls returned in 2014, the colony would be maintained at low numbers with control occurring outside the owl breeding season and nest buffer timeframes. Only 8 prairie dogs were observed in 2014 during ranger's observations, so no prairie dog control measures were taken.

In 2015 the owls returned for the 3<sup>rd</sup> year, however a restorative justice process was initiated following April spraying and tilling while the owls were in courtship phase. The agriculture operation plan and lease were modified, citations issued, and staff planning for site restoration began which included agreements to control all prairie dogs expanding outside the 9-acre parcel into cropland and reduce numbers at the nest site. Adjacent BCPOS tenants were asked to avoid any disturbance within the nest buffer. Supplemental feeding of the colony followed, to reduce likelihood of prairie dogs leaving the site, and neighboring landowners were very unhappy.

2016 was the fourth consecutive year that a nest on the Swanson property fledged three or more young and the third year when no other nesting pairs were detected on Boulder County Parks and Open Space properties. Revegetation of the site was challenging as seeding and weed treatment had to occur outside of the nesting timeframes. This resulted in suboptimal planting schedules and the restoration progressed very slowly.

Early 2017 prairie dog control efforts were not implemented, and the colony increased to over 70 animals, well over the agreed upon limit. To reduce trespassing issues and disturbance to the 2 nest sites, a roadside fence was installed, and the gate was locked.

In 2018, colony distribution had changed and original nest site burrows were in poor condition. Vegetation management and prairie dog control measures resulted in an unexpected distribution of available burrows. Remaining prairie dogs vacated the site, preferring the adjacent irrigated crops. Multiple management actions and site-checks by several groups at BCPOS (wildlife, agriculture, weeds, plant ecology) to reestablish vegetation, control weeds, install game cameras, monitor prairie dog colony activity, and manage agriculture crops immediately adjacent to the colony and nesting burrow resulted in a higher level of disturbance to the site than normal. Owls

returned to the site in April, but detections were sporadic, and the owls appeared to abandon the site by early May following wind-deposited sediment and several days of rain.

In 2019, no owls were detected at this site during multiple staff visits March -April, and continued monitoring provided by volunteers. Prairie dogs were retained on Swanson in hopes the owls would return. Staff determined that management of this site is extremely complex and agreed to eliminate the prairie dogs and discussed converting the parcel to pollinator habitat.

April-May. Six visits by staff, no owls observed.

17 April, 1710-50. No owls observed. Pems.

1 June. No burrowing owls observed. Pems.

14 July. No burrowing owls and few prairie dogs observed. Pems.

14 August, 1520-1550. No burrowing owls observed. Pems.

*Summary: No nest events.*

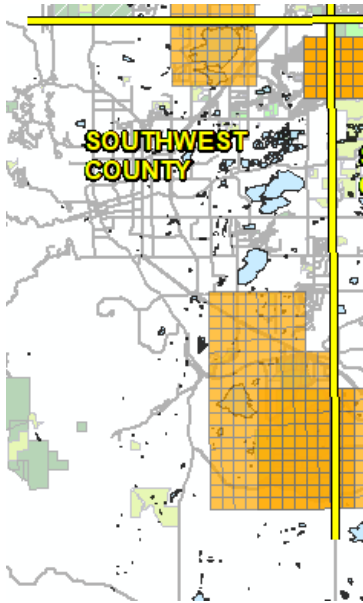
Site 3 - Not active, Northeast county/95th

In 2019, no burrowing owls were detected at a privately owned/BCPOS Conservation Easement.

*Table 2: Northeast County nesting history.*

SITE	YEAR	Adults first seen	No. Young	# FLEDGE	COMMENT	IMPACTS
Northeast county/287	2008		3	3		
Northeast county/287	2009		2	1	2 young, 1 confirmed fledge	
Northeast county/287	2012	5/25/2019	3	1+	Confirmed at least 1 fledged	
Northeast county/287	2013			0	Manure piles appear on site, delivered by large truck across nest site multiple times, OP agreements	Pivot installed and manure pile with associated traffic over nest site
Northeast county/Oxford	2013	April	0	0	Pair present, courtship behavior observed by MD and SS	Irrigated low pasture, site abandoned by pair within a week
Northeast county/119th	2013	April		4	Pair appear on Swanson	
Northeast county/119th	2014			5		
Northeast county/119th	2015			5		
Northeast county/119th	2016	4/11/2019	4	4		
Northeast county/119th	2017	5/13/2019	3	3	3 from each (2) nest	
Northeast county/119th	2017	4/15/2019	3	3	First year we had two nesting pairs, 1 extra adult appeared at some point	
Northeast county/119th	2018		0	0	Pair on site, then abandoned. Poor site conditions, too many staff checking in	Daily checks by staff, seeding for restoration blew away, Jan./Feb pdog treatment distributed remaining burrows in a weird way, very dry site, vehicles off-road to treat, install stuff, or turning around, multiple diff staff visiting site, then 4 days of rain
Northeast county/107th	2018		4	4	First time recorded, pair appear experienced and familiar with site as if nested here previously.	N/A this site is only grazed by a small herd of "hobby" cattle. Bull not so friendly.
Northeast county/95th	2018		4	4	Private conservation easement/Boulder County	Prairie dog control areas to north. Previously occupied, no historical records kept by BCPOS
Northeast county/107th	2019		0	0	Adult (Male?) present at nest burrow on 4/15/2019 during initial survey and no mate observed. Spring rain caused burrow entrance to slump and the owl abandoned the site prior to 4/28.	2019 Carbon Sequestering study is utilizing and altering the eastern field. Although not close to the 2018 nest site, staff/volunteers scoured the area for owls prior to the study commencing in early summer 2019.

## Southwest County - Not active



The South County Grasslands complex is approximately 3000 acres of County and municipal joint purchases. Parcels were purchased between 1990 and 2007, including adjacent OSMP parcels that contribute to the acreage. Much of the property is categorized as Habitat Conservation Area and is actively grazed using a rotational grazing plan.

Four nesting pairs of owls were located on the northern half of the property during staff breeding bird surveys in early July of 2018. This area did not have a monitor assigned in previous years and was difficult to observe due to dense mullein and knapweed. Weeds treatment occurred in late winter of 2019, which may have caused slumping of burrow entrances due to the loose soil characteristics. In addition, OSMP staff reported this specific area appeared to have reduced numbers of prairie dogs early in the season which may have resulted in vacant burrows for the owls. BCPOS wildlife staff confirmed the presence of few prairie dogs in spring of 2019 and had concerns about burrow quality. In fall of 2019, this area did have newly excavated burrows and the remaining prairie dogs were treated with sylvatic plague vaccine.

Two recorded nest events in 2017 and 2018 occurred on the southern half of the property. Although rotational grazing occurs, there is little to no prairie dog control and no off-trail recreation access. In 2017 a pair nested and fledged 6 young on a pasture hillslope and using a similar area in 2018 they produced only one fledgling.

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In fall of 2019, Wildlife staff suspected a plague event in the area and contacted Colorado Parks and Wildlife (CPW). CPW followed up with testing, but plague was not detected in the small sample of animals or fleas, however it is highly suspected to have been a plague-caused event. Prairie dogs at Mayhoffer, Carlson-Lastoka, and adjacent county parcels have been treated annually with an experimental sylvatic plague vaccine (SPV) and Delta dust (flea powder) has been applied to all visibly active burrows. This two-pronged approach is aimed at reducing fleas that transmit plague to prairie dogs as well as bolster the prairie dog population immunity to a potential outbreak. The overall goal of this treatment is to allow prairie dog colonies in this area to grow large enough for potential reintroduction of black-footed ferrets.

Although the colony size is significantly reduced, and distribution of animals is currently patchy, small clusters of prairie dogs did survive the event. Adjacent OSMP colonies experienced similar losses in 2018.

### Site 1: Southwest county

12 May, 0900-1100. None observed. Wings.

June. None observed. Wings.

July. None observed. Wings.

17 August, 0745-0945. None observed. Wings.

*Summary: No nest events.*

Site 2: Southwest county

April-May. Multiple visits by staff with no owls observed. Durant

12 May, 0840-1140. None seen on property. One reported by passerby on open space and mountain parks property nearby. Arp.

5 June, 0815-1055. No burrowing owls seen. Arp.

10 July. No burrowing owls seen. Only a dozen or so prairie dogs visible. Numbers seem greatly reduced. Arp.

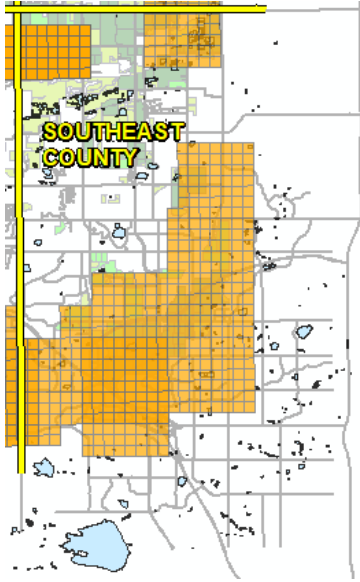
12 August. No burrowing owls and only one prairie dog visible. Arp.

*Summary: No nest events.*

*Table 3: Southwest County nesting history.*

Nest Area	YEAR	Adults first seen	No. Young	#FLEDGE	COMMENT	IMPACTS
Southwest County	2006	7/13/2019	Unknown	3	Early POS records	
Southwest County	2010			1	Found this record in Annual Report. Jointly owned with OSMP	
Southwest County	2017	12-May	6	6	New site, as far as we know	All good in 2017, tenants asked to steer clear of nest site. Rotational grazing.
Southwest County	2018		?	1	Pretty low fledge count this year	Early season ATV tracks driving past after tenant provided location.
Southwest County	2018		15+	13-15+	Four pairs, four nests, at least 13 fledged; good available burrows.	N/A. Found late in the season. It's possible the pdogs in this small colony plagued out right before owls arrived.

## Southeast County – Active Nest, Rock Creek Farm



*The survey areas of the Southeast County quadrant primarily focus on prairie dog colonies in the most southeast portion of the county. The prairie dog colonies are dispersed over several property groups such as Rock Creek Farm, Ruth Roberts, and the jointly owned county/municipal properties Stephenson-Nelson and Mountainview Egg Farm near Flagg Park. Various uses occur across these parcels including a regional trail system, irrigated cropland, oil and gas development, and grazing. A small designated burrowing owl preserve located in the northern half of Rock Creek Farm is surrounded by irrigated cropland and grazing fields which are categorized as No Prairie Dog areas.*

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Burrowing owl presence was confirmed by an experienced owl monitor on 4/7/2019. This observation initiated a temporary trail closure which becomes long-term based on establishment of an active nest on or near the trail. The temporary closure allows for immediate management of recreation while a more long-term solution is developed by Parks staff. A temporary trail closure is possible with POS Director approval and is extended only with the approval of Boulder County Commissioners.

BCPOS supervisory, management, agriculture, and resource protection (park ranger) staff were alerted to the presence of burrowing owls and subsequent trail closure was initiated on April 8 by Senior Wildlife Biologist, Susan Spaulding. Volunteer monitors were assigned and oriented to the site on April 18<sup>th</sup>, and two adult owls were already on site at that time and were joined by a third adult. POS Weeds department was notified of the owls on May 1 and provided a buffer location map. As part of the recreation management and Resource Protection's monitoring effort, the Education & Outreach Department installed a trail counter to detect closure violations. On June 1<sup>st</sup>, Jason Vroman and Ed. & O. shared initial data indicating minimal violations by trail users.

Three young owls and two of three adults were observed above ground on 6/19, and two young with one adult on 6/30. Prior to July, two adults and one young owl were no longer accounted for. Between July 2 and July 9, the fallow field north of the nest site was sprayed by agriculture tenants close to the nest burrow, and the vegetation was dead by 7/16. Two herbicides were applied (Round Up and Staredown), and the field appeared to be tilled shortly thereafter. Following this event, no owls were observed.

On July 17, a decomposed burrowing owl carcass was found near the nest site and submitted to the CPW Wildlife Health Lab for necropsy. Unfortunately, the carcass was too decomposed to determine cause of death. Upper management was kept informed of the developing situation, and on July 24, Susan Spaulding emailed Kristin Cannon, CPW Area Wildlife Manager, and provided

official notification of the event. Kristin’s response indicated a follow-up conversation pending lab results, but no lab testing was possible given the degree of degradation. Internally, a multidisciplinary team was assembled to develop new Standard Operating Procedures for protecting future burrowing owl nests on BCPOS properties.

Staff recently began the process of updating the management plan for Carolyn Holmberg Preserve at Rock Creek Farm.

Site	Nests	Dates adults observed	Dates young observed	Young	Fledge Dates
Southeast County/Grasslands Complex	1	4/7 (1st) 4/18 (2nd) 5/4 (3rd)	6/19 (3)	3	N/A

*Table 4: 2019 Burrowing Owl Nesting Chronology*

Observations:

07 April, email comm. Burrowing owl reported along Cradleboard trail at RCF. Viki Lawrence.  
 18 April, 1500-1710. Two burrowing owls standing on separate burrows 90 m apart between 115 and 116. Easterly burrow is on the south edge of the Cradleboard Trail. More western burrow is on the north edge of the trail. Some flying to and from burrow. Wegman-French, Durant.  
 19 April, 0603-1815. Two owls between points 115 and 116. Standing on the same burrows as yesterday. Wegman-French.  
 24 April, 0850-0950. Both owl spending most of survey time standing on respective burrows. Wegman-French.  
 3 May, 0856-0956. Three observed. A second owl has joined first owl on westerly burrow. Single owl still perched on easterly burrow. Wegman-French.  
 11 May, 0830-0906. All three owls still present in same locations. Pair interacting in Westerly burrow but no sign of incubation yet. Wegman-French.  
 16 May, 1656-1853. All three owls observed, but one looks like a new individual on second nest, so possibly two pairs present. Incubation suspected on first nest. Wegman-French.  
 28 May, 0712-0938. Same owls appear to be present. Wegman-French.  
 29 May, 0814-0840. Three owls visible, two on and in one burrow (incubation). Smith.  
 9 June, 1005-1042. Three owls visible, both pairs appear to be incubating. Smith.  
 19 June, 1713-1752. Three young visible from time to time on mound of westerly nest, and two adults present, foraging, but one looks like one of the adults from the easterly nest. Easterly nest was not visible. Wegman-French.  
 30 June, 0850-01000. One adult and two young seen. Young appeared to be perched around nest burrow, but vegetation obscured the view. Wegman-French.  
 2 July, 0805-1015. One adult flying to and from burrow and two young standing on burrow mound. Nest is between 115 and 116. Wegman-French.  
 9 July, 0610-0753. One adult and two young seen. Adult was preening young. Wegman-French.  
 10 July, 0600-0853. No burrowing owls seen. Wegman-French.

16 July, 0629-0720. No burrowing owls observed. Between 2 and 9 July, someone sprayed the entire field just north of the nest burrow, and virtually all the vegetation is dead. Wegman-French.

23 July, 0622-0708. Searched the area and the nest burrow thoroughly and saw no signs of burrowing owls. Wegman-French.

30 July, 0615-0920. None observed. Vegetation completely dead from spraying. Wegman-French.

Table 4: Southeast county nesting history

SITE	YEAR	Adults first seen	No. Young	#FLEDGE	COMMENT	IMPACTS
Southeast County	2001		6	6	Monitored by technician, in ROW prior to development of Parkway	Parkway developed after fledging
Southeast County/RCF	2001			Failed	2 nests but no young produced, old record few details	
Southeast County/Two Creeks OS	2001			3	Old record, 2 nests and 3 young	
Southeast County/Two Creeks OS	2006	7/17/2019	4	3 to 4	(Denny Morris) 4 observed on 7/27, 3 observed on 8/1 (1 prob. Fledged). Hatch date <7/12	
Southeast County/Two Creeks OS	2006	6/13/2019	5	3 to 5	Fewer young observed at nest on 7/27	
Southeast County/RCF	2006		3	3	Trail closure – Seasonal Wildlife Closure	
Southeast County	2006		3	2 to 3		
Southeast County/RCF	2008			7		
Southeast County/RCF	2009			3	3 of 3 confirmed fledged	
Southeast County/Two Creeks OS	2009		1	1	1 other adult seen on Mtnview Egg Farm	
Southeast County/Two Creeks OS	2009		2	2	2 of 3 confirmed fledged	
Southeast County/RCF	2010			6	Found this record in 2010 Annual Report	
Southeast County	2010	8/11/2010	7	7	This site was only discovered after a small grass fire exposed the 2 nest sites, 2 pairs of adults and at least 7 young visible.	
Southeast County/RCF	2011		6	6		2011 adjacent weeds spraying by tenant
Southeast County/RCF	2011		6	6	Located during staff Breeding Bird Survey	
Southeast County/RCF	2011		3?	2 - 3	Trail closure – Seasonal Wildlife Closure instituted	
Southeast County/RCF	2012		0	0	Two nest sites on opposite sides of Preserve, no young fledged but feeding in burrow is apparent from volunteer monitor notes.	ATV use in colony, fall barrier fence reconstruction, Xcel Energy power line extension after Oct. 1st, pivot expansion proposed
Southeast County	2012	6/7/2019	3	3		
Southeast County/RCF	2014		0	0	Owls in area, no nests located	Pivot irrigation installed to west
Southeast County/RCF	2017	5/9/2019	4	4	Fledge date is likely a short flight for oldest bird (?)	
Southeast County/Two Creeks OS	2017	5/28/2019	Unknown	0	All 3 sites were predated before young emerged, MD confirmed	Site has become surrounded by development: urban predators, GHOW, weasel
Southeast County/Two Creeks OS	2017	4/25/2019	Unknown	0	All 3 sites were predated before young emerged, MD confirmed	Site has become surrounded by development: urban predators, GHOW, weasel
Southeast County/Two Creeks OS	2017	4/17/2019	Unknown	0	All 3 sites were predated before young emerged, MD confirmed	Site has become surrounded by development: urban predators, GHOW, weasel
Southeast County/RCF	2018		3	3	Trail closure – Seasonal Wildlife Closure instituted	Trespassing despite trail closure.
Southeast County/RCF	2019	4/7/2019	3	0	Trail closure – Seasonal Wildlife Closure instituted. This site had one adult male and female plus one additional "immature" looking adult suspected to be a 2018 fledgling.	Tenant used herbicide on adjacent field/colony resulting in all vegetation dying within 2 weeks. 3 nestlings were above ground initially, but 2 wks before spraying 1 of 3 emerged nestlings was no longer observed and the "immature" adult was not observed. Following spraying all owls were missing or gone.



## **Nesting Raptors and Birds of Special Concern**

Volunteer's avian observations are listed in the records kept by Boulder County wildlife staff. Any observations on nesting raptors are added to the county's GIS Raptor Database, which is shared with Colorado Parks and Wildlife annually through a Sensitive Data sharing agreement. Other species of concern or special interest recorded by volunteer monitors include:

### **Bald Eagle**

Stevenson-Nelson, 25 April. Adult bald Eagle perched on big power pole for more than three hours. Redak.

Deberry, 27 May. One juvenile seen.

AHI-Turkey Farm, 16 June. One adult and one juvenile perched. Andes-Georges.

Wolf Run-Centennial, 2 July. One perched in cottonwood on the west side of property. Crawford.

Imel, 7 August. Both adults present, no young observed. Witkin.

Keyes North, 12 August. Adult bald eagle perched on large power pole north of property center. Cass.

### **Cooper's Hawk**

No reports in 2019.

### **Ferruginous Hawk**

Rock Creek Farm, 18 April. One seen. Wegman-French.

24 April. Observed between 115 and 116, then flying 200 m to Cottonwood and perching. Wegman-French.

11 May. One flying over. Wegman-French.

### **Golden Eagle**

Wolf Run-Centennial, 2 July. Juvenile circling overhead. Crawford.

### **Great Horned Owl**

Keyes North, 18 April. Adult observed on nest and riparian area and north and east of 51. Cass.

Stevenson-Nelson, 4 June. Fledged young. Redak.

### **Loggerhead Shrike**

Warrensburg, 12 May. Lawrence.

Mountain View Egg Farm, 12 August. One perched in dead tree south of point 41. Hansley.

### **Lark Bunting**

Dowe Flats, 8 May. For on the ground near hoary base of the hill and fencepost corner meet. Henson.

### **Northern Harrier**

Wolf Run-Centennial, 9 June. Harriers visible on north edge of property. Crawford.

### **Osprey**

AHI-Turkey Farm, 25 April. One on nest, one perched on pole nearby. Andes-Georges.

AHI-Turkey Farm, 31 May. Pair observed. Andes-Georges.  
AHI-Turkey Farm, 27 July. Two adults sharing fish on nest. Andes-Georges.  
15 June. least two Osprey perched (one immature?). Andes-Georges.  
Dowe Flats, 8 May. One flying over. Henson.  
Lagerman, 14 May. One observed. Bryan.  
Lagerman, 14 August. One on nest and one on nearby post. Bryan

### Red-tailed Hawk (nests only)

No nests were reported by volunteer monitors.

### Swainson's Hawk

Rock Creek Farm, 19 April. Two hunting over 118. Wegman-French.  
Imel, 8 August. Both adult perched near nest, no young observed. Witkin.

### Other Observations and Disturbances:

**Keyes North**, 18 April. Agricultural activity has greatly diminished numbers of prairie dogs with only four burrows remaining visible. Prairie dogs near 50 appear to have been recently exterminated. Cass. 12 August, only two prairie dogs visible on the entire property.

**Liley**, 24 April. As is typical, there is a huge amount of trash blown onto the property from 120th St. Cass.

**Keyes**, 2 June. Only four prairie dog burrows remain visible on property after extensive poisoning. Cass.

**Darby**, 7 June. Prairie dog colony has been plowed over and only one borough is visible. Center pivot irrigation system has been installed. Laubach.

**Deberry**, 14 June. Couldn't access survey points because of aggressive bulls in pasture. Stock.

**Imel**, 17 June. Staff euthanizing "the local prairie dog population." Witkin.

**Mayhoffer-Coalton Trail**, 10 July. Only a dozen or so prairie dogs visible. Numbers seem greatly reduced.

Arp. 12 August. Only one prairie dog visible. Arp.

**Keyes**, 10 July. No active burrows or prairie dogs observed within sight of points 52 and 51. Cass.

**Warembourg**, 12 July. Electrocuted great horned owl with vole in its beak hanging from powerline. Lawrence.

**Swanson**, 14 July. Few prairie dogs observed. Pems.

**Rock Creek Farm**, 16 July. No burrowing owls observed. Between 2 and 9 July, someone sprayed the entire field just north of the nest burrow, and virtually all the vegetation is dead. Wegman-French.

**Stevenson-Nelson**, 13 August. "I felt like there were quite if a lot fewer prairie dogs than in previous years." Redak.