

Divisional Correspondence Only

STATE OF COLORADO  
DIVISION OF WILDLIFE  
Department of Natural Resources

*11/9/94*

DATE: November 1, 1994

TO: Kathi Green  
FROM: Janet George *[Signature]*  
SUBJ: 1994 Burrowing Owl Inventory

Attached please find a report of burrowing owl nesting activity in the Central Region in 1994. Please note that burrowing owls nested at the new DIA mitigation site and the large numbers of owls (151) that were observed on the state school section designated as site 10.

In addition to the report, I have maps with greater detail on file showing inactive, active and destroyed burrowing owl nesting sites. Call me if you would like to look at these maps.

cc: Area 5, P. Dorsey, C. Kloster, J. Jones, D. Weber, J. Sheppard, G. Skiba, J. Griess (Rocky Mountain Arsenal)

*Jan,*  
*Thanks for the effort of*  
*sharing information.*

*Janet*

*P.S. I've never been to the*  
*RMA, if you ever have spare time*  
*give me a ~~to~~ call.*

## BURROWING OWL SURVEY: 1994 REPORT

prepared by  
Janet George and Justin Pelletier

The status of burrowing owl (Athene cunicularia) populations in the Great Plains region and Colorado has been a focused area of concern for several years. Burrowing owls were listed as rare in 1966 in the U.S. Department of Interior's "Red Book", but the species did not appear in the 1968 edition (Plumpton 1992). The National Audubon Society included this species on its "Blue List" from 1971 through 1982 (Tate 1981, Tate and Tate 1982), and on their species of special concern list in 1986 (Tate 1986). Within Colorado, the bird was listed by the Colorado Division of Wildlife as a species of special concern in 1985 (Winternitz and Crumpacker 1985) and changed to undetermined status in 1990 (Colo. Div. Wildl. 1990).

There is little long term data on burrowing owl population trends in Colorado. The USFWS Breeding Bird Survey data suggest a decline from 1966 to 1989 in the Colorado burrowing owl population and an increase from 1980 to 1989. However, both of these trends are not statistically significant and the validity of this data for long term trend analysis has been questioned (Barker 1991).

While population declines over large areas have not been confirmed in Colorado, local population declines and potential causes have been identified. Loss of breeding habitat through control of prairie dogs, cultivation of grasslands and urbanization are suspected of causing population declines. In addition, pesticides may cause declines by reducing insect prey species, direct mortality of the birds, or reduced reproductive success.

The purpose of this survey was to inventory breeding burrowing owl populations in the Central Region.

### METHODS

This study began in 1991 when a list of sites where burrowing owls had been observed in the last 5 years was obtained from the Colorado Bird Observatory (CBO). Before field work in 1993, each site was assigned a corresponding number and brief site description. Additional sites were suggested by David Weber, District Wildlife Managers, Wildlife Technicians, Steve Jones, volunteers and an anonymous tip.

In 1993, field work was conducted during June and July. Each site was visited at least 1 time to search for burrowing owls (Bell and George 1993). Potential sites were also checked as they were encountered.

In 1994, previously identified sites were visited at least once from 15 June through 8 July, 1994. These dates were selected for the best opportunity to count nestlings outside burrows. Sites that had owls present, or the possibility of owls, were revisited a second and sometimes a third time to search for and count owls. In addition, the eastern portion of the Central Region was searched for new sites.

Active sites were mapped on 1:24,000 USGS topographic maps and 1:100,000 BLM land status maps. The number of owls, vegetation type, levels of urbanization and UTM map coordinates were recorded.

The Rocky Mountain Arsenal (RMA), Rocky Flats and Jefferson County Open Space searched for and monitored burrowing owl nesting sites on their properties. Their estimates of the number of adults, nestlings, burrows and nesting success is contained in this report. Other agencies, including Rocky Flats (Marsha Murdock), Mike Threlkeld and Boulder County Parks and Open Space (Michael Sanders) were contacted regarding locations of nesting burrowing owls.

## **RESULTS AND DISCUSSION**

Burrowing owls were observed at 23 sites in the Central Region (Fig. 1, Table 1 and Appendix 1). Nest burrows were confirmed at 20 sites. Eight sites had been active in preceding years, but 14 had not been previously documented. Seven of 12 sites (58%) active in 1993 were active again in 1994 (Table 2). However, 1 large site (number 10) may have been active in both years even though it was considered inactive in 1993. This site was difficult to view from public roads in 1993 so permission to enter the property was obtained in 1994.

A minimum of 456 burrowing owls were observed during the breeding season in the Central Region (Table 1). At least 135 adults, 290 nestlings, 31 unclassified and 103 nest burrows were recorded. This year (1994) the number of burrowing owls and nest burrows was higher than in 1993 (325 total owls and 60 nest burrows). The increase in the number of owls and nest burrows may have resulted from differences in methods and observers instead of a true increase in owl activity. Site 10 could account for the increase if it had similar number of owls and nest burrows in 1993 as in 1994, but was overlooked.

Although there was an overall increase in the Central Region, the number of owls and nest burrows observed on the RMA declined (Table 2). While some of the decline resulted from a decrease in study intensity, there was a general perception that the number of owls

nesting on the RMA declined slightly (Jane Griess, pers. comm.). Some owls may have moved from RMA to site 10 or the Denver International Airport (DIA) mitigation site.

At least 28 burrowing owls with 4 nest burrows were counted at the DIA mitigation site (Jane Griess, pers. comm.). The prairie dog (Cynomys ludovicianus) town at this site has existed for less than 1 year and was established artificially by auguring 1000 holes for relocated prairie dogs.

Prairie dog towns between the RMA and Barr Lake held 80% (366) of the burrowing owls observed within the Region in 1994. Fifty-nine % (270) of owls and 58% (60) nest burrows counted were on 2 sites - the RMA and site 10 (Table 2). Site 10 had the greatest concentration of burrowing owls observed in the Central Region with 151 owls and 35 burrows on 1 mi<sup>2</sup>. The habitat on RMA is protected, however site 10 is on a state school section (T1S,R66W, sec. 36) that is leased for cattle grazing.

Owls were also located in 16 sites outside of the RMA-Barr Lake area. The total number of owls counted at each of these sites ranged from 1 to 16 and nest burrows ranged from 1 to 4.

#### RECOMMENDATIONS

This survey should be repeated annually to determine whether 1) sites are active and 2) the number of adults, nestlings and nest burrows at each active site. If resources are limited, sites that were active the preceding year should receive first priority, historic sites with potential are second priority, and active prairie dog towns on WRIS maps are third priority. Special attention should be given to Site 10.

Contact with other agencies, birdwatchers and landowners should be maintained. These individuals know of undocumented sites and may volunteer to monitor previously occupied sites.

#### ACKNOWLEDGEMENTS

Several individuals and agencies cooperated on this study. Larry Garcia gained access to and assisted in surveying the new Denver International Airport site. Dave Weber and Stuart Hopper suggested sites and provided maps of prairie dog towns. Jane Griess of the RMA provided owl numbers for 1993.

#### Literature Cited

Barker, K. 1991. A summary of the 1990 burrowing owl survey. Colo. Bird Observatory unpubl. rep. 3 pp.

Bell, C. and J. George. 1993. Burrowing owl survey: 1993 report. Colo. Div. Wildl. unpubl. rep. 11pp.

Colorado Division of Wildlife. 1990. Species of special concern/species of undetermined status. Colo. Div. Wildl. unpublished list. 10pp.

Plumpton, D.L. 1992. Aspects of nest site selection and habitat use by burrowing owls at the Rocky Mountain Arsenal, Colorado. MS Thesis. Texas Tech Univ. College Station, Texas. 72pp.

Tate, J. Jr. 1981. The blue list for 1981. Am. Birds 35:1-10.

\_\_\_\_\_. 1982. The blue list for 1986. Am. Birds 40:227-235.

\_\_\_\_\_ and D. J. Tate. 1982. The blue list for 1982. Am Birds 36:126-135.

Winternitz, B. L. and D. W. Crumpacker. 1985. Colorado wildlife workshop: species of special concern. Colo. Div. Wildl. Rep. 92pp.

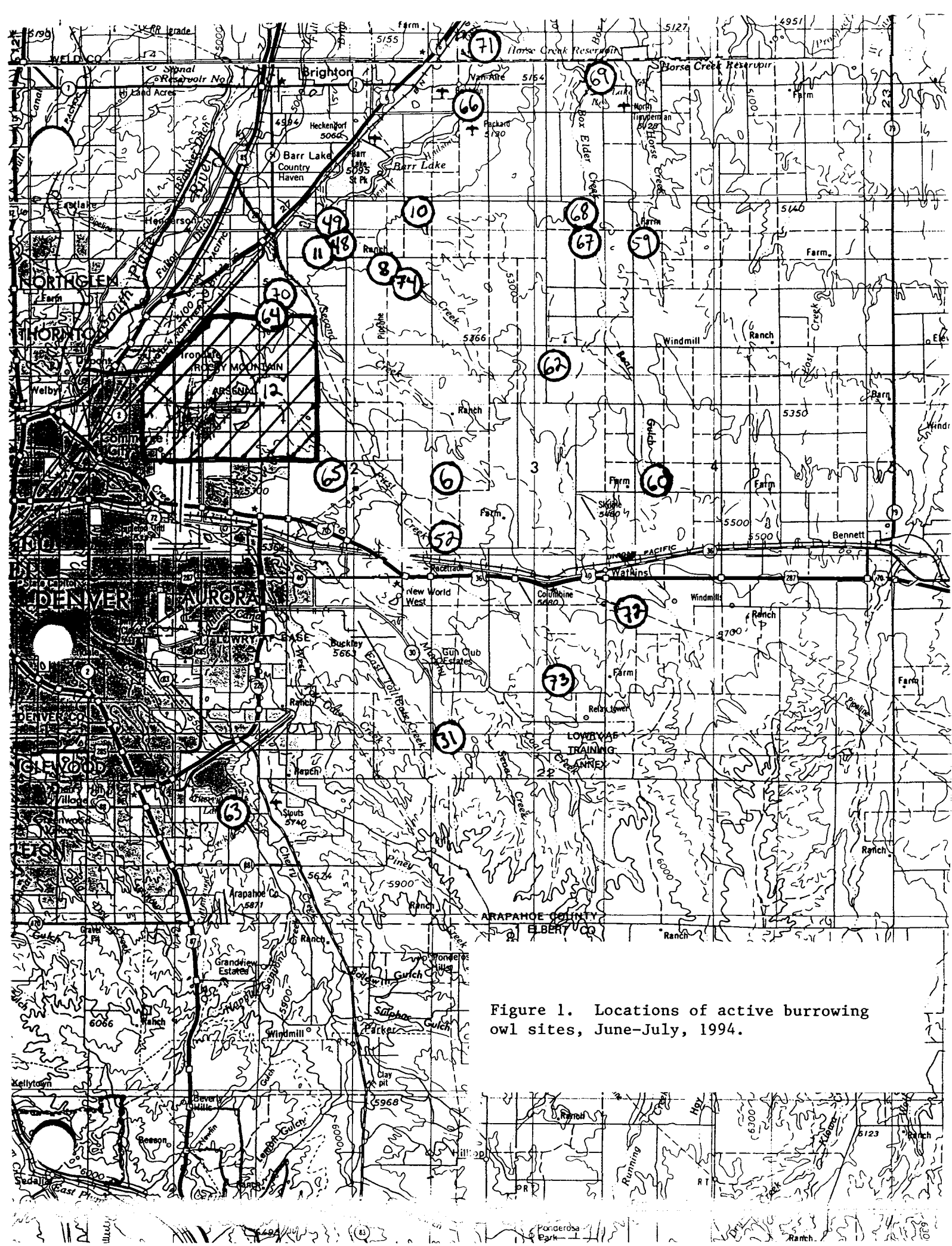


Figure 1. Locations of active burrowing owl sites, June-July, 1994.

Table 1. Number of adult, young of year and active burrows of burrowing owls observed in the Central Region during June and July, 1994.

SITE	SITE NAME	TOTAL NUMBER	NUMBER OF ADULTS	NUMBER YOUNG OF YEAR	NUMBER OF BURROWS
8	112th & Tower	26	6	20	6
10	Piccadilly-120-128th	151	29	122	35
11	112th & Tower NW	10	5	5	1
12	Rocky Mtn. Arsenal	119	50	69	25
31	Plains Cons. Center	3	1	2	1
48	Tower btwn.112th-120th	23	7	16	5
49	120th and Chambers	9	3	6	3
52	26th and Gun Club Rd.	3	2	1	1
57	Dragstrip on Rd. 5	1	1	0	?
60	48th and Imboden	7	3	4	2
61	S of DIA	6	2	4	2
62	DIA S entrance area	3*	?	?	?
63	Peoria and Bellview	1	1	0	0
64	Chambers & 104th	6	4	2	2
65	Pena Blvd. & 48th	5	2	3	1
66	152nd & Harvest Mi.Rd.	4	1	3	1
67	120th & Hayesmount-S	7	2	5	2
68	120th & Hayesmount-N	7	2	5	2
69	Watkins Mi.Rd.& 160th	3	3	0	0
70	104th & Chambers	7	2	5	2
72	Imboden and Rd.6	16	4	12	4
73	Jewell;W of Watkins Rd	11	5	6	4
74	DIA Mitigation Site	28*	?	?	4
	TOTAL	456*	135	290	103

\* Thirty-one burrowing owls were not classified.

Table 2. A comparison of the number of burrowing owls and nest burrows at sites within the Central Region that were active in 1993 and 1994.

SITE	YEAR	TOTAL OWLS	NUMBER OF ADULTS	NUMBER YOUNG OF YEAR	NUMBER OF NEST BURROWS
8	1993	20+	15+	4+	3
	1994	26	6	20	6
11	1993	7+	4	3	2
	1994	10	5	5	1
12	1993	242	86	156	43
	1994	119	50	69	25
31	1993	1	1	0	0
	1994	3	1	2	1
48	1993	16+	7	9	4-5
	1994	23	7	16	5
49	1993	6	1	5	1
	1994	9	3	6	3
52	1993	7+	2	5	1
	1994	3	2	1	1



APPENDIX 1

# BURROWING OWL SITE DESCRIPTIONS

Site #	Description	UTM'S	County	Status
1	Rock Creek Farm-Broomfield.		Boulder	I
2	1 mi. E. 2 mi. S of Lafayette exit on I-25.		Boulder	I
3	Boulder, near Arapahoe Rd. and Foothills Pkwy.		Boulder	I
4	Boulder open space, Boulder Valley Ranch, 1/2 mi. W of Boulder Reservoir.		Boulder	I
5	Highway 36, near Storage Tech building.		Boulder	I
6	Lafayette exit I-25, 1/4 mi. NW exit.		Boulder	I
7	S of Lagerman Res. W of N. 75th on Pike Road 24. (N.E. Region)		Boulder	I
8	112th. E of Tower Road, S of Barr Lake.	Z13 E521900 N4416140	Adams	A
9	76 E. exit 17. 1.7 mi. NE on 132nd for 1.0 mi., S side of road.		Adams	I
10	E. side of Piccadilly, between 120th and 128th. S side of house.		Adams	A
11	NW corner of 112th and Tower Road.	Z13 E519390 N4416550	Adams	A
12	Rocky Mountain Arsenal		Adams	A
13	Prairie dog town E side of Piccadilly. 1/10 mi. N of 32nd Pkwy.		Adams	
14	Rocky Mountain Arsenal		Adams	See 12
15	Same site as #9.		Adams	See 9
16	Off Tower Road. 88th- New Airport area near Barr Lake.		Adams	I
17	112th. E of Potomac, before Chambers Road. (DESTROYED)		Adams	D
18	1/3 mi. W of Hooly St. and 154th in prairie dog town. 150 yds. S of Road.		Adams	I
19	Rocky Mountain Arsenal		Adams	See 12
20	NE corner of 104th and Sheridan. (DESTROYED)		Adams	D
21	Exit 34 from I-76, along road 49. Opposite High Plains Ranch. (N.E. REGION)		Adams	N
22	6TH and Buckley Road. SE 200 yds.		Arapahoe	I
23	Cherry Creek Reservoir-West side Orchard and Jordan Road. (NO PRAIRIE DOG TOWN)		Arapahoe	I
24	Cherry Creek Reservoir- S.E. area of park. (NO PRAIRIE DOG TOWN)		Arapahoe	I
25	S of Cherry Creek Reservoir. (NO PRAIRIE DOG TOWN)		Arapahoe	I

26	DTC. N of Arapahoe. E of Peoria.		Arapahoe	I
27	Entrance to Saddle Rock Estates. E of Arapahoe Road. (Parker)		Arapahoe	I
28	E side of Tower Road. 1/4 Mi. N of Hampden. (DESTROYED)		Arapahoe	D
29	Same as #22.		Arapahoe	See 22
30	W side of Peoria St. near E. Alameda Ave. (DESTROYED)		Arapahoe	D
31	Plains Conservation Center, 21901 E. Hampden.	Z13 E523013 N4389793	Arapahoe	A
32	W of Model Airplane Field- Cherry Creek Reservoir. (DESTROYED)		Arapahoe	D
33	W edge of Cherry Creek Reservoir. Along dirt road SE of Bellview Ave. (DESTROYED)		Arapahoe	D
34	Intersection of Tower and Cornell Ave.		Arapahoe	I
35	NE end of Greenwood Vill. Park. N of I-225 and W of Cherry Creek Dam.		Arapahoe	I
36	S of Highway 85 and W of Meadows Development (near Castle Rock).		Douglas	N
37	Wood House Ranch		Douglas	I
38	Chatfield SRA- Prairie dog town S of lake. (DESTROYED)		Douglas	D
39	Chatfield SRA- near Plum Creek. (DESTROYED)		Douglas	D
40	Chatfield SRA- Opposite southern entrance toll gate. (DESTROYED)		Douglas	D
41	Chatfield State Park- Near south entrance.		Douglas	I
42	Chatfield St. E of Wadsworth, E of Ken Caryl. (DESTROYED)		Jefferson	D
43	Ken Caryl Ranch, Chatfield and Carr. (DESTROYED)		Jefferson	D
44	Morrison Road and Old Kipling. (DESTROYED)		Jefferson	D
45	W. of Wadsworth, S of Deer Creek, S of Ken Caryl Ranch.		Jefferson	I
46	Bear Creek Lake Park- 60 feet from road. (Morrison)		Jefferson	I
47	Garrison and Chatfield. (DESTROYED)		Jefferson	D
48	E side of Tower between 112th and 120th.	Z13 E519495 N4417420	Adams	A
49	N side of 120th between Chambers and Tower.	Z13 E519180 N4418160	Adams	A
50	N of 160th and W of Washington, E of I-25.		Adams	I
51	Gun Club Road and Piccadilly. 1.25 mi. W of observation deck.		Adams	I
52	0.4 mi. E of Gun Club Road on 26th St.	Z13 E523020 N4400440	Adams	A
53	E on Highway 79, W at Cemetery for about 0.5 mi. On S side.	Z13 E549100 N4402075	Adams	I

54	1.5 mi W of Converse on 38th. NW of Bennett and site 53.	Z13 E546300 N4402410	Adams	I
55	E of Cavanaugh and S of 120th.	Z13 E538790 N4419500	Adams	I
56	0.5 mi. N of 160th between 29N Road and Harback.	Z13 E545120 N4423420	Adams	D
57	N of Arapahoe Road and Road 5. 2256 Road 5.(N end of dragstrip on E and W side-private property but O.K. to go on.)	Z13 E498700 N4432300	Weld	A
58	1-25 N exit 232. E on Road 8, N on Road 11, 0.2 mi. E on Road 12. On S side of road. (Stresscon) NE Region.	Z13 E503490 N4435545	Weld	A
59	0.4 mi. S of 120th on E side of Imboden. (Possibly destroyed-may be farmed in fall 1994.	Z13 E535650 N4417370	Adams	I
60	0.7 mi. E of Imboden on N side of 48th.	Z13 E537250 N4400500	Adams	A
61	1-70 E to Pena Blvd. N. to 56th exit. E past Tower for 5 mi. S on Powerline Road for 1.0 mi. E along fence for 1.5 mi. N along fence for 0.3 mi.(Owls are on W side of fence).	Z13 E525150 N4404210	Adams	A
62	56th E to Valley Head Road (DIA south entrance). N 1.0 mi., E along dirt road. Follow N and along fence until prairie dog town.	Z13 E532200 N4410100	Adams	A
63	0.3 mi. S of Bellview on W side of Peoria.	Z13 E512750 N4385400	Arapahoe	A
64	0.6 mi. S of 104th on W side of Chambers.	Z13 E515280 N4413790	Adams	A
65	E side of Pena Blvd. 0.1 mi. S of 48th Ave. exit. (If mapped location different from description, use written description).	Z13 E519190 N4404000	Adams	A
66	0.2 mi. N of intersection of 152nd and Harvest Mile Road. E side.	Z13 E536000 N4424900	Adams	A
67	1.0 mi. E of Hayesmount and 120th. 0.1 mi. South. Just S of 1st E-W fence. (Can't see from 120th).	Z13 E532550 N4418510	Adams	A
68	1.0 mi. E of Hayesmount and 120th. 0.6 mi. N along E side fence row. (Burrows just E of 2nd gas well).	Z13 E532550 N4417440	Adams	A
69	NW corner of Watkins Mile Road and 160th.	Z13 E533910 N4426190	Adams	A
70	0.1 mi. S of 104th on W side of Chambers.	Z13 E515215 N4414660	Adams	A
71	0.25 mi. E of Hayesmount and 168th on N side (NE REGION)	Z13 E533200 N4427760	Weld	A

72	I-70 E to Exit 285. S on Watkins. E on Road 6. S on Imboden. S for 0.5 mi (W side).	Z13 E535560 N4392400	Arapahoe	A
73	S on Watkins. W on Jewell. 1.0 mi. on N side of road.	Z13 E522170 N4392400	Arapahoe	A
74	DIA Mitigation Site (T2S, R60W, 12, SW)		Adams	A

A = Active      N = Not Found  
 I = Inactive    D = Destroyed  
 RMA = Rocky Mountain Arsenal