

**POTENTIAL HABITAT
FOR
MOUNTAIN PLOVERS
ON COLORADO SPRINGS UTILITIES PROPERTY**



**A Report to Colorado Springs Utilities
By
The Colorado Natural Heritage Program
Colorado State University**

January 2003

**Martin Margulies
and
John R. Sovell**

**Colorado Natural Heritage Program
Colorado State University
8002 Campus Delivery
Fort Collins, Colorado 80523-8002**

INTRODUCTION

The Mountain Plover (*Charadrius montanus*) is endemic to the Western Great Plains and Colorado Plateau (Mengel, 1970). The bird has become of greater interest with the recent proposal for listing of the species for threatened or endangered status with the USFWS. According to Knopf and Miller (1994), "the Continental population of Mountain Plovers has declined 63% from 1966 to 1991." The species is considered a short grass prairie associate (Graul and Webster 1976), but is also associated with bare ground and disturbance (Knopf and Miller, 1994). Breeders are also found on tall grass where excessive grazing by large herbivores (Luan 1957, Knopf 1996) and prairie dogs has occurred (Tyler 1968, Knowles et al. 1982, Knowles and Knowles 1984, Shackford 1991). To identify potential habitat on current and future Colorado Springs Utilities property, the Utility funded a habitat survey conducted by the Colorado Natural Heritage Program at Colorado State University.

METHODS

A survey of the designated areas (Fig. 1) was conducted during the last week of October and the first week of November 2002. The survey consisted of visiting each site and examining the characteristics of the site to determine whether areas within the sites contain habitat for nesting Mountain Plovers. All sites were covered by either a vehicle or on foot. The areas were divided into habitats that provided unsuitable, poor, good, and excellent nesting habitat for Mountain Plovers. These areas were mapped on USGS topographic quads with the aid of GPS units.

RESULTS: SITE SUMMARIES

Clear Spring Ranch

This property (Fig. 1) is located south of Fountain and north of Pikes Peaks International Raceway (T16S, R65W, Secs 19-21, 28-33 and T17S, R65W, Secs 4-6 portions) and is bisected by Interstate 25 (I-25). The area consists of a wide variety of habitats on both sides of the highway. We delineate the areas as east and west of I-25 and potential habitat is shown on Fig. 2.

West of I-25

The area to the west of I-25 consists of a large portion that will not support nesting Mountain Plovers. Included in these areas is a hilly section of yucca and sagebrush that is bordered by I-25 to the east, property boundaries to the north and west, and the power plant to the south. Other vegetative constraints eliminate the northwest corner of the property. In addition, thick shrub cover of yucca and cholla on hills characterize the area bordered by the solar evaporation ponds to the north, the sludge basins to the west, I-25 to the east, and the southern boundary. A drainage that is covered by tall shrubs predominated by greasewood bisects this area, making this portion of the area undesirable for nesting Mountain Plovers.

The property did have a few prairie dog towns, which are favored by nesting plovers (Tyler 1968, Knowles et al. 1982, Knowles, 1984, Shackford 1991). The town in the southwest corner lies amongst dense cholla. During previous nesting seasons the authors have observed plovers nesting on prairie dog towns with moderately dense cholla. Therefore we would recommend that this area be surveyed for nesting plovers in the spring. In addition, a prairie dog town bordered by the guard shack to the south, the plant to the west, and I-25 to the east is potential habitat. This town is in a congested area and probably will not be favored by nesting plovers, but should be surveyed.

The ground surrounding the sludge basins was plowed during this survey, as was a small area to the south of the supernatant lagoon. Because of the disturbed nature of the ground these areas should be surveyed for nesting plovers in the spring.

East of I-25

Another prairie dog town, on the eastern side of I-25, consists of some plowed areas and other areas where the town is intact. Nesting plovers may use this area and conducting a nesting survey here is warranted. Much of the area is dormant agricultural land and may provide habitat if plowed. However, all these farmlands are irrigated and though we have surveyed for Mountain Plovers on >5,000 acres of

irrigated cropland none have ever been observed using this habitat during nesting season. In addition, many of the fields are surrounded by large cottonwoods, which provide perches for plover predators. Compared to the area west of I-25 the land on this side of the highway is poorer plover habitat, but those areas identified in Fig. 2 should be surveyed for nesting plovers.

Williams Creek

This property located southeast of Colorado Springs (Fig. 1)(T16S, R64W, Sec19, portions of Secs 18, 30, 31 and T16S, R65W, Secs 12, 13, 24, 25 and portions of Secs 11, 14, 23, 28, 36) contained the largest amount of potential plover nesting habitat. The area consists of the main Williams drainage that bisects the property with several smaller drainages entering Williams Creek. The lower areas of the drainage consist of undulating terrain with willows and cottonwood making these areas uninhabitable by nesting plovers. As one proceeds up the drainages sides onto the benches the habitat for plovers improves immensely.

Most of the benches consist of short grass prairie with large amount of bare ground providing excellent nesting habitat for Mountain Plovers. Other benches have small widely scattered rabbitbrush or taller cholla and yucca, but at densities where plovers would nest. On the sides of the benches leading into the drainages much of the land is uninhabitable by nesting plovers due to a combination of the undulating terrain and denser vegetation. However, a large portion of the "sides" of the benches may contain nesting plovers in the spring and though not excellent habitat, provides good nesting habitat.

Lastly, the flat area to the southwest consists of taller grass species, which normally is unsuitable for nesting plovers. Due to grazing, the vegetation here is low and there exists large amounts of bare ground, which makes this area potential nesting plover habitat. This area along with other potential nesting habitat is delineated on Fig. 3. This area should be designated as of high priority for plover nesting surveys.

Gas Propane Air Plant

The area located at 3550 Marksheffel Road (Fig. 1) (T13S R65W Sec 29, SE ¼ of the SE ¼) consisted of approximately 47 acres. The habitat was equally divided between tall forbes/grass/yucca shrub and a human developed propane field. The location does not provide habitat (Fig. 4) to support Mountain Plover nesting and the area needs no further surveying.

Big Johnson Reservoir

The area surrounding Big Johnson Reservoir (Fig. 1) (T15S, R65W, portions of Secs 3-5) contained very minimal habitat for nesting plovers. The area to the west and northwest of the reservoir consisted of rolling terrain with dense yucca and sagebrush. The high water area around the lake was covered with tall weedy forbs and grass. Most of the property above the high water line consisted of grasses, forbes and rabbitbrush at a height of nine inches or greater making a majority of the area unsuitable for plover nesting. The property is surrounded by major roads and has been developed as an urban area, which may further discourage nesting plovers.

However, there were small pockets that may be suitable nesting habitat (Fig. 5). These areas were on the northern and southern edges of the reservoir. Additionally, the private land owned by Cyget that surrounds this property provides good plover habitat and there may be some spill over use of the utilities land by plovers from the Cyget property. Also during periods of low water the barren earth areas may provide areas for the plovers during spring and fall migration. The area should be put at a low priority for plover nesting surveys.

Jimmy Camp Creek

The site located east off of US Route 24 and north of Peterson Air Force Base (Fig. 1) (T14S, R65W, Sec 3 & W ½, NW ¼ Sec 2; T13S, R65W, Sec 35 & S ½ Sec 26) consisted mostly of the steep sides of the drainage. This provides no nesting habitat for Mountain Plovers; furthermore, the southwestern end of the drainage consists of a Ponderosa pine forest, which is also unsuitable habitat for Mountain Plovers.

The flat areas on the mesa tops on the western edge of the property held tall grass and forb species as did areas adjacent to the city land. A high percentage of the ground in this area was bare, but the tall vegetative structure of the plant cover interspersed between the areas of bare ground precludes nesting by plovers. If the area was grazed or had some other disturbance to lower the height of the vegetation and with the high percent of bare ground this area would constitute good plover nesting habitat. In its current condition it is unsuitable plover-nesting habitat (Fig. 6) and surveying in this area is unwarranted.

DISCUSSION

The survey showed that of the approximately 12,000 acres of Colorado Springs Utilities land surveyed, only 2,500 acres showed potential as plover nesting habitat. Parts of the Colorado Springs Utilities land contained no plover habitat; included in these areas were the Gas Plant and Jimmy Camp Creek. The area at Jimmy Camp Creek may contain a small portion of habitat if land use practices change to include grazing or burning; furthermore, the Banning-Lewis land to the west of the Open Space parcel provides very similar habitat. If this parcel is acquired and grazing or burning becomes part of the regime, this area should be surveyed for nesting plovers.

The open space surrounding Big Johnson Reservoir provided a very small amount of poor to good habitat for nesting Mountain Plovers. Of the 470+ acres surveyed, only 4+ acres were deemed potential habitat, though much of the private land surrounding the reservoir is potential plover habitat. Mountain Plovers tend to use dry barren shorelines of many reservoirs during migration and they may use Big Johnson during both spring and fall migration.

The Clear Spring Ranch consisted of over 4,800 acres, but contained only 255 acres of potential nesting plover habitat. Depending on patterns of land use, the amount of potential plover habitat on the eastern portion of this property may increase or decrease. The plowing of land for agricultural purposes provides habitat, but much of the land at survey time remained in dormant stages and would not provide habitat. In addition, many of these fields are surrounded by tall cottonwoods that would provide perches for Mountain Plover predators and make these fields unsuitable for plovers. Lastly, the fields are irrigated and the only nests that we are aware of have been on dry land agriculture. The remainder of potential habitat on this site is poor to good, but should be surveyed in the spring for Mountain Plovers.

Williams Creek was over 5,600 acres in size with almost half of the land or 2,300 acres being potential plover nesting habitat. Much of this acreage would provide excellent plover nesting habitat and this area should be made a priority if nesting surveys are conducted.

Colorado Natural Heritage Program recommends that a spring survey for plovers be conducted on three of the five parcels of Colorado Springs Utilities land. Two survey methods or a combination of the two could be used to determine the use of potential plover habitat by nesting Mountain Plovers. All surveys should be conducted in the peak of nesting, which would be during the last three weeks of May and first week of June. The simplest survey would be to check for presence/absence of the species during this period of time. An observer would drive or walk the land during prime viewing times, three hours before or after sunrise or sunset, looking for Mountain Plovers.

The second more intensive method would require looking for nesting pairs and active nests. To be most effective this method would consist of driving the land and observing for nesting and courting behavior of Mountain Plovers.

The main focus of any survey should be on the Williams Creek property with lesser time spent on the Clear Creek Ranch and an even smaller amount of time on the Big Johnson parcel.

In conclusion, only the Williams Creek parcel contained excellent plover nesting habitat, the Clear Spring Ranch area contained some good and marginal plover nesting habitat, while the Big Johnson Open Space land has a small amount of marginal habitat. Two parcels, Jimmy Camp Creek and the Gas Plant have no plover-nesting habitat.

REFERENCES

- Graul, W.D. and L.E. Webster. 1976. Breeding status of the Mountain Plover. *Condor* 78: 265-7.
- Knopff, F.L. and B.J. Miller. 1994. *Chardrius montanus*-Montane, Grassland, or Bare-ground Plover? *The Auk* 111(2):504-06.
- Knowles, C.J. and P.R. Knowles. 1984. Additional records of Mountain Plovers using prairie dog towns in Montana. *Prairie Nat.* 16:183-6.
- Knowles, C.J., C.J. Stoner and S.P. Gieb. 1982. Selective use of black-tailed prairie dog towns by Mountain Plovers. *Condor* 84:71-4.
- Luan, H.C. 1957. A life history study of the Mountain Plover, *Eupoda montana*, Townsend on the Laramie Plains, Albany County, Wyoming. Master's thesis, University of Wyoming, Laramie.
- Mengel, R.M. 1970. The North American central plains as an isolating agent in bird speciation. Pp. 280-340 *in* Pleistocene and recent environments of the central Great Plains (W. Dort and J.K. Jones, eds.). University of Kansas Press, Lawrence.
- Shackford, J.S. 1991. Breeding ecology of the Mountain Plover in Oklahoma. *Bulletin of the Oklahoma Ornithological Society* 24:9-13.
- Tyler, J. D. 1968. Distribution and vertebrate associates of the black-tailed prairie dog in Oklahoma. Ph. D. diss., University of Oklahoma, Norman.

Colorado Springs Utilities Mountain Plover Survey Areas

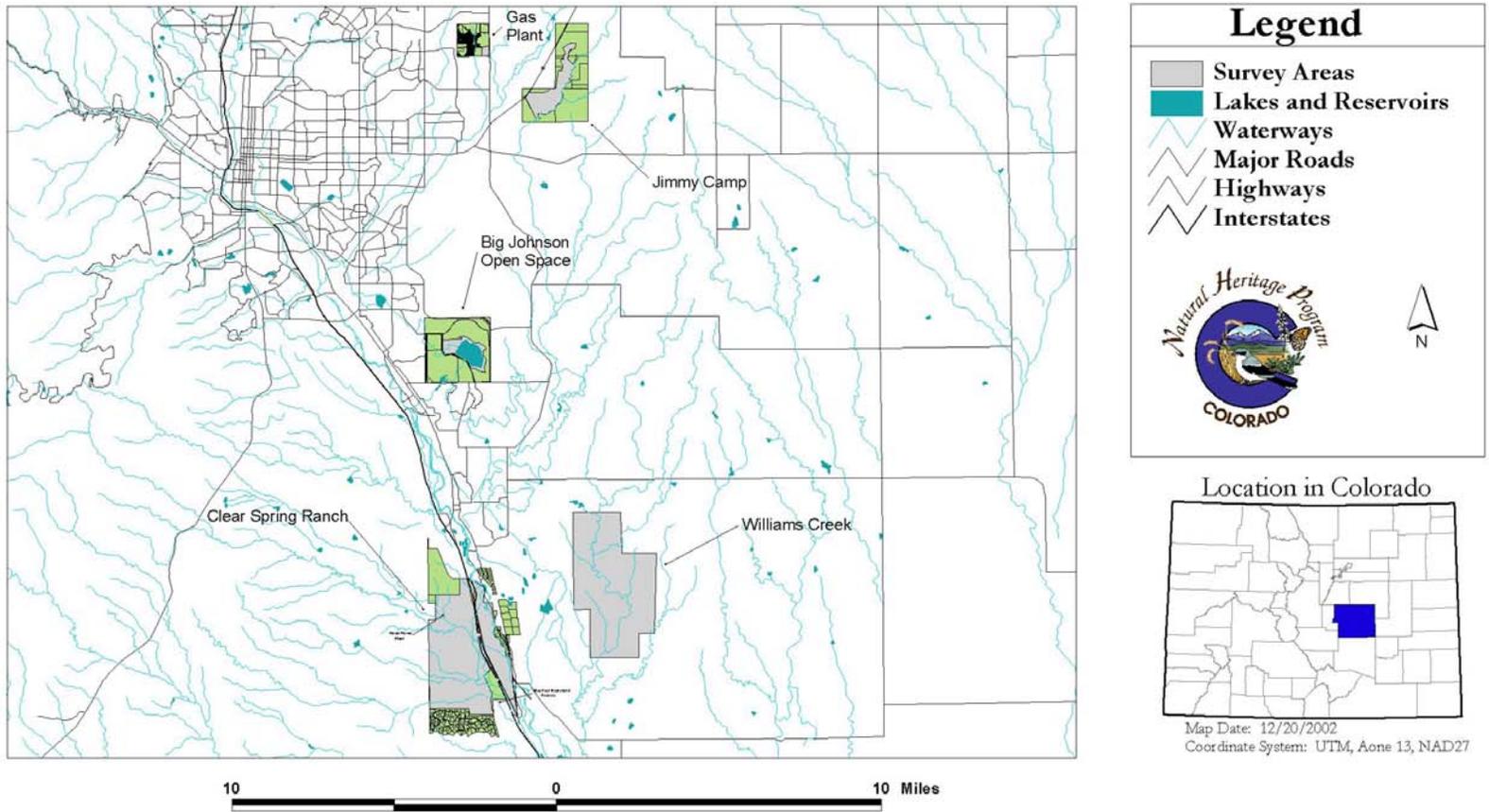


Fig. 1. Colorado Springs Utilities property surveyed for potential Mountain Plover habitat in El Paso County, Colorado (on all figures green areas denote extent of land managed by Colorado Springs Utilities).

Clear Spring Ranch

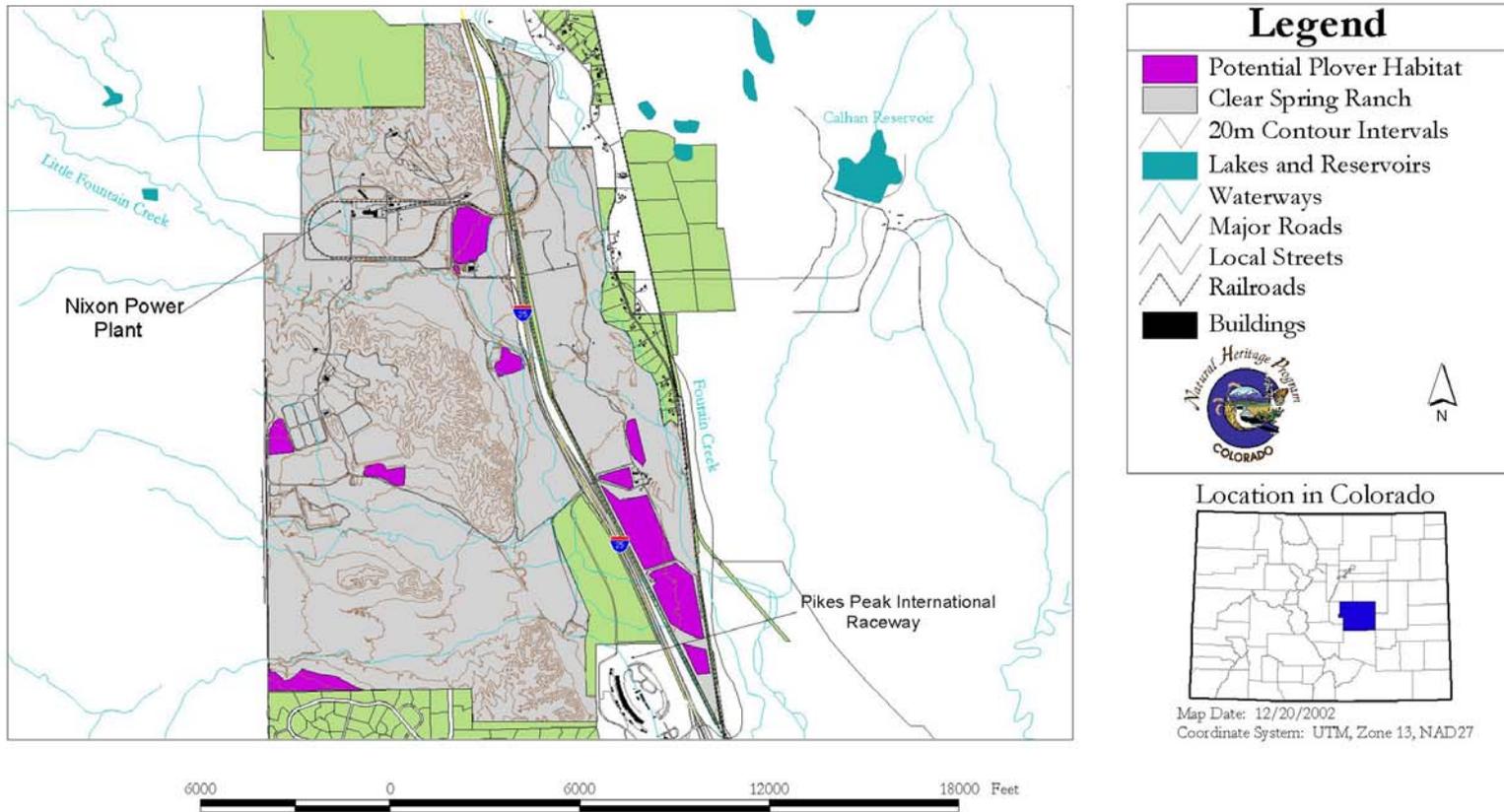


Fig. 2. Areas of potential occupancy by nesting Mountain Plovers identified on the Clear Spring Ranch property.

Williams Creek

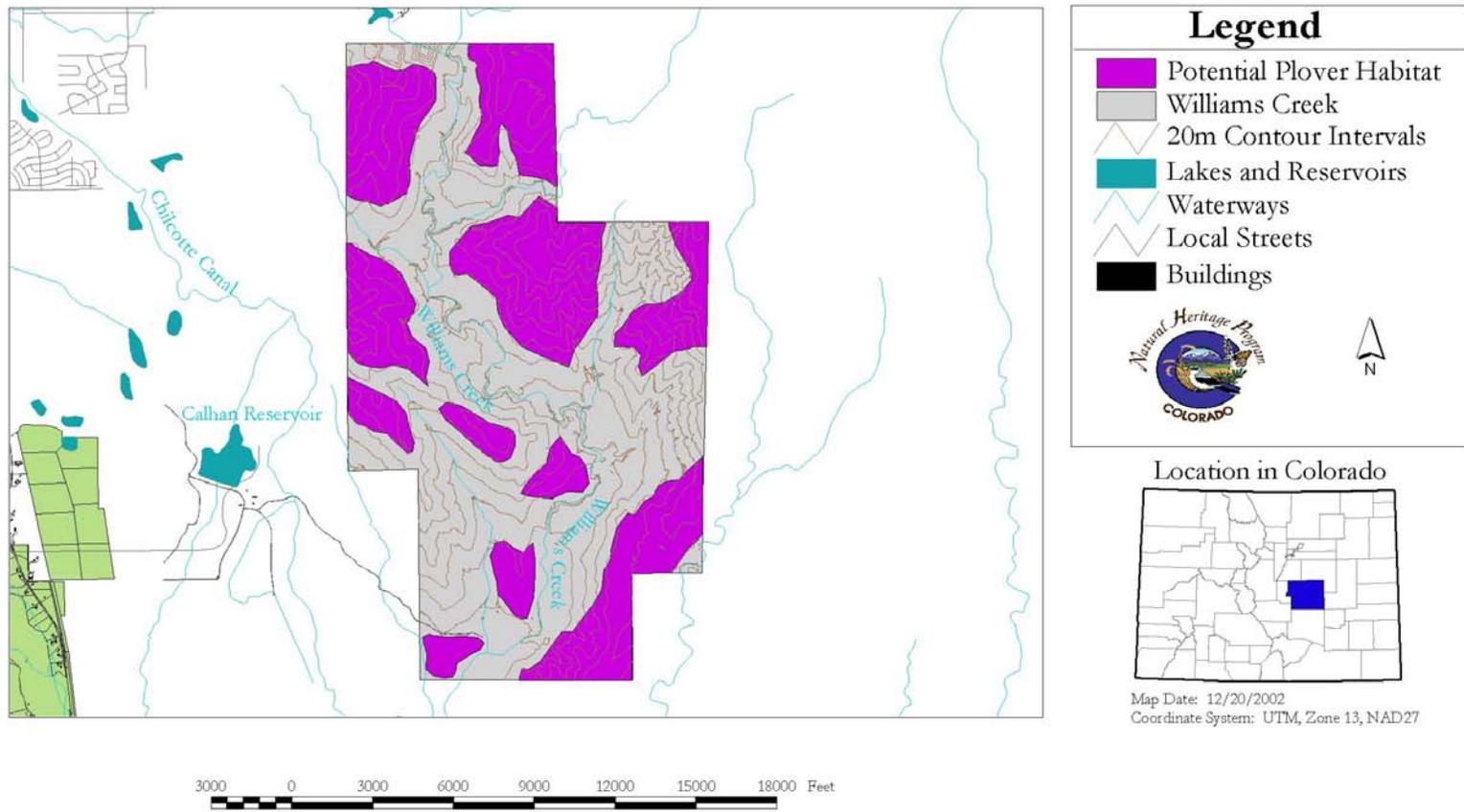


Fig. 3. Areas of potential occupancy by nesting Mountain Plovers identified on the Williams Creek property.

Gas Plant



Fig. 4. The Gas Propane Air Plant where no nesting Mountain Plover habitat was identified.

Big Johnson Open Space

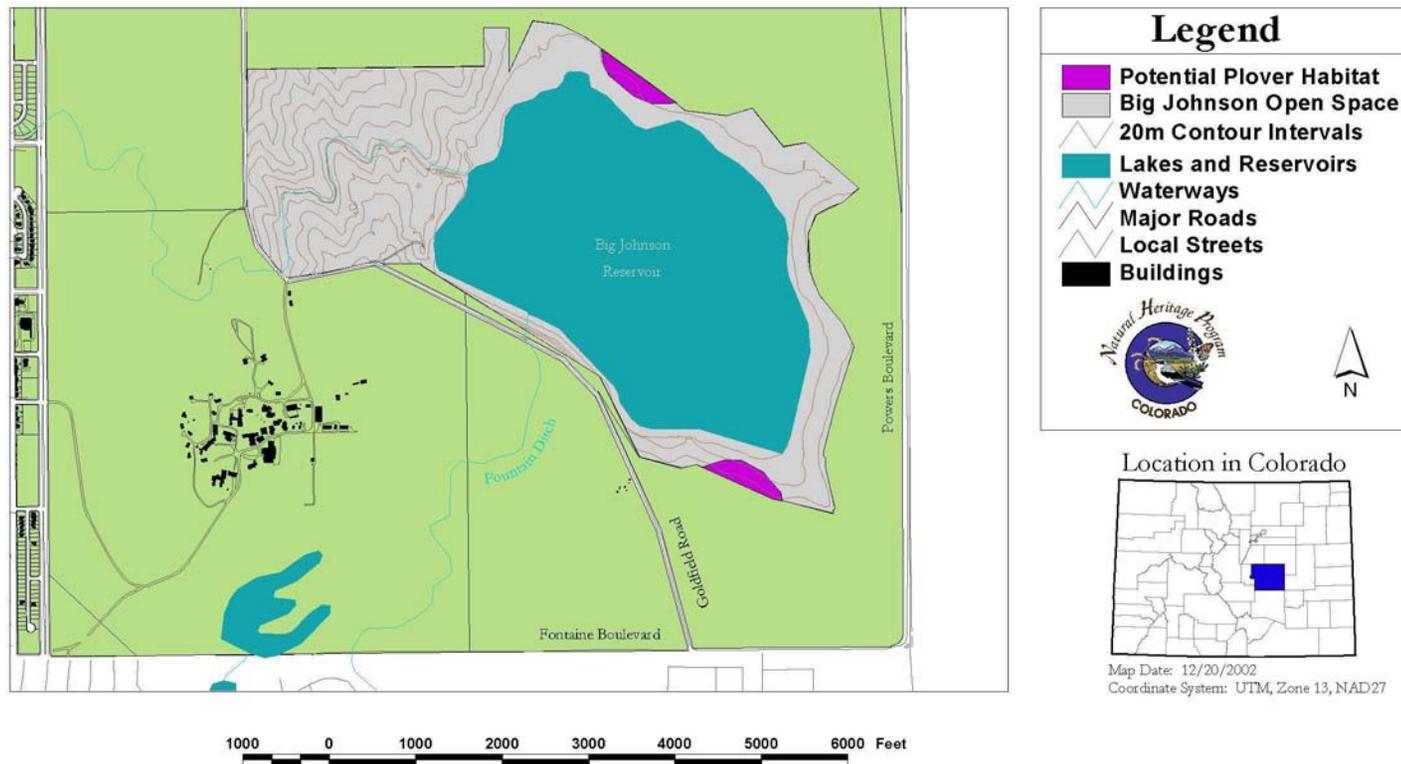


Fig. 5. Areas of potential occupancy by nesting Mountain Plovers identified on Big Johnson Open Space.

Jimmy Camp Creek

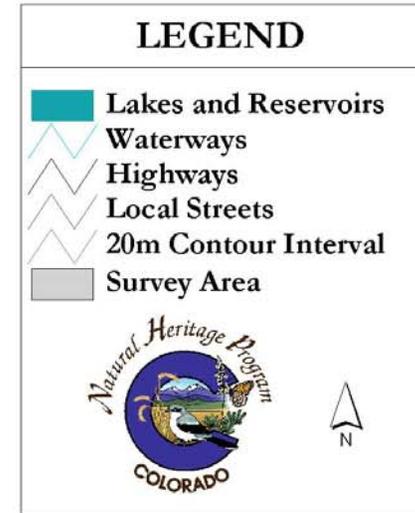
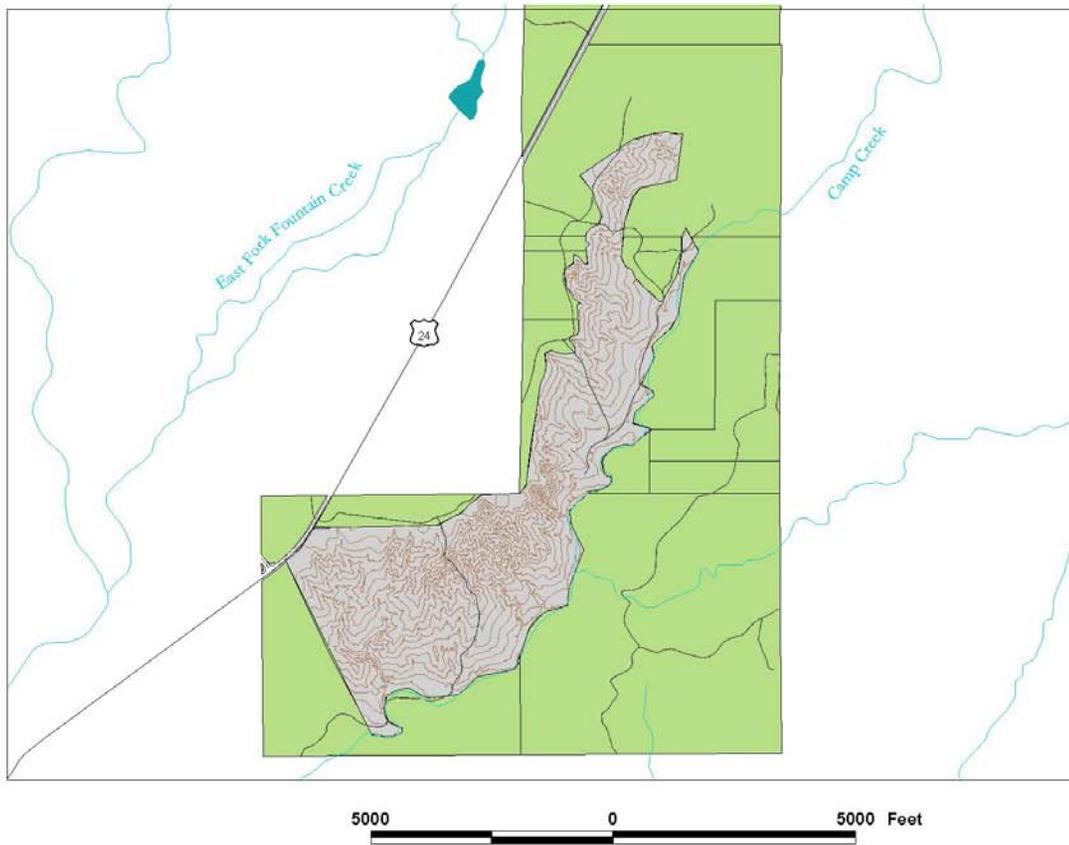


Fig. 6. The Jimmy Camp Creek property where no nesting Mountain Plover habitat was identified.