

Mountain Plover (*Charadrius montanus*)

NMPIF level: Species Conservation Concern, Level 1 (SC1)

NMPIF assessment score: 20

NM stewardship responsibility: Low

U.S. Shorebird Plan Status: Category 5, Highly Imperiled

New Mexico BCRs: 16, 18, (34), (35)

Primary breeding habitat(s): Plains-Mesa Grassland

Other habitats used: Chihuahuan Desert Grassland, Agricultural

Summary of Concern

Mountain Plover is a grassland shorebird species endemic to the western Great Plains and the Colorado Plateau. It has experienced extensive historical loss of habitat and significant population declines since the 1970s.

Associated Species

Long-billed Curlew (SC1), Burrowing Owl, Horned Lark, Vesper Sparrow

Distribution

The breeding range of the Mountain Plover includes prairie grassland and open mesa portions of southern Canada, Montana, Wyoming, Colorado, and the northern half of New Mexico. The range may have formerly extended into southern New Mexico (Ligon 1961), and isolated breeding records exist for west Texas and the central Mexican Plateau. Most of the species population winters in central and southern California, but some birds winter in northern and central Mexico and southern Arizona (Knopf 1996).

In New Mexico, the species breeds primarily in the northeast quadrant, from Las Vegas and Mosquero north in Harding and Union Counties and north of Tres Piedras in Taos County. It also breeds occasionally at Santo Domingo Pueblo and sporadically in the western half of the state from the Plains of San Agustin west to Quemado and north to the Farmington area (Craig et al. 1985). Ligon (1961) reported extensive breeding grounds in Roosevelt County, Lea County, and on Otero Mesa in Otero

County, but the species has not been reported breeding in these areas for decades. Mountain Plovers may be encountered widely across the state in appropriate habitat during spring and fall migration.

Ecology and Habitat Requirements

Mountain Plovers nest in prairie habitat used historically by large herbivore assemblages including bison, pronghorn, and prairie dogs. They prefer large, flat grassland expanses with sparse, short vegetation, and bare ground (Knopf and Miller 1994). The species is primarily associated with shortgrass prairie dominated blue grama, often mixed with buffalo grass or western wheatgrass (Knopf 1996). It also occupies semi-desert scrub and grassland habitats, dominated by short *Atriplex* and *Artemisia* species, in areas west of the Great Plains (Shackford 1991).

Mountain Plovers exhibit a strong association with prairie dog colonies, though there appears to be no obligate relationship (Knowles et al. 1982). The species nests in heavily grazed areas, or on patches of fallow or recently plowed ground or areas which mimic these conditions. In Colorado, shortgrass pastures grazed heavily in summer were used for foraging and nesting; however, Mountain Plovers may be excluded by extreme or long-term overgrazing (Dechant et al. 2001). A rangewide study found nesting in fallow or planted fields (particularly winter wheat) to be fairly common (Shackford et al. 1999). In native habitats, nests are usually located in disturbed sites with 30% or more bare ground (Knopf and Miller 1994). Burned areas may provide suitable nesting habitat until denser vegetation is reestablished. Nests in New Mexico are often located in overgrazed grassland patches, on gravelly ground with very short cover and scattered shrubs interspersed with bare areas (Tolle 1976). Nests are often constructed near rocks, cow pies, or clumps of vegetation (Knopf and Miller 1994).

Mountain Plovers are loosely colonial in breeding. In Colorado, estimated plover densities of 8 adults per square kilometer were reported (Wunder et al. 2003). Average reported density for a variety of Wyoming sites was 4.5 adults per square kilometer (Plumb et al. 2005). Plovers arrive on their New Mexico breeding grounds in early March, and most depart by August. Egg-laying begins mid- to late-April. Renesting may occur following nest failure (Knopf 1996).

Conservation Status

Species Assessment

DISTRIBUTION	5
THREATS	4
GLOBAL POPULATION SIZE	5

LOCAL POPULATION TREND	3
IMPORTANCE OF NEW MEXICO TO BREEDING	3
COMBINED SCORE	20

Mountain Plover is a Species Conservation Concern, Level 1 species for New Mexico, with a total assessment score of 20. In the U.S. Shorebird Conservation Plan, it receives maximum vulnerability scores of 5 for its small breeding range and population size. NMPIF assigns a score of 4 for threats to breeding in the state. Mountain Plover is a U.S. Fish and Wildlife Service (2002) national Bird of Conservation Concern.

Population Size

The U.S. Shorebird Conservation Plan provides a population estimate of 9,000. An estimate of 11,000 to 14,000 birds was provided more recently by Plumb et al. (2005). The Mountain Plover population in New Mexico is unknown. Hawks Aloft (2006) estimates that several hundred plovers might breed north of Tres Piedras in Taos County, New Mexico; however, plovers might be widespread and numerous on private rangeland in the northeast portion of the state.

Population Trend

It is estimated that Mountain Plover populations have been reduced by two-thirds since the 1960s (Knopf 1996). BBS data for New Mexico show a sharp and statistically significant downward trend, but the species is present on only 4 routes and hence data are considered deficient to assess Mountain Plover population trends in the state. BBS data for 1966-2004 are:

	Annual Trend (%)	P-value	Number of Routes
New Mexico	-4.3	0.04	4
FWS Region 2	-4.3	0.03	7
Western States	-0.7	0.83	18
Survey-wide	-2.7	0.01	43

Threats

Like other endemic grassland species, Mountain Plovers are thought to have declined due to loss or alteration of habitat. This species is adapted to a disturbance regime in which large grazing herbivores and/or prairie dog colonies produce a suitable mixture of short grass and bare ground habitat. Loss of native grazers has altered the dynamics of shortgrass prairie ecosystems, though contemporary cattle grazing may help maintain suitable plover habitat. The spread of non-native tall grass species is detrimental to Mountain Plovers. Energy development may disturb nesting birds in some areas. Mountain Plovers may be limited in some areas by nest predators. On agricultural lands, many nests initiated in fallow fields are destroyed by farm equipment when late-season crops are planted in May (Gillihan et al. 2001, Knopf 1996).

Management Issues and Recommendations

Management for breeding populations of Mountain Plovers in New Mexico should concentrate on the maintenance of suitable habitat in traditional breeding areas. Both grazing and burning can be useful tools for maintaining the open, short grass habitat preferred by nesting Mountain Plovers. Optimal vegetation height for the species is uncertain. Plovers often favor areas where vegetation is very short-- 2 inches or less (Gillihan et al. 2001). In Colorado shortgrass, Ball (1996) recommended management of grasslands to maintain vegetation <25 cm in height. In Oklahoma cropland, birds have been found nesting in vegetation as tall as 38 cm (Shackford 1991). In some areas, particularly outside of New Mexico, management issues include protection of birds nesting on agricultural lands.

NMPIF Recommendations

- Seek to prevent further conversion of rangeland used by Mountain Plovers to agriculture or other forms of development.
- Avoid seeding of exotic grasses in native rangeland habitat.
- Seek to protect nesting areas from human disturbance during the nesting and brood rearing season. Protect traditional nesting sites as this species exhibits breeding site fidelity.
- Maintain prairie dog towns where they exist, as associated habitat benefits Mountain Plovers. Where landowners are amenable, increase or introduce prairie dogs in northeast New Mexico.
- Graze in late winter to produce patchy low vertical structure including bare ground and very short grass areas suitable for nesting. Remove cattle from these pastures after March until mid-July or August. Avoid persistent and widespread overgrazing that eliminates all cover (Gillihan et al. 2001, Dechant et al. 2001).
- In agricultural areas, form partnerships with landowners to establish monitoring programs and encourage small protective buffers around nests in sensitive areas.

Species Conservation Objectives

U.S. Shorebird Conservation Plan Objectives

- Increase population to estimated 1970 level of 20,000 birds.

NMPIF Objectives

- Develop and carry out a monitoring program to adequately assess status and trends of Mountain Plover populations in New Mexico. Maintain known populations in the northeastern plains, north and west of Tres Piedras, on Santo Domingo Pueblo and in the De-Na-Zin Wilderness.

Sources of Information

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