

Mountain Plover

Charadrius montanus

REGULATORY STATUS

USFWS: Listing Denied; Migratory Bird

USFS R2: Sensitive

UWFS R4: No special status

Wyoming BLM: Sensitive

State of Wyoming: Protected Bird

CONSERVATION RANKS

USFWS: Species of Conservation Concern

WGFD: NSSU (U), Tier I

WYNDD: G3, S3

Wyoming Contribution: HIGH

IUCN: Near Threatened

PIF Continental Concern Score: Not ranked

STATUS AND RANK COMMENTS

Mountain Plover (*Charadrius montanus*) was petitioned for listing as Threatened under the Federal Endangered Species Act in 1999¹. Listing was denied in 2011, based upon the United States Fish and Wildlife Service finding that the species was not in danger of extinction in all or substantial portions of its range².

NATURAL HISTORY

Taxonomy:

There are currently no recognized subspecies of Mountain Plover^{3,4}.

Description:

Mountain Plover is identifiable in the field. The sexes are similar in size and appearance. The species is similar in size and shape to other *Charadrius* plovers such as the Killdeer (*C. vociferus*), but has a more upright posture, longer legs, and comparatively short tail. During breeding, it has a distinctive black loreal stripe extending from the black bill to the eye, with a forecrown mottled to solid black. Upperparts are a fairly uniform sandy brown, extending along the side of the neck, ear coverts, and chest. The forehead, throat, and breast are white, which extends into a longish supercilium. Juveniles are precocial upon hatching, and have cream or cinnamon buff upperparts with conspicuous black spots. Crown, wings, and rump have some russet while the forehead, throat, and underparts are white. Juvenal plumage is similar to non-breeding adult plumage and is attained shortly after they are first able to fly³. This plumage is retained into the first winter, with feathers sometimes retained into the first spring breeding season, giving a slight scalloped appearance dorsally^{3,5}. Similar species found in Wyoming are other plovers in the genus *Charadrius*: the Semipalmated Plover (*C. semipalmatus*), the Snowy Plover (*C. nivosus*), and the Killdeer. It is distinguished from all by the lack of any dark breast bands⁶.

Distribution & Range:

Wyoming forms a significant portion of the breeding range of Mountain Plover, which also includes east-central and central Colorado, and eastern Montana, with localized breeding in neighboring states and Mexico. Mountain Plover overwinters outside of Wyoming. Distribution during migration is unknown. The distribution in Wyoming appears stable, though sites throughout its range show fluctuation in numbers ⁷.

Habitat:

Research has recently shown that Mountain Plover is best considered a sparsely-vegetated desert species rather than a short grass prairie species, though it does use sparsely-vegetated prairie as well ^{7,8}. In Wyoming and elsewhere in its range, it utilizes areas grazed by herbivores, including prairie dogs (*Cynomys* spp.), Bison (*Bison bison*), Pronghorn (*Antilocapra americana*), and domestic livestock. It also uses active agricultural fields and recently burned grasslands. Agricultural fields can be sink habitat since nests are often lost due to disturbance from farm equipment ⁹. In the western periphery of its range, it uses xeric shrubland communities dominated by bare ground with saltbush (*Atriplex* spp.) and sagebrush (*Artemisia* spp.). In particular, the species uses habitat with vegetation shorter than the surrounding area, generally less than 5 cm tall with a bare ground component typically over 30%. The bare ground component can be higher than 70% in some habitats ^{5,7,8,10}. The species also prefers habitat with flat topography, generally with less than 5% slope. The minimum area required for a nesting pair can vary widely depending on habitat, from a few ha to over a hundred ha. The average home range size is 56.6 ha ^{7,11}. In Wyoming, the species showed less affinity for prairie dog colonies than elsewhere ^{5,8}. Concentrated areas of breeding in Wyoming include the Powder River, Shirley, Laramie, Big Horn, Great Divide, and Washakie basins ^{5,8,12}. The species overwinters in the interior lowlands of southern and central California, and to areas of Texas and Mexico. In winter, Mountain Plover utilizes agricultural fields, but the species will not occupy areas with vegetation exceeding 20 cm in height ⁵.

Phenology:

Mountain Plover arrives in Wyoming for the breeding season by late March or early April, and leaves for the winter grounds by mid-October ⁷. Nesting begins in Wyoming by mid-May, and continues through mid-July. Timing of breeding is affected by latitude and elevation ⁵.

Diet:

Mountain Plover is insectivorous, feeding on ground-dwelling arthropods including beetles (order Coleoptera), grasshoppers and crickets (Orthoptera), and ants (Hymenoptera). The same food is consumed on the wintering grounds ⁷.

CONSERVATION CONCERNS

Abundance:

Continental: WIDESPREAD

Wyoming: UNCOMMON

In 2009, the national abundance of Mountain Plover, based on cumulative data, was estimated to be between 15,000–20,000 birds ¹³. Mountain Plover has a statewide abundance rank of UNCOMMON and also appears to be uncommon within suitable environments in the occupied area ¹⁴. The species is patchily distributed throughout Wyoming where appropriate habitat exists ⁵, and in 2003 the state population was estimated to be 3,393 ¹². From 1968–2015, annual Wyoming Breeding Bird Survey (BBS) detections of Mountain Plover ranged from 0 to 20

(average = 5), with 2 recorded in 2015 ¹⁵. Annual detections of Mountain Plover ranged from 4 to 29 during surveys for the Integrated Monitoring in Bird Conservation Regions (IMBCR) program between 2009–2015 ¹⁶.

Population Trends:

Historic: LARGE DECLINE

Recent: UNKNOWN

Survey-wide trend data from the North American BBS indicate that Mountain Plover numbers experienced a statistically significant annual decrease of 3.11% from 1966–2013 and a non-significant annual decrease of 0.97% from 2003–2013 ¹⁷. Wyoming BBS trend data indicate that Mountain Plover declined by 0.58% annually from 1968–2013 and 0.09% from 2003–2013; however, neither state estimate was statistically significant ¹⁷.

Intrinsic Vulnerability:

HIGH VULNERABILITY

The narrow habitat requirements and restrictive breeding biology of Mountain Plover make the species highly vulnerable. The species is restricted to habitats of sparsely vegetated desert or short grass prairie, characterized by sparse and short vegetation cover ^{7, 8}. The species has low population density, low dispersal, and large home area requirements ⁵. Chick survival rate is low in a variety of habitats ¹⁸.

Extrinsic Stressors:

MODERATELY STRESSED

Threats to the Mountain Plover are generally from human impacts on the landscape, making the species moderately vulnerable in Wyoming. Across the species range, mechanical treatment of the native landscape threatens the species. Conversion of natural prairie habitat to agriculture, general degradation of habitat including habitat fragmentation and prairie dog eradication, can negatively affect the species. In Wyoming, the species is not as strongly tied to prairie dog habitats, and habitat conversion is less than in other plains state, so these have less an impact in Wyoming than elsewhere ^{5, 7, 8}. Invasive grass species, by altering habitat structure, have been shown in Colorado to negatively affect habitat suitability. Habitat in close proximity to suburban and urban development may experience increased predation rates by native and non-native predators ⁵. Livestock grazing regimens that result in a uniform vegetation structure can produce non-viable habitat, while pervasive open range grazing may produce beneficial habitat ^{7, 8}. Development of oil, gas, and coal resources may negatively impact the Mountain Plover through vehicle collisions, especially flightless chicks, and habitat loss through surface disturbance ⁷. Conversion of traditional winter habitat to agriculture in California may have a neutral effect on the species, while pesticide use on these winter grounds as well as on breeding areas may have a negative effect ^{3, 7, 19}. Extreme weather events can cause nest destruction ⁵.

KEY ACTIVITIES IN WYOMING

Mountain Plover is classified as a Species of Greatest Conservation Need (SGCN) by the Wyoming Game and Fish Department, and as a Level I Priority Bird Species requiring conservation action in the Wyoming Bird Conservation Plan ²⁰. The first systematic survey of the species in Wyoming was conducted in 2003 and was repeated in 2004 ⁸. As a result of the ESA listing proposal in 1999, a permanent monitoring program was started in 2010 in the Laramie, Shirley, Big Horn, Great Divide, and Washakie Basins ²¹. This program consists of permanently established transects to be surveyed each year. Additionally, WGFD initiated a targeted

grassland SGCN monitoring program in 2015 for Mountain Plover, Upland Sandpiper, Long-billed Curlew, and Burrowing Owl ²².

ECOLOGICAL INFORMATION NEEDS

Migration may be a significant source of mortality, suggesting that better information on migration could be important to management ¹⁸. In Wyoming, improving knowledge of abundance and habitat use at breeding sites, as well as assessing demographic variables at those sites, would benefit status assessments. Similarly, the distribution and abundance of the species on large tracts of private land, particularly in southeastern Wyoming, is relatively unknown. The demography of Wyoming populations is poorly known. Information on the impacts of natural resource extraction on breeding individuals is needed to inform mitigation decisions ⁵.

MANAGEMENT IN WYOMING

This section authored solely by WGFD; Zachary J. Walker. Mountain Plover is classified as a SGCN in Wyoming due to habitat degradation and fragmentation associated with fire suppression and other anthropogenic factors. Current monitoring programs for this species should be continued to gain a better understanding of population trends. Additional research for Mountain Plover should focus on examining population demographics, identifying critical breeding areas, and examining possible impacts of natural resource extraction development. Best management activities for this species include the conservation of suitable grassland habitats. In areas where Mountain Plover is known to occur, prescribed burns should be conducted in the fall and be designed to retain nesting cover for the following breeding season while reducing shrub density. Grazing may be used to maintain habitat, and grazing pressure should be varied and interspersed leaving a variety of suitable habitats. Prairie dog colonies should be retained when possible, and native prairie ecosystems should be conserved to the greatest extent possible for Mountain Plover.

CONTRIBUTORS

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Figure 1: Mountain Plover in Albany County, Wyoming. (Photo courtesy of Shawn Billerman)

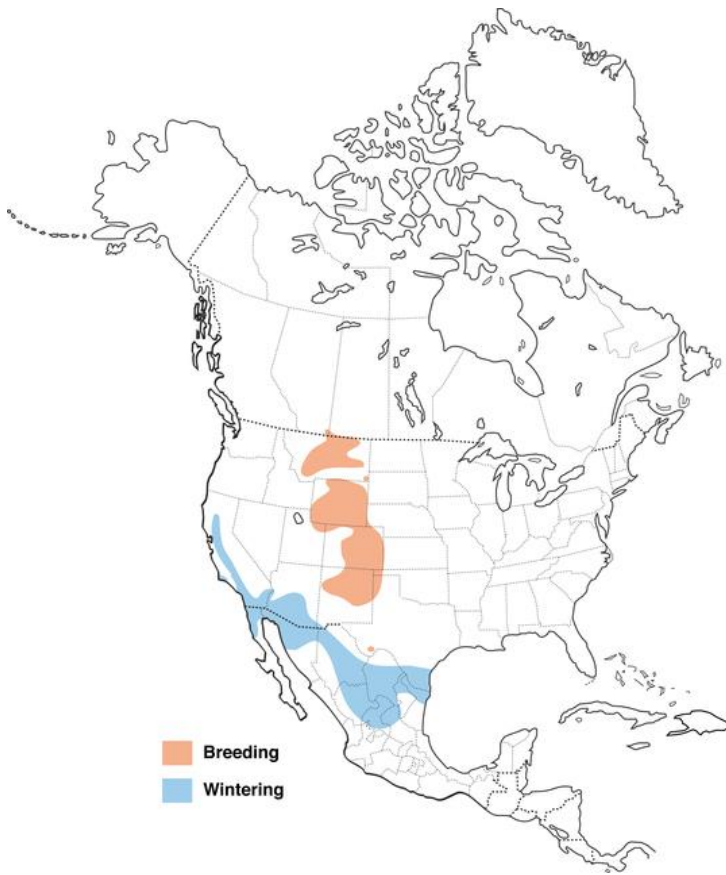


Figure 2: North American range of *Charadrius montanus*. (Map courtesy of Birds of North America, <http://bna.birds.cornell.edu/bna>, maintained by the Cornell Lab of Ornithology)



Figure 3: Typical Mountain Plover habitat, Pawnee National Grassland, Colorado. (Photo courtesy of Stephen J. Dinsmore)

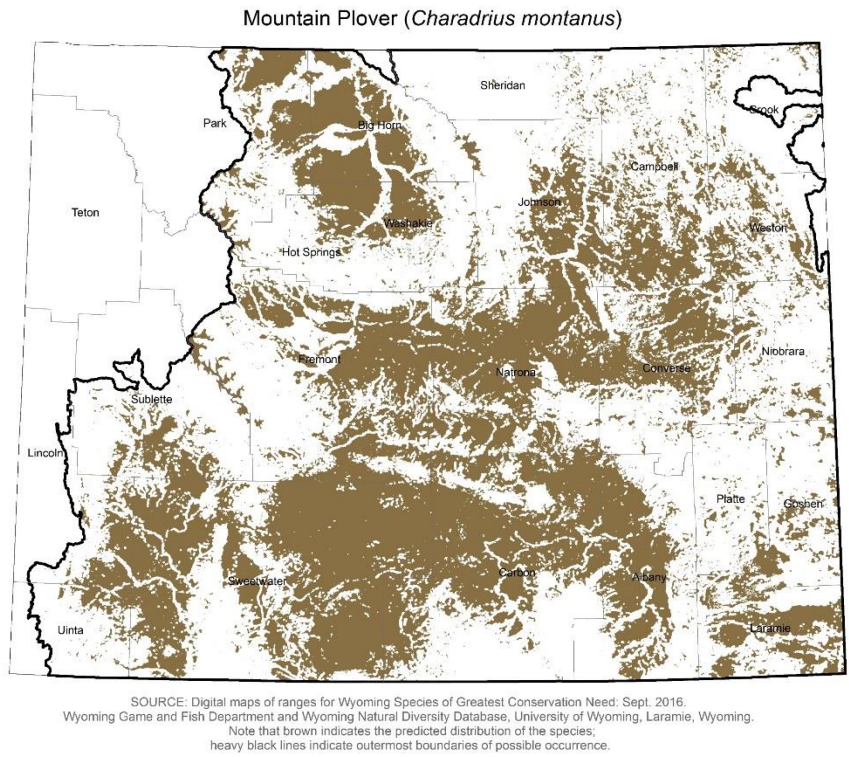


Figure 4: Range and predicted distribution of *Charadrius montanus* in Wyoming.



Figure 5: Wyoming desert–subshrub Mountain Plover habitat in south-central Wyoming. (Photo courtesy of Ian M. Abernethy)