ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** ABNNB03100
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Charadrius montanus*
COMMON NAME: Mountain plover, Rocky mountain plover, Bullhead snipe, Field snipe, Prairie plover, upland plover
SYNONYMS: *Aegialitis montanus, Podasocys montanus, Aegialitis asiaticus var. montanus, Eudromias montanus, Eupoda montana*
FAMILY: Charadriidae

AUTHOR, PLACE OF PUBLICATION: Towns., 1837, Jour. Acad. Nat, Sci. Philadelphia, vol. vii. p. 192.

TYPE LOCALITY: Sweetwater River, Fremont County, Wyoming.

TYPE SPECIMEN: John Kirk Townsend, 1832, sn.

TAXONOMIC UNIQUENESS:

DESCRIPTION: Fairly large plover, 21.0-23.5 cm (8.27-9.3 in) and 90-110 g, with a wingspread of about 44.45-49.53 cm (17.5-19.5 inches). Light brown above and a buffy colored breast; mainly white underwings, white throat and belly. Buffy tinge on breast is more extensive in winter plumage. Bill black; iris auburn; legs dull, light brown-yellow, feet dark brown, claws black. Best field marks in flight are thin white line on dorsal wing and broad black subterminal tail band.

Breeding plumage includes a white forehead and line over the eye, contrasting with the dark crown. Breeding birds have distinctive black loral stripe extending from the black bill to the eye, giving the appearance of all 3 being one structure; forecrown becomes mottled black to solid black. Chicks do not have the same markings as adults; they are whitish below and pale brown above with numerous black spots on the upper head, back and wings.

AIDS TO IDENTIFICATION: Unique coloration not easily confused with any other shorebird within its range. Winter plumage differs from winter Golden-plovers (*Pluvialis dominica*) by having a grayer unmottled back, paler legs, a light wing stripe, white (vs. grayish) underwings, and a dark tail band (Peterson 1990). About the size of a Killdeer (*Charadrius vociferus*) but with longer legs and more erect posture (Knopf 1996).

ILLUSTRATIONS:
Color drawing (National Geographic Society, 1999:156).

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Color drawing (Peterson, 1990:127).
Color photo (Knopf, 1996:1).
Color photo (Farrand, Jr., 1988:159).

TOTAL RANGE: Nesting birds are reported in parts of the Rocky Mountain and Great Plains States from Canada south to Texas, and possibly in Mexico. Most breed in Colorado and Montana, however, breeding also occurs in Wyoming, New Mexico, Arizona, Nebraska, Utah, Kansas, Oklahoma and Texas.

Most mountain plover's winter in California, with many fewer wintering plovers reported from Arizona, Texas and Mexico.

RANGE WITHIN ARIZONA: Apache County (Breeding). Cochise, Pinal, Mohave, and Yuma counties (Non-breeding).

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: One of few shorebirds that live mainly away from water in dry regions. It is fast but does not often fly, but if disturbed, takes off and flies low, briefly, with alternate flapping and soaring, with wings down curved (Terres 1980). A gregarious bird outside breeding season (August to mid-March), they forage and roost in loose flocks of changing composition. Flock size before migration may exceed 1000 on southern Great Plains in late summer; may form flocks of 20 to 180 individuals during the winter, increasing in size as spring migration approaches. In general, mountain plovers spend about 4 months on breeding grounds, 5 months on wintering habitat, and the remaining time mostly in their fall migration (USFWS 1999). Both males and females return to the same breeding area in subsequent years. Site fidelity seemed poorly developed in winter range in southern California, but winter survival rate was high (Knopf and Rupert 1995).

Species generally silent. Calls heard on breeding grounds include low, drawn-out whistles (the *Wee-wee* call) and harsh notes. In migration and winter, they give a harsh *krrr* or *kip* note. Moderately loud bill-clacking, in rapid succession, sometimes given during Tail-Down Rush (display used especially to defend the nest against a conspecific intruder or potential predator). When disturbed at nest, anxiety calls include the *Tu-lup* and *Ke-op* calls (Knopf 1996).

More than half of the clutches are lost to predators, mainly coyote (*Canis latrans*) and swift fox (*Vulpes velox*); chicks also experience high rates of predation (USFWS 1999). Other predators recorded include thirteen-lined ground squirrel, Swainson's Hawk (*Buteo swainsonii*), Prairie Falcon (*Falco mexicanus*), Loggerhead Shrike (*Lanius ludovicianus*), and Bullsnake (*Pituophis melanoleucus*). When nests are perceived to be threatened, adults may exhibit distraction displays, by feigning injury, often with a broken wing display.

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REPRODUCTION: Generally arrives on nesting grounds throughout its range in late-March to mid-May, where they begin defending territories within a few days of arriving; territorial during breeding season only. Breeding begins late April in the south to late May in the north. Territorial males perform aerial displays to attract a mate, flying to a height of 15 to 30 feet, holding their wings up over the back in a deep V, then floating back to the ground in what is called the falling leaf display. Females also perform the falling leaf display, but only after mating. Nests are constructed on the ground in a shallow depression or simple scrape, which may be lined with plant or organic material, generally added after completion of clutch. Adequate material is added until eggs are about half buried. Although short vegetation, bare ground, and an object (i.e. manure pile, clump of forbs, rock) are characteristic of nest sites, the presence of some taller vegetation to shade chicks and adults also has been reported as necessary.

Generally monogamous, with pair bond maintained for breeding season only. Eggs laid number 2 to 4, usually 3, and are olive, spotted and scrawled with black. Both sexes incubate eggs for 29 days. Chicks leave nest within 3 hours of last egg hatching. They pick at various objects during first day and appear capable of catching small insects by end of that first day. Broods move progressively farther away from nest, up to 2 km in first 2-3 days, with an ultimate brood-rearing area of 28-91 ha from hatching to fledging (Knopf 1996). Nestlings are precocial, and fledge in about 33-34 days. In years of abundant rainfall and an ample supply of insects, the female may lay a second clutch while the male incubates the first clutch. The female sometimes switches mates between clutches, which would be advantages when original males are not available at the time second clutches are ready for fertilization. The adult will brood the chicks through the first day. Thereafter, chicks are brooded in early morning for about 2 weeks. Attendant adult remains with chicks through fledging (Knopf 1996).

FOOD HABITS: Feeds primarily on insects such as grasshoppers, crickets, beetles, ants and flies. Seems to forage most effectively early in morning when prey is sluggish. Typical foraging behavior is to make a short run of about 1 m, then stop and survey for insects moving on surface. Once prey is spotted, bird makes a second quick run to secure it. All water requirements are obtained from food items. Although general inhabitants of arid shortgrass and semi-desert grasslands, they will forage on slopes and ridges. Microhabitat for foraging are generally extensive areas of disturbed ground surface or areas of short (<2 cm) vegetation with interstitial spaces of bare ground.

HABITAT: Mountain plover's frequent xeric or disturbed uplands; rarely found near water. They are considered to be strongly associated with sites of heaviest grazing pressure, to the point of excessive surface disturbance. Short vegetation, bare ground, and a flat topography are now recognized as habitat-defining characteristics at both breeding and wintering locales. Breeding range occurs on high plains or shortgrass prairie sites used historically by large herbivore assemblages, specifically of prairie dogs (*Cynomys* spp.), bison

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(*Bison bison*), and pronghorns (*Antilocapra americana*). It also nests sporadically in more xeric, desert shrub zones to the west (Knopf 1996). Nonbreeding range occurs on shortgrass plains and fields, plowed fields and sandy deserts.

This bird evolved on grasslands that were inhabited by burrowing mammals such as kangaroo rats (*Dipodomys* sp.), prairie dogs (*Cynomys* sp.), and badgers (*Taxidea taxus*), and in areas of major grazing ungulate concentrations of bison (*Bison bison*), elk (*Cervus elaphus*), and pronghorn (*Antilocapra americana*). Now, the primary grazer on both breeding and wintering habitat is domestic livestock, although prairie dogs and/or giant kangaroo rats influence habitat locally at a few sites (USFWS 1999). In Montana and Oklahoma, researchers find the bird closely associated with black-tailed prairie dog towns in landscapes with taller vegetation.

ELEVATION: Moderate elevations of 3,000-8,000 ft (915-2440 m). Knopf (1996) reports breeding elevations of 2,438-9,843 ft (640-3000 m). AZ breeding occurrences: 6,645-6,995 ft (2027-2134 m).

PLANT COMMUNITY: Shortgrass and shrub-steppe landscapes. Vegetation at nest sites throughout the breeding range is variable, but usually dominated by needle-and-thread (*Stipa comata*), blue gramma (*Bouteloua gracillis*), buffalo grass (*Buchloe dactyloides*), plains prickly pear cactus (*Opuntia polycantha*), June grass (*Koeleria cristata*), and sagebrush (*Artemisia* sp.), (USFWS 1999).

POPULATION TRENDS: The current total population is estimated to be between 8,000 and 10,000 individuals. Large population declines in 50-90% of its range. Breeding Bird Survey trends analyzed for the period 1966 through 1996 document a continuous decline of 3.7 percent annually for this species, the highest of all endemic grassland species. Between 1966 and 1991, the continental population of the mountain plover declined an estimated 63 percent. Conversion of grassland habitat, agricultural practices, management of domestic livestock, and decline of native herbivores are factors that likely have contributed to their decline (USFWS 1999). There is slim chance of restoration to historical levels due to agricultural development of the western Great Plains and California. The best hope is the stabilization of the declining population across North America (TNC 2000).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: SC (USDI, FWS 2011)
[PT USDI, FWS 2010]
[SC USDI, FWS 2003]
[PT USDI, FWS 1999, 2002 (special rule)]
[C USDI, FWS 1996]
[C2 USDI, FWS 1985]

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STATE STATUS: None

OTHER STATUS: Not Listed Forest Service Sensitive (USDA, FS Region 3 2007)
[Forest Service Sensitive (USDA, FS Region 3 1999)]
Not Bureau of Land Management Sensitive (USDI, BLM AZ 2008)
[Bureau of Land Management Sensitive (USDI, BLM AZ 2005)]
Group 4 (NNDFW, NESL 2000)
[Group 4 NNDFW, NESL 2005, 2008]
Full Species determined Threatened (Secretaria de Medio Ambiente 2000)

MANAGEMENT FACTORS: Management should focus on maintaining short, sparse vegetation through protection of prairie dog towns, grazing by livestock/buffalo, and/or prescribed burning. Off-road vehicle access should be restricted between 1 April and 1 August in areas identified as plover habitat. Areas of potential plover habitat should not be converted to agriculture nor have "range improvements" that increase forage for livestock; particularly planting exotic grasses (TNC 2000). Mountain Plovers respond to burned grasslands both in spring for nesting and in fall and winter for night roost sites (Knopf 1996).

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Accurate, standardized, repeatable monitoring programs should be developed and implemented throughout the species' range. A field technique to sex birds needs to be developed; this will allow determination of the contribution of male-incubated clutches to the population. Locations of other predictable wintering concentrations (outside of California) need to be identified, and population monitoring efforts established in those areas (Knopf 1996 and TNC 2000). Incentives to landowners to leave some cultivated areas unplanted until plover eggs have hatched; grazing plans for native range to encourage high grazing intensity in plover nesting areas.

LAND MANAGEMENT/OWNERSHIP: Bureau of Land Management – Safford FO; State Land Department; Private.

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

Revised: 2001-02-07 (SMS)
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