

Current status of the Mountain Plover in the Central Valley

Leo Edson, EDAW, Inc., 10423 Old Placerville Road, Suite 100, Sacramento, CA 95827

Kevin Hunting, Department of Fish and Game, Habitat Conservation Planning Division, 1416 9th Street, Sacramento, CA 95814

Mountain Plovers (*Charadrius montanus*) are thought to winter primarily in California, with fewer reported from Texas, Arizona, and Mexico (USFWS 1999). In California, Mountain Plovers are most frequently reported and found in the greatest numbers in two general locations: (1) the Central Valley south of Sacramento and west of U.S. Highway 99; and (2) the Imperial Valley (USFWS 1999). Unfortunately, little quantitative data have been published that can be used to evaluate the status and distribution of this species within these two regions, or in the remainder of its winter range.

The Mountain Plover has been declining at an alarming rate throughout North America. Between 1966 and 1991, the population of the species declined an estimated 63 percent (USFWS 1999). The need to gain a better understanding of the Mountain Plover's winter range recently became imperative when the species was proposed for listing as federally threatened (on 16 February 1999), based on the conclusion that, while not in immediate danger of extinction, it is likely to become an endangered species in the foreseeable future unless measures are taken to reverse its decline (USFWS 1999). Knopf and Rupert (1995) concluded that the decline appears to be primarily attributable to long-term processes (i.e., habitat loss) on the breeding grounds. However, factors that may be contributing to the decline on the wintering grounds (e.g., the use of pesticides) have not yet been fully evaluated. This paper summarizes our knowledge of the current status of the Mountain Plover in the Central Valley, based on recent census data, anecdotal observations, and a review of relevant literature.

STUDY AREA AND METHODS

The distribution of Mountain Plovers was evaluated in portions of 25 counties in northern and central California (Figure 1). Our evaluation focused on the Central Valley and adjacent valleys of the Coast Range. The range was depicted with two separate polygons: (1) the Central Valley south of Butte County, plus some of the smaller adjacent valleys in the Coast Range foothills (e.g., Panoche Valley); and (2) the inland valleys of Monterey and San Luis Obispo counties (e.g., Carrizo Plain and Cholame Valley). Currently, the best available range map for this species is in Zeiner et al. (1990). For purposes of this study, we considered this to be the former range.

Sightings compiled herein were collected from a variety of sources and covered the period beginning with fall of 1997 through the winter of 1999.

Specific requests for Mountain Plover reports were posted in Audubon chapter newsletters, the *Central Valley Bird Club Bulletin*, and on electronic mailing lists (e.g., rare bird alerts, Calbird, YoloBird, etc.). The following information was requested for each sighting: exact location, date, habitat type, and the name of the observer[s]. Generally, reports were "accepted" for purposes of our evaluation if verbal confirmation and/or written documentation of the report was obtained from the observer. Second-hand reports, or reports posted on rare bird alerts for which written or verbal confirmation was not obtained, were not accepted. Flocks observed in the same general location on dates separated by only a short duration (i.e., generally one week or less) were assumed to be the same birds to avoid double-counting.

The California Department of Fish and Game (DFG) also contributed a significant number of sightings that were collected during two one-day censuses. In January 1998, staff from the DFG Bird and Mammal Conservation Program and a corps of skilled volunteers participated in a one-day Mountain Plover census. In January 1999, DFG requested that individuals who participated in the 1998 census revisit locations that had positive findings on the 1998 census. The results of the 1998 and 1999 surveys were compiled separately by DFG and will be used to support future research and conservation efforts. All reports submitted as part of the DFG census were accepted.

For counties that are included in the former winter range but for which no reports were obtained during the survey period, we searched published literature and contacted a number of regional and local experts in California for county records dating back to 1970. For two counties within the expected range for which no documented occurrences could be located, undocumented reports from experienced observers (including second-hand reports from sources deemed by the authors as reliable) were accepted as the most recent county record.

RESULTS

The following records are listed alphabetically by county and chronologically by first date of occurrence. The initials in parentheses for each record indicate the source of the written and/or published documentation. The "season" (i.e., 1997/1998 and 1998/1999) refers to the period of time that Mountain Plovers can be expected to be found on their wintering grounds (i.e., October through March).

REPORTS ACCEPTED

Alameda -- No reports were received during the study period. The most recent record accepted was of up to five birds straddling the Alameda/San Joaquin county line on Kelso Road just west of the Byron Highway from 8-17 Jan 1987 (RE, DY). This record also represents the last documented sighting for San Joaquin County.

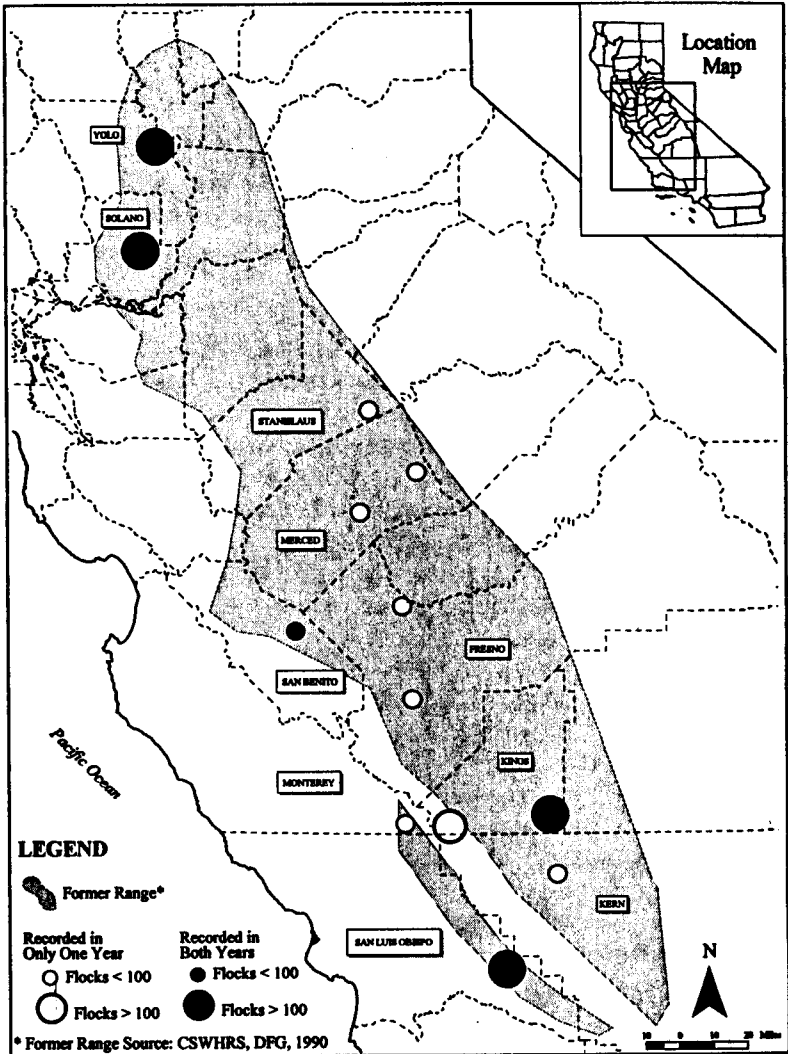


Figure 1. Approximate Locations of Mountain Plover Flocks Recorded During Study

Colusa – No reports were received during the study period. The most recent record accepted was of three at Colusa National Wildlife Refuge on 31 Mar 1977 (SL).

Contra Costa -- No reports were received during the study period. The most recent record accepted was of two at Clifton Court Forebay near Byron from 5-7 Feb 1989 (SG).

Fresno -- Two reports were accepted for the 1997/1998 season. Fifteen were west of Fresno along Interstate 5 near milepost 46 on 25 Oct 1997 (SG). Approximately 75 were west of Fresno near the intersection of Napa Avenue

**TABLE 1. STATUS OF THE MOUNTAIN PLOVER
WITHIN ITS WINTER RANGE IN NORTHERN
AND CENTRAL CALIFORNIA**

County	Most Recent Record ¹	Number of Flocks Reported During Study ²	Largest Flock Reported During Study	Current Status
Alameda	86/87	--	--	Exceedingly Rare
Colusa	76/77	--	--	Exceedingly Rare
Contra Costa	88/89	--	--	Exceedingly Rare
Fresno	98/99	3	75	Rare and local
Kern	98/99	1	25*	Rare and local
Kings	98/99	3	170*	Rare and local
Merced	98/99	2	20	Rare and local
Monterey	97/98	2	7*	Rare and local
Placer	97/98	--	--	Accidental
Sacramento	85/86	--	--	Exceedingly Rare
San Benito	98/99	2	50	Rare and local
San Joaquin	86/87	--	--	Exceedingly Rare
San Luis Obispo	98/99	9	150	Rare and local
Solano	97/98	6	140	Rare and local
Stanislaus	97/98	1	65	Rare and local
Tulare	93/94	--	--	Rare and local
Yolo	98/99	2	187*	Rare and local

STATUS:

Rare and local - A total of ten or fewer flocks reported during the 1997/1998 and 1998/1999 seasons; no flocks exceeding 300 individuals; only present in small- to moderate-sized flocks at specific locations.

Exceedingly Rare - No winter records for at least 10 years,

But may have been regular historically.

Accidental -- Only known to occur on migration; may once have wintered regularly.

1 Includes counties with documented sighting since 1970.

2 Flocks include two or more birds.

* Indicates an actual count (otherwise flock size is an estimate).

and Kamm Avenue on 23 Jan 1998 (KF). One report was accepted for the 1998/1999 season. Eight were south of Mendota near the intersection of Highway 33 and Panoche Road on 4 Jan 1999 (KV).

Kern -- No reports were received during the 1997/1998 season. Three reports were accepted for the 1998/1999 season. Twenty-five were west of Delano along Corcoran Road north of Highway 46 on 19 Dec 1998 (VH); four were observed on 20 Dec 1998 (JW); and six observed near the same location on 3 Jan 1999 (JSe).

Kings -- Three reports were accepted for the 1997/1998 season. Two reports, considered as one flock, were accepted from the same general location on Utica Road, southwest of Corcoran. Two were along Utica Road and 10th Avenue, approximately 10 miles east of Highway 5, on 1 Jan 1998 (JSt); six were near the same location on 8 Jan 1998 (JSe). On the DFG 1998 census, 170 were near the intersection of Highway 41 and York Avenue, southwest of Highway 33, in the Pyramid Hills on 24 Jan 1998 (Hunting and Fitton in prep.). One report was accepted for the 1998/1999 season. Approximately 10 were southwest of Corcoran along Utica Avenue roughly three miles east of Interstate 5 on 28 Dec 1998 (JSe).

Merced -- One report was accepted for the 1997/1998 season. Twenty were at the Merced National Wildlife Refuge on 2 Mar 1998 (JSe). One report was accepted for the 1998/1999 season. Eight were east of Merced near the intersection of Bear Creek Drive and Boner Road on 4 Jan 1999 (KV).

Monterey -- One report was accepted for the 1997/1998 season. On the DFG 1998 census, twelve were on Cholame Valley Road 6 to 7 miles north of State Route 46 on 24 Jan 98 (Hunting and Fitton in prep.). No reports were received during the 1998/1999 season.

Placer -- One report was accepted for the 1997/1998 season. A presumed "migrant" was west of Lincoln along Brewer Road from 25-26 Oct 1997 (MB). This is the only documented county record for Placer County (BW).

Sacramento -- No reports were received during the study period. The most recent record accepted was a second-hand report of one near the intersection of Bayou Road and Powerline Road on 17 Jan 1986 (TM).

San Benito -- Six reports, considered as one flock, were accepted from the Panoche Valley for the 1997/1998 season. Records accepted include: 50 on 22 Dec 1997 (DS, AD); 44 on 24 Jan 1998 (Hunting and Fitton in prep.); 27 on 31 Jan 1998 (DS, AD); 37 on 20 Jan 1998 (DS, AD); 24 on 27 Jan 1998 (BR); and 33 on 16 Feb 1998 (PG). Two reports, considered as one flock, were accepted from the Panoche Valley for the 1998/1999 season. Records accepted

include: 15 on 3 Jan 1999 (CK), and 15 on 14 Jan 1999 (NL).

San Joaquin -- None were reported during the study period. See the Alameda County account for the most recently accepted record for San Joaquin County.

San Luis Obispo -- Five reports were accepted from the Carrizo Plain and the Elkhorn Plain for the 1997/1998 season. Twenty-four were observed along Elkhorn Road on 3 Jan 1998 (RZ). Approximately 150 were along Soda Lake Road on the Carrizo Plain on 17 Jan 1998 (JB). Eleven were on the Wells Ranch Quadrangle DFG census on 22 Jan 1998 (Hunting and Fitton in prep.). Twenty-four were on the Elkhorn Hills Quadrangle on 22 Jan 1998 (Hunting and Fitton in prep.). One hundred and thirty-nine were four miles west of the intersection of Highway 58 and Seven Mile Road on 24 Jan 1998 (Hunting and Fitton in prep.). Four reports were accepted from the Carrizo Plain and the Elkhorn Plain for the 1998/1999 season. Twenty-nine were along Soda Lake Road near Soda Lake on 14 Jan 1998 (BB). Four were on the Elkhorn Plain on 14 Jan 1999 (SF). Two reports, considered as one flock, were accepted from the same general location on the Carrizo Plain. Twenty-five were at Calhoun Barren on the Carrizo Plain on 13 Jan 1999 (SF); 35 were near the same location on 17 Jan 1999 (SF).

Solano -- Six reports from areas south of Dixon and Davis were accepted for the 1997/1998 season. Two were near the intersection of Hastings Road and Highway 113 on 10 Jan 1998 (LE). Approximately 140 were near the intersection of Highway 113 and Flannery Road on 24 Jan 1998 (Hunting and Fitton in prep.). Four were along Tremont Road between Robben Road and Runge Road on 24 Jan 1998 (Hunting and Fitton in prep.). Approximately 25 were near the intersection of Swan Road and Sikes Road on 25 Jan 1998 (Hunting and Fitton in prep.). Fifty-four were near the intersection of Sikes Road and Maxwell Lane on 24 Jan 1998 (Hunting and Fitton in prep.). Seven were near the intersection of Robben Road and Miller Road on 24 Jan 1998 (Hunting and Fitton in prep.). No reports were received for the 1998/1999 season.

Stanislaus -- One report was accepted for the 1997/1998 season. Approximately 65 were at the inlet of Turlock Lake, east of Modesto, on 20 Dec 1997 (JG). No reports were received for the 1998/1999 season.

Tulare -- No reports were received for the survey period. The last documented observation occurred near the Pixley National Wildlife Refuge south of Allensworth. Knopf and Rupert (1995), during a large-scale study of Mountain Plover habitats and habitat use, regularly observed large flocks from late October 1992 to mid-March 1993. A flock at a staging area south of Allensworth peaked at 696 birds on 6 Mar 1993. Mountain Plovers were also reported at this location in October of 1993 (Knopf and Rupert 1995).

However, a survey of the Pixley National Wildlife Refuge in 1998 failed to yield any observation (Hunting and Fitton in prep.).

Yolo -- Five reports, considered as one flock, were accepted for the 1997/1998 season. All five reports were from the general vicinity of the intersection of Road 17 and Road 102, north of Woodland. Records accepted include: approximately 15 on 2 Nov 1997 (SH); approximately 15 on 5 Dec 1997 (MP, JH); approximately 100 on 7 Dec 1997 (RR); 187 on 24 Jan 1998 (Hunting and Fitton 1999); and approximately 13 on 28 Feb 1998 (RR). Three reports, considered as one flock, were accepted for the 1998/1999 season from the same general vicinity. Records accepted include: 20 on 24 Jan 1999 (BM); two on 26 Jan 1999 (DF); and ten on 11 Feb 1999 (BM).

REPORTS NOT ACCEPTED

Solano -- Four were reported to the Northern California "Birdbox" near the intersection of Hastings Road and Highway 113, south of Dixon, on 5 Jan 1998, and twelve were reported to the listserv, birding@mother.com, near this intersection on 7 Jan 1998. These reports are likely accurate because two were present at this same location on 10 Jan 1998; however, no substantiating documentation was received.

Yolo -- Three hundred were reported along Interstate 5, one mile south of Dunnigan on 20 Dec 1997. Thirteen were reported to the Sacramento Audubon Society "Birdbox" near Milepost 11 on Hwy 45 northwest of Knights Landing on 11 Nov 1998. Although these reports could be accurate, no substantiating documentation was received.

DISCUSSION

Since 1970 the Mountain Plover has been reported from at least 17 counties in the study area. Flocks of Mountain Plovers were reported from a total of ten counties during the study period (Table 1). In addition, one bird was reported near the eastern edge of the former range in Placer County. Flocks consisting of at least 100 individuals were reported in four counties: Kings, San Luis Obispo, Solano, and Yolo. No flocks exceeding two hundred individuals were reported within the study area. For comparison, as many as 10,000 Mountain Plovers were repeatedly counted in the San Joaquin Valley in the 1960s, and as recently as the early 1990s, flocks of up to 1,100 birds were seen near the Tulare/Kings County line (USFWS 1999, Knopf and Rupert 1995). San Luis Obispo was the only county that averaged more than three flocks per season. At least one flock was reported during both seasons of the study in Fresno, Kings, Merced, San Benito, San Luis Obispo, and Yolo counties.

No reports were accepted for the last 10 years, and Mountain Plovers may be extirpated as a regular wintering species from Alameda, Colusa, Contra

Costa, Sacramento, and San Joaquin counties. Although portions of Amador, Calaveras, Madera, Mariposa, Santa Clara, Sutter, Tuolumne, and Yuba counties are included in the historic range, no records were obtained for the period 1970 - 1999.

Although the results of this study should only be used as a general reference on the current status of the Mountain Plover in the Central Valley, the results support the conclusion that this species is now rare, and very locally distributed throughout this geographic area. Although limited historic data are available for comparison, the results also indicate that the Mountain Plover population in the Central Valley may be declining sharply. However, it is difficult to even estimate the number of Mountain Plovers wintering in the Central Valley because current monitoring methods are inadequate. Data gathered opportunistically, or by analyzing the results of Christmas Bird Counts or one-day censuses, are useful only when making gross quantitative predictions or when used to track major trends in the overall population. This is especially true when analyzing specific geographic areas that have large tracts of suitable habitat, but that are seldom visited by birders (e.g. the west side of the San Joaquin Valley). In fact, it is possible that some traditional wintering areas in California have yet to be discovered.

The lack of detailed information on the status of the Mountain Plover in the Central Valley can be partly attributed to the difficulty in locating them. Unlike in southern California, where known wintering areas are restricted to relatively small geographic areas, Mountain Plover occurrences in the Central Valley are temporally and spatially sporadic. The Mountain Plover may spend up to 75 percent of its time on plowed agricultural fields, which are very common throughout this portion of their range (Knopf 1996). Therefore, delineating suitable habitat does little to assist observers or researchers in determining where concentrations should be expected. The large amount of apparently suitable habitat also presents difficulties in completing a large-scale, systematic survey because of the enormous effort such a survey would require. The difficulty of visually locating this species, even when it is present, is also problematic. Mountain Plovers can be difficult to see because of their cryptic coloration and behavior that reduces the likelihood of detection. Mountain Plovers often face away from an observer and squat motionless in response to disturbance, which results in the drably marked bird virtually disappearing into the surrounding habitat and has fostered the bird's nickname of "Prairie Ghost" (Knopf 1996).

It is our hope that this study will encourage birders to document future sightings, which would eventually lead to a better understanding of this species' current winter range. Additional documentation could also foster future conservation efforts. Records published herein as well as records accepted in the 1999/2000 season will be input into a geographic information system (GIS) database that will be used to compile and map future documented occurrences. The GIS database will contain metadata sufficient to clearly address data precision and accuracy.

ACKNOWLEDGMENTS

We are grateful to Sam Fitton, Robert Leachman, and Debra Shearwater for their constructive comments on earlier drafts of this manuscript. EDAW GIS specialist Megan Moriarty produced the final map and EDAW word processor Joan McHale provided many useful editorial comments on the draft manuscript.

The following individuals kindly shared their unpublished records and/or knowledge of the status of Mountain Plover for specific regions of California: Bob Barnes (BB), Jean Brandt (JB), Mike Bumgardner (MB), Al DeMartini (AD), Leo Edson (LE), Richard Erickson (RE), David Feliz (DF), Sam Fitton (SF), Karen Fullen (KF), Jim Gain (JG), Steve Glover (SG), Philip Gordon (PG), Joan Humprey (JH), Clay Kempf (CK), Steve Laymon (SL), Nick Lethaby (NL), Tim Manolis (TM), Brennan Mulrooney (BM), Michael Perrone (MP), Richard Redmond (RR), Bob Reiling (BR), Jeff Seay (JSe), Debra Shearwater (DS), John Sterling (JSt), Kent Van Vuren (KV), Brian Williams (BW), John Wilson (JW), David Yee (DY).

LITERATURE CITED

Hunting, K. W., and S. Fitton. (in prep). Winter distribution and habitat use by the Mountain Plover (*Charadrius montanus*) in California.

Knopf, F. L. 1996. Mountain Plover (*Charadrius montanus*). In *The Birds of North America*, No. 211 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, D.C.

Knopf, F. L. and J. R. Rupert. 1995. Habits and habitats of Mountain Plovers in California. *Condor* 97: 743-751.

U.S. Fish & Wildlife Service. February 16, 1999. Proposed Threatened Status for the Mountain Plover. *Federal Register*, Volume 64, Number 30, Page 7587-7601.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White, eds. 1990. *California's Wildlife: Volume II: Birds*. California Department of Fish and Game, a State of California Resources Agency, Sacramento, CA.

