

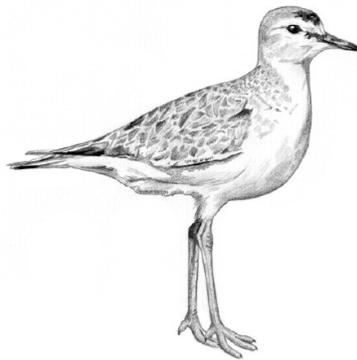
PROJECT I :
SURVEY FOR MOUNTAIN PLOVERS (*Charadrius montanus*)
ON F.E. WARREN AIR FORCE BASE, WYOMING:
2002 PROJECT REPORT

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INTRODUCTION

The mountain plover (*Charadrius montanus*) is endemic to western North America and experienced serious population and range declines throughout the 20th century (Knopf 1996, Beauvais 2002), culminating in the proposed listing of the taxon as Threatened under the U.S. Endangered Species Act on 16 February 1999 (U.S. Fish and Wildlife Service 1999). On 13 June 2002 the USDI Fish and Wildlife Service made issuance of the final rule on the listing of the mountain plover a priority for 2003 (U.S. Fish and Wildlife Service 2002), further raising the degree of management concern associated with this species.

The northern 1/3 of F.E. Warren Air Force Base (FEWAFB), Wyoming, supports a large expanse of grassland with the potential to support mountain plovers. Mountain plovers prefer flat sites with relatively sparse and short vegetation (Knopf 1996, Beauvais 2002), and although suitably flat sites occur on FEWAFB, grass cover tends to be thicker and taller than on known mountain plover breeding areas (Beauvais 2002). Range treatments that reduce vegetation, such as burning or intense livestock grazing, would likely increase habitat quality for mountain plovers on FEWAFB.

In response to the declining ecological status, and increasing management priority, of mountain plovers, the Wyoming Natural Diversity Database (University of Wyoming) and FEWAFB established a field research project designed to accomplish 2 objectives: (1) determine via field survey if mountain plovers currently occupy the Base and, if present, determine their abundance and distribution; and (2) identify the areas most suitable for occupation by breeding mountain plovers on the Base (Beauvais 2002). Data from this study will serve as a baseline to which data from future surveys, possibly following deliberate vegetation treatments, will be compared.

Background, methodological details, and survey results from summer 2001 are discussed in Beauvais (2002). Briefly, I identified potentially suitable habitat using a geographic information system and published information on mountain plover habitat use, then designed a set of survey transects that sampled the majority of the best habitat on FEWAFB. Six field surveys were conducted on these transects during summer 2001, with no mountain plovers observed.

I repeated surveys on the same transect system, using the same methods, during summer 2002. This report describes the results of these latest surveys.

A companion study titled “Monitoring upland vegetation on F.E. Warren Air Force Base, Wyoming, with special attention to mountain plovers (*Charadrius montanus*) and the effects of vegetation disturbance” provides more information on the relationship between vegetation condition, vegetation management, and potential mountain plover habitat on FEWAFB.

METHODS

Two observers performed field surveys for mountain plovers on the transect system shown in Figure 1, using the methods outlined in Beauvais (2002).

RESULTS

Four field surveys were conducted, with no mountain plovers observed (Table 1). Our observations this season supported our conclusions in Beauvais (2002): the northern portion of FEWAFB has potential to support mountain plovers, but summer vegetation under current conditions is probably too high and too dense. No other species of potential management concern, aside from those reported in Beauvais (2002), were observed during these surveys.

DISCUSSION

Alongside similar results from surveys performed in 2001 (Beauvais 2002), the absence of mountain plovers recorded during these surveys suggests strongly that mountain plovers do not occupy FEWAFB under current conditions. Although several areas on the northern 1/3 of FEWAFB have the potential to support breeding mountain plovers, the grass/ forb cover on this area is currently too dense and too high. Reducing vegetation height and density in areas mapped as primary and secondary habitat (Figure 1) is probably the most effective way to promote occupation by this species.

Interestingly, a fire burned much of this area between field seasons 2001 and 2002. Although vegetation was noticeably reduced on burned areas, it still appeared to be substantially taller and thicker than on known mountain plover breeding sites. Prescribed burning is used to improve mountain plover habitat in other parts of this region (e.g., USDA Forest Service Pawnee National Grassland), but the timing of the burn is critical to its effect on mountain plover habitat (F. Knopf, personal communication). Whereas vegetation can recover, and indeed flourish, in

the spring following a summer or fall burn, vegetation burned in the spring remains low and sparse throughout the mountain plover breeding season.

Intense grazing by livestock is another technique to potentially increase suitability of mountain plover habitat by reducing vegetation cover. I observed a band of domestic sheep grazing the northern 1/3 of FEWAFB in the early summer of each of 2001 and 2002. It may be possible to concentrate sheep grazing in areas of suitable mountain plover habitat prior to the breeding season (i.e., March and early April) to create expanses of minimal vegetation cover that would attract and hold mountain plovers moving through the area.

There is a rather significant construction project underway on Base Line Ridge, directly on one of the survey routes. This construction will substantially reduce the potential for this area to support mountain plovers; future surveyors may want to avoid this area in favor of other, less disturbed sites. Similarly, it appears that a major fencing project may occur on the northern 1/3 of FEWAFB, possibly with the goal of fencing the entire boundary. This will likely reduce the potential of sites near the fence to support mountain plovers and, via provision of raptor perching sites, may reduce habitat quality in general on this part of FEWAFB.

RECOMMENDATIONS

Given that 2 consecutive seasons of field survey have produced no mountain plover observations, habitat conditions are sub-optimal (specifically, vegetation is relatively thick and tall), and construction projects threaten to reduce habitat suitability even further, there is only a small probability of the taxon occupying FEWAFB in the near future unless significant vegetation-reducing treatments are performed. In the absence of such treatments, I recommend 2 surveys during the breeding season (mid-May) in each following year as “precautionary” measures. The surveys should be separated by 14 days, and should employ broadcasting of mountain plover breeding calls to ensure complete coverage of this portion of FEWAFB. If mountain plovers are documented during these precautionary surveys, I recommend follow-up field work in that season to document abundance, distribution, and reproductive output.

If vegetation-reducing treatments are performed on the northern 1/3 of FEWAFB, and especially if the treatments are specifically designed to increase habitat suitability for mountain plovers, I recommend a more intensive survey program: at least 5 surveys during the breeding season following the treatment, again separated by 14 days each, utilizing breeding call

broadcasts, and followed by more intensive work to document abundance, distribution, and reproductive output of any mountain plovers observed.

ACKNOWLEDGEMENTS

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TABLES

Table 1. Dates of surveys for mountain plovers performed on F.E. Warren Air Force Base, Wyoming, 2002.

22 May 2002
28 May 2002
5 June 2002
13 June 2002

FIGURES

Figure 1. Potential mountain plover habitat on the northern 1/3 of F.E. Warren Air Force Base, Wyoming. Purple line shows the boundary of F.E. Warren Air Force Base. Light gray polygons are secondary habitat, as defined in Beauvais (2002). Darker gray polygons are primary habitat, as defined in Beauvais (2002). The 4 black polygons are suggested by field observations to be especially suitable for mountain plover occupation. Blue line shows vehicle portion of the mountain plover survey route; green line shows foot portions of the mountain plover survey route.

