

The Condor
Volume 110, Issue 1
February 2008 C.E.
Abstracts

FEATURE ARTICLES

INFLUENCE OF DROUGHT ON ANNUAL SURVIVAL OF THE MOUNTAIN PLOVER IN MONTANA

STEPHEN J. DINSMORE¹

Department of Natural Resource Ecology and Management, 339 Science II, Iowa State University, Ames, IA 50011

Manuscript received 26 April 2007; accepted 25 October 2007.

¹ E-mail: cootjr@iastate.edu

Abstract. I used a robust design to model the influence of age, sex, climate conditions, and chick body mass on the annual survival of the Mountain Plover (*Charadrius montanus*) in north-central Montana from 1995–2006. I found evidence that chick age predicted body mass (i.e., $\log_{10}(\text{mass}) = 0.03 * \text{age} + 1.02$) and subsequently modeled juvenile survival as a function of body mass. Juvenile survival was similar for both sexes and was positively influenced by body mass at capture. The predicted annual survival for a juvenile plover from date of hatching (10 g) was 0.06 (95% CI was 0.02, 0.15) and increased with body mass. Annual survival was similar for adults of both sexes and ranged from 0.74 to 0.96 yearly. There was a hint that male survival was higher than that of females, although this effect was weak. Adult survival was affected by a Palmer Modified Drought Index that measured local climate conditions and indicated that annual survival was highest during drought periods. Implications of this study include understanding the processes influencing annual survival in a declining species, providing a basis for long-term population projections, relating demographic processes to climate change, and increasing our knowledge of survival patterns among the Charadriidae.

Key words: *Charadrius montanus, drought, Montana, Mountain Plover, survival.*