

FEATURE ARTICLES

SEX, AGE, AND BODY SIZE DISTRIBUTIONS OF WESTERN SANDPIPERS DURING THE NONBREEDING SEASON WITH RESPECT TO LOCAL HABITAT

GUILLERMO FERNÁNDEZ¹ AND DAVID B. LANK

Centre for Wildlife Ecology, Department of Biological Sciences, Simon Fraser University, 8888 University Drive, Burnaby, BC V5A 1S6, Canada

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¹Present address: Manomet Center for Conservation Sciences, P.O. Box 1770, Manomet, MA 02345. E-mail: gfernandez@manomet.org

Abstract. We documented the local density and sex, age-class, and body size distributions of Western Sandpipers (*Calidris mauri*) among habitats at Bahía Santa María, northwestern Mexico, during the nonbreeding season. Three habitats were recognized: brackish flats, mangroves, and cattail marshes, which we ranked as richest to poorest in food resources and safest to most dangerous in predation danger. Western Sandpiper population structure differed among habitats. Bird densities were highest in brackish flats, the richest and safest habitat, and males and adults of both sexes were overrepresented. In cattail marshes, which appeared to be the poorest and most dangerous habitat, bird densities were lower, and the sex ratio and age ratios within each sex were more even. In mangroves, bird densities were similar to those in cattail marshes, but sex and age ratios were similar to those in brackish flats. Exposed culmen, an index of structural size, was not related to habitat use in either sex. Body mass of immature males was more variable than that of adults among habitats and immature males gained mass throughout the winter. Birds in brackish flats and mangroves were initially heavier, but tended to lose mass, whereas birds in cattail marshes were initially lighter, but tended to gain mass. Mass distributions thus converged in late winter. While the social and ecological causes and significance of differential sex and age-class distributions among habitats remain largely unquantified, evidence from this and previous studies suggests that nonbreeding population structure is a common phenomenon with important implications for migratory shorebirds.

Key words: *Calidris mauri*, *density-dependent competition*, *habitat quality*, *local distribution*, *nonbreeding season*, *predation danger*, *Western Sandpiper*.