

Response of a bird assemblage in semiarid Chile to the 1997-1998 El Niño

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Abstract

The semiarid region of Chile is influenced by El Niño Southern Oscillation. Its absence causes droughts and its presence causes wet years, which in turn result in variations in resource levels for avian assemblages. We show that bird species richness and density follow some of these pulses closely. Sixty-one bird species, 32 of which were Passeriformes, were sighted during five years in Las Chinchillas National Reserve (300 km N of Santiago). Overall, 30 species (49%) were residents and 31 (51%) were migratory. The most speciose trophic groups were insectivores (34%), carnivores (28%), and granivores (25%). Bird species richness and density declined from 43 species and 45-50 individuals/ha in spring 1993, to 29 species and 15-20 individuals/ha in autumn 1996. Increases were observed with the onset of El Niño, reaching totals of 42 species (a 45% increase from 29) and densities of 55-60 birds/ha in summer 1997. Similar trends were observed in one of two major food resources measured: small mammals. Positive correlations were found between raptor species richness and density and small mammal density, but not between insectivorous bird species richness or density and terrestrial arthropod abundance. Because the climate was very dry during most of the time of our study, we may have witnessed the lowest boundary for species richness and bird density. Whether the 1997-1998 El Niño brought the maximum bird species richness and density for the site is yet to be seen.