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Effects of Human Activity on Urban Birds

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INTRODUCTION

Birds are an ideal taxonomic group to understand the effects of urbanization on species using comparitive approaches as more than 2,000 species inhabit urban areas (Lepczyk et al. 2017).

Urban areas act as a focal point for the introduction of non-native species and the extinction of native species. Thus, urban environments offer a unique opportunity to investigate the ecological consequences of land-use change and human mediated biotic interchange (Lepczyk et al. 2017).

We tested how human activity has impacted urban avian diversity at Arcata Marsh & Wildlife Sanctuary.

METHODS

- 50-m fixed radius point count to record bird abundance and species richness uisng 10x binoculars
- Used a GPS tracker to navigate three 200-m transect lines at all nine sites
- Point counts were conducted one hour after sunrise and one hour before sunset for six weeks
- Used a poisson regression model to measure bird abundnace and species richness relative to human activity

Study Sites: Brackish Pond, Oxidation Pond and Log Pond

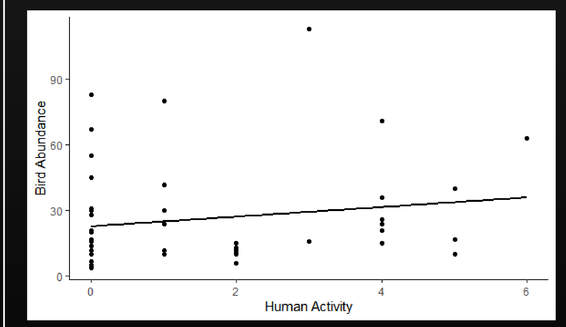

Fig. 1 Weak positive correlation between bird abundance and human activity at the Arcata Marsh & Wildlife Sanctuary from mid-February to late March 2022.

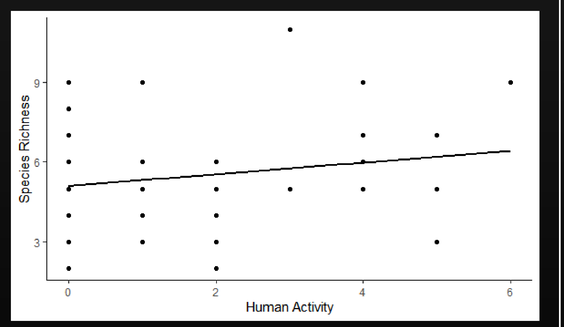

Fig 2. Weak positive correlation between species richness and human activity at the Arcata Marsh & Wildlife Sanctuary from mid-February to late March 2022.

RESULTS

Based on our poisson regression, there was a weak positive correlation between bird abundance and human activity ($P < 0.0001$, Fig. 1).

There was a weak positive correlation between species richness and human activity, as well ($P < 0.0001$, Fig. 2)

DISCUSSION

In contrast to recent research, the most recurrent pattern described for urban aviafaunal distribution is a negative relationship between species richness and urbanization (Silva et al. 2015).

Instead, species richness increased with the level of urbanization. We can conclude our response to be attributed to a high number of urban exlpoiter species in the area (Silva et al. 2015)

The global pandemic may have contributed to the shift of avian species richness and abundance. For instance, with stay-at-home orders, transport activity has dramatically reduced the impacts of anthropogenic disturbances on ecosystem. Thus, modifying the behavior and distribution of some wildlife species (Soga et al. 2021)

LITERATURE CITED

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