

## ABSTRACT

# The Impact of Human Disturbance on Resident and Migrant Birds Occupying the Tropical Dry Forest Life Zone of Jamaica's South Coast

Leo Ricardo Douglas

Twelve percent of the world's birds are now threatened with extinction. As is the case for the overall loss in global biodiversity, habitat loss and degradation are the major reasons. Although threatened birds occur in many different habitats, 75% live in forest primarily in the tropics, and half of these are dependent on pristine habitat.

This study focused on the effects of habitat loss and degradation on bird communities in the dry forest life zone of southern Jamaica. Environmental variables related to vegetational structure and composition were collected using the James and Shugart Circle method in four of the five major extant habitat types within the life zone. Point counts were conducted during one breeding season and one winter season centred on the vegetational sampling locations. Canonical correspondence analysis was the main statistical technique used to analyse major trends in species distribution.

Tree density, species richness and composition were the most important variables explaining the bird distribution. The results suggest a strong correlation between habitat use, guild membership and species range (i.e. whether a species is an endemic species, sub-species, breeding non-endemic or Neotropical migrant). In general the endemic species and sub-species were fruit/seed eaters, nectivores or insectivores feeding above ground that experienced dramatic population declines with habitat degradation. Non-endemic species were primarily seed or arthropod ground feeders that were common in degraded habitats. Neotropical migrants appeared to be affected differently from the breeding birds in that their distribution appeared to be more closely linked to food distribution than to habitat structure.

The study underscores urgent need to conserve natural forest for the island's endemic taxa and a few migratory species. The importance of a greater understanding of the demography of species occupying degraded habitats is emphasised along with the potential conservation significance of human created habitats such as sub-urban residential yards.

**Keywords:** Biodiversity, avifauna, habitat degradation, conservation, guild, James and Shugart circle, habitat suitability, canonical correspondence analysis.