

ABSTRACT

Bird Communities In The Upper Rio Grande Valley:

Effects of Forest Loss and Degradation

In

A Buffer Zone Of The Blue and John Crow Mountains

National Park

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The Blue and John Crow Mountains National Park (BJCMNP) has as one of its major challenges, the conservation of Jamaica's avifauna. One of the greatest threats to Jamaica's avifauna, within the National Park and its surrounding buffer zone, is forest loss and degradation. This study focussed on the effects of forest loss and degradation on bird communities in the Upper Rio Grande Valley buffer zone.

Thirteen environmental variables, namely: total tree density, density of trees with dbh 3-5 cm, density of trees with dbh 5-10 cm, density of trees with dbh 10-20 cm, density of trees with dbh > 20 cm, mean basal area, total basal area, herb cover, shrub cover, canopy 1 cover, canopy 2 cover, maximum canopy height and

altitude were measured for each of the 21 sampling sites. Fixed radius point counts were conducted in each sampling site during two breeding seasons and two winter seasons. Canonical correspondence analysis (CCA) was the statistical technique used to distinguish which sites differed from each other with respect to bird composition and the measured environmental variables. A one-way analysis of variance test determined the habitat distribution of endemic and non-endemic species.

Species richness was highest in forest and woodland for endemic species and Neotropical migrant species but was similar in all habitats for non-endemic residents. Most species had relatively low abundances in agricultural and pine sites. The CCA results confirmed that a decrease in tree density and tree cover posed the greatest threat to specialist forest birds. There seemed to be two groups of forest birds, each group having different habitat needs. Pine plantations did not support either group of forest birds but had few numbers of widely distributed resident species and Neotropical migrant warblers.

This study recommends that the managers of the Park need to develop appropriate landuse strategies that will minimise conflicts between commercial interests and the goals of the Park. Further forest destruction and degradation may lead to the loss of forest-sensitive species and Neotropical migrant warblers from the upper Rio Grande Valley. Management options for the BJCMNP in dealing with this issue are the restriction of expanding agriculture and silviculture within the buffer

zone, the clear demarcation of Park boundaries to landusers and the encouragement of 'environmental friendly farming strategies.

Keywords: Blue and John Crow Mountains National Park, avifauna, forest loss and degradation, buffer zone, landuse strategies