

Birds In Puerto Rico

Introduction

Development and Human Disturbance pose one of the largest threats to biodiversity in the modern era. Birds of all kinds face threats of losing valuable land that they need to eat, rest, and mate. Human Disturbance also puts birds at risk. Heavily trafficked areas disturb critical routines that birds rely on. Finding places to protect and preserve is critical for maintaining biodiversity, so this project aims to evaluate how critical areas are to protect. Tourism, growing populations, and development of roads and cities all contribute as risk factors to bird diversity. The goal of this project is to find the areas pose the highest risk to bird diversity as a result of human disturbance and development.



Conclusion

Many areas in Puerto Rico are so heavily populated that there was effectively no bird species richness. Other areas were low in species richness but also posed a very low risk. In order to find areas worth protecting we have to find areas with high species richness that is also under threat of development. Areas on the final risk assessment map that are light yellow, or orange had both a high risk of development but also risk species richness, making these areas optimal for protection. Some examples include Galateo Alto, Isabela Puerto Rico, Hato Viejo, Arecibo Puerto Rico, and La Luisa, Manatí Puerto Rico.

Cartography: Campbell Simmons

Class: GIS 101: Introduction to Geographic Information Systems

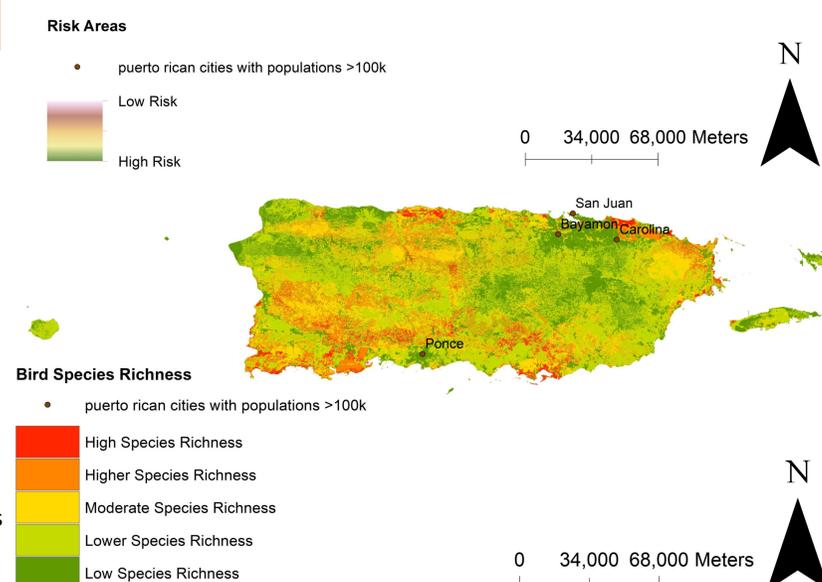
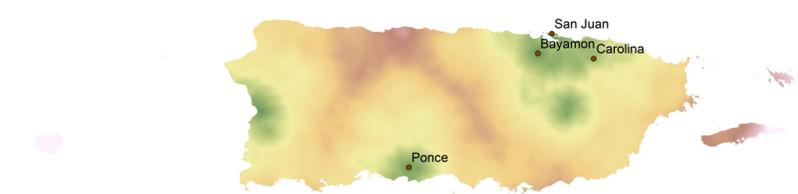
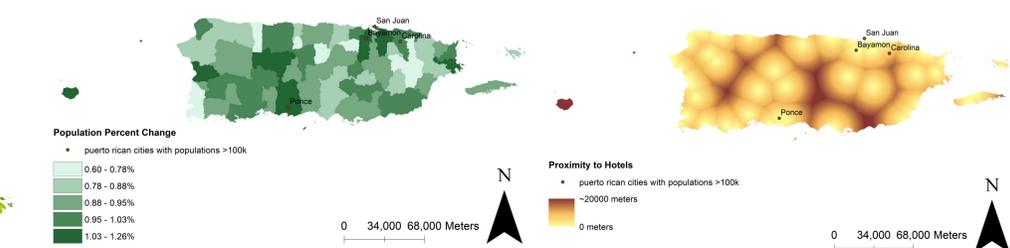
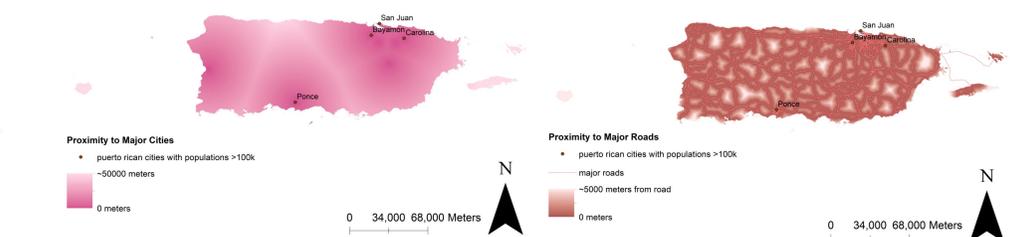
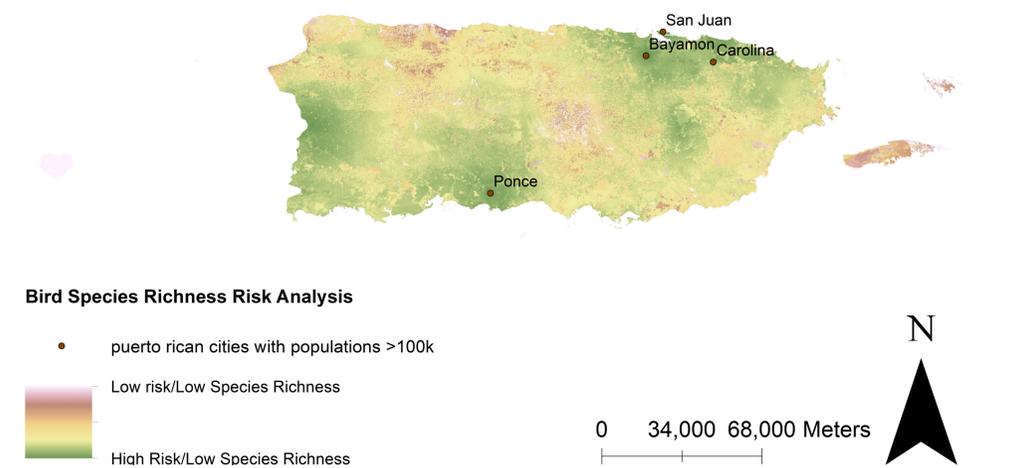
Projection: WGS 1984



Methodology

Several factors were taken into account to measure human disturbance and development. Because tourism is one of Puerto Rico's larger industries and a large contributor to human disturbance in wildlife areas, proximity to hotels was one of the features used to measure human disturbance. Proximity to roads was also taken into account, and proximity to cities, as these would both make areas more accessible to people. These were all factored into the final risk assessment map. To measure development population percent change from 1990-2010 was added in as well. Bird species richness measured in 2000 was used to normalize the risk assessment, so that areas with no species richness but low or high risk were made relevant to the analysis.

Results



Sources

Puerto Rico Gap Analysis project (PRGAP). 2000

Puerto Rico Planning Board; Puerto Rico Tourism Company. 2017

Center for Spatial Sciences at the University of California, Davis. 2018

ESRI Data Maps. 2000—2002