



# First data from bird monitoring at Karen Mogensen Reserve, northwestern Costa Rica

M. DAL ZOTTO<sup>1,2\*</sup>, G. ROMEO<sup>1,2</sup>, M. CARNEVALI<sup>1</sup>, M. BISANTI<sup>1</sup>, D. SONETTI<sup>1</sup>, L. MENA<sup>3</sup>, A. PEDERZOLI<sup>1</sup>

<sup>1</sup>Department of Life Sciences, University of Modena and Reggio Emilia, Modena, Italy  
<sup>2</sup>Associazione Foreste per Sempre, Modena, Italy  
<sup>3</sup>Asociación Ecológica Paquera, Lepanto y Cóbano, Jicaral, Puntarenas, Costa Rica  
 \*dalzotto.matteo@yahoo.com

## INTRODUCTION

Due to its high sensitiveness, tropical biodiversity is a privileged target for the study of the effects of climate change; furthermore, birds (Aves) are considered excellent bioindicators, as climatic alterations strongly affect their life-cycle. The project CLIMBIO (Climate & Biodiversity), funded by the Fondazione Cassa di Risparmio di Modena, is aimed at the study of tropical ornithic fauna, together with the registration of weather parameters, in order to analyze the potential short and long term effects of climate change on birds. Within this project, we had the opportunity to undertake a periodic bird monitoring at Karen Mogensen Reserve, a protected area located in the Nicoya Peninsula, NW Costa Rica (Central America).



## STUDY AREA

The Nicoya Peninsula is among the least known regions of the country in terms of ornithic fauna. The surveyed Reserve, an area of approximately 1,000 square hectares located between 100 and 500 m a.s.l., exhibits a complex of two main habitats: the widespread tropical dry forest and the moist forest surrounding some rivers and streams. These features make the area very suitable to host well diversified animal communities.



## MATERIALS & METHODS

Fixed points and transects crossing the different habitat typologies and altitudes were identified and geolocalized with a GPS. Qualitative and quantitative data were collected based on direct observations and/or identification of songs.



Tropical moist forest



Tropical dry forest



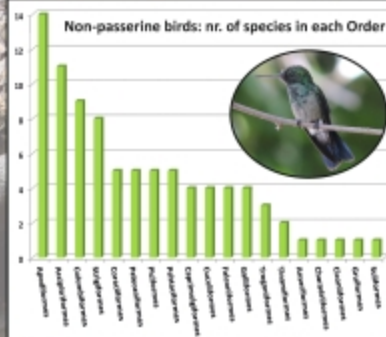
Great Vail Waterfall



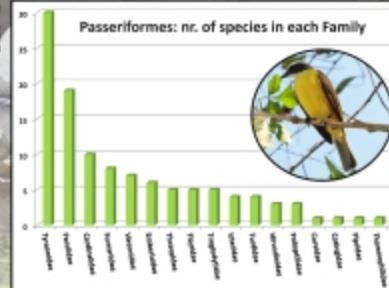
Great Curassow (Crax rubra)  
 We recorded 3 IUCN globally vulnerable or threatened species, namely: Crax rubra, Procnias tricarunculatus, Passerina ciris.

## RESULTS

Here we provide results from a recent survey along with previous data collected over a 20 years period. The current checklist is made up of over 200 species, in 148 genera, 44 families, and 20 orders, stressing the presence of a high species richness compared to similar areas in Costa Rica.



We revealed the presence of *Ortalis vetula* and *Cathartes aurantirostris*, two species that are characterized by isolated populations, restricted to the hills of the Nicoya Peninsula, and whose taxonomy needs further investigation.



We reported for the first time 6 taxa from the Nicoya Peninsula, among which the icterid *Molothrus bonariensis*, a potential invasive species never observed before on the Pacific slope of Costa Rica.

## CONCLUSIONS

The information provided suggests that the Reserve represents a very important area for bird conservation within the country, and is confirmed as a suitable site for the continuation of the study on the influence of climate change on tropical biodiversity.



Orange-billed Nightingale-Thrush (Cothornix oswaltii)



Shiny Cowbird (Molothrus bonariensis)