Use Of different Altitudinal Zones By BINP Avifauna (S.W.Uganda): implications for their Conservation

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Introduction

- Avifauna zonation studies done in other high altitude tropical forests, few in BINP.
- Early work-Kalina & Butynski,(1996)-1000ft(c.330m).
- Extension of some species ranges (Shaw & Shrewy,2001)-Grauer`s warbler.
- No quantitative assessment of abundance patterns along altitudinal –for prediction related to climate change.

Introduction

- Altitude , a surrogate for turnover in temperature and impacts of increasing temperature will be most noticeable along this gradient (200m shift=1^0c,Shoo etal,2005).
- Climate change impacts - shifts in altitudinal distribution of species (Williams etal,2007).
- BINP hot spot of biodiversity/endemism owing to compression of climatic zones over the elevation gradient(23 ARES,6IUCN,Plumptre etal,2003).

Introduction

- ARES–vulnerable due to its biogeography history/altitudinal gradient/spp adaptation to particular niche.
- Much work-predicting and monitoring the vulnerability of these species to climate warming.
- But biotic responses to climate change -rely on a long history of monitoring.

Introduction

- where long term monitoring data is absent like for BINP, an alternative-predict the future responses of species based on their current distribution or climate envelope/altitudinal range.
- Hence the need for baseline of current distribution/abundance patterns and altitudinal range upon which monitoring may rely.

Purpose

- To establish baseline information on bird species altitudinal range and patterns of abundance to promote their conservation

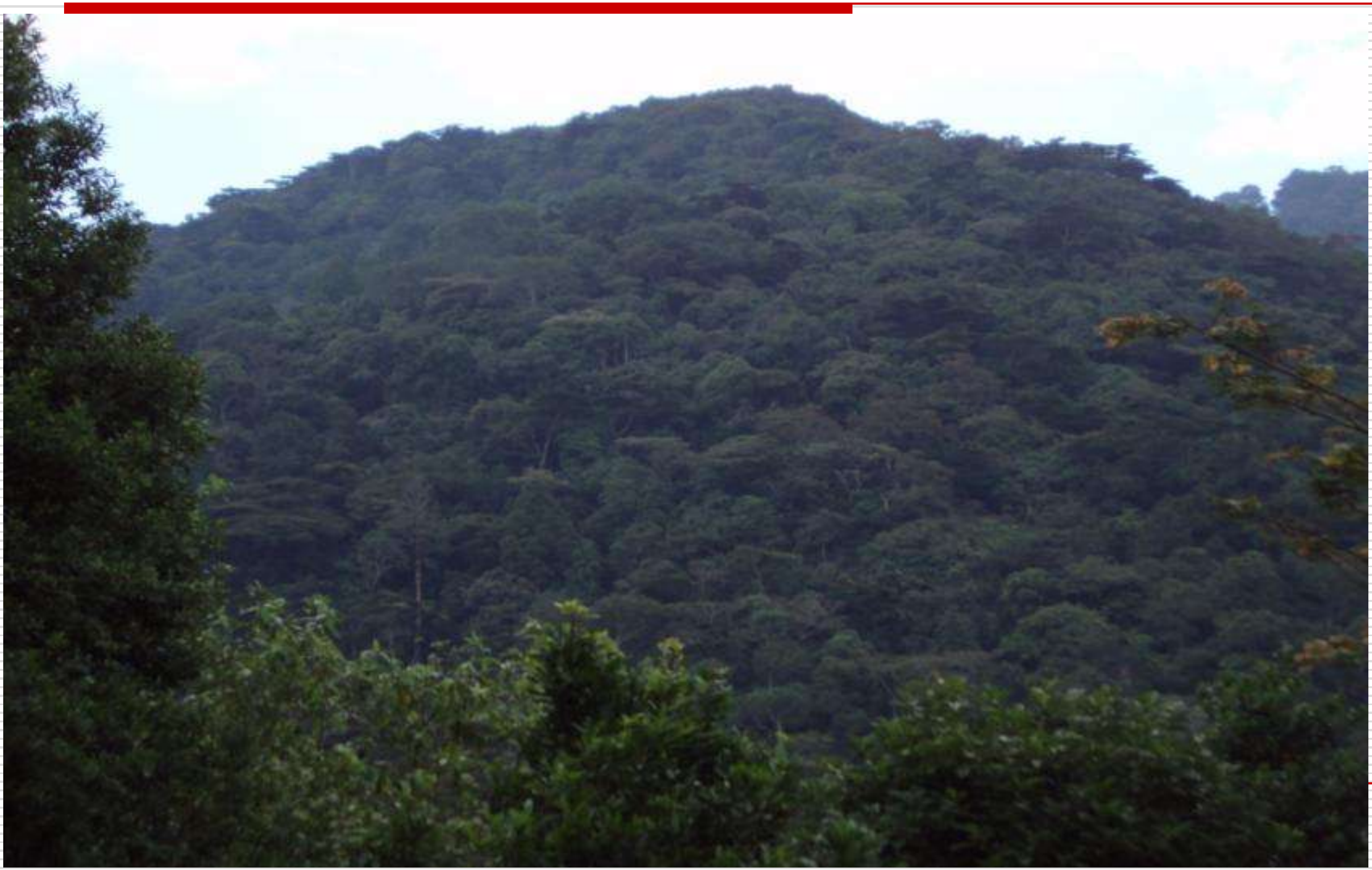
Objectives

1. To assess the bird species diversity along altitudinal gradient.
2. To establish relative abundance and distribution of each bird species along altitudinal gradient.
3. To determine the density of some of the most common bird species along the altitudinal gradient.
4. To determine general habitat features associated with altitudinal distribution of target species.

Methods

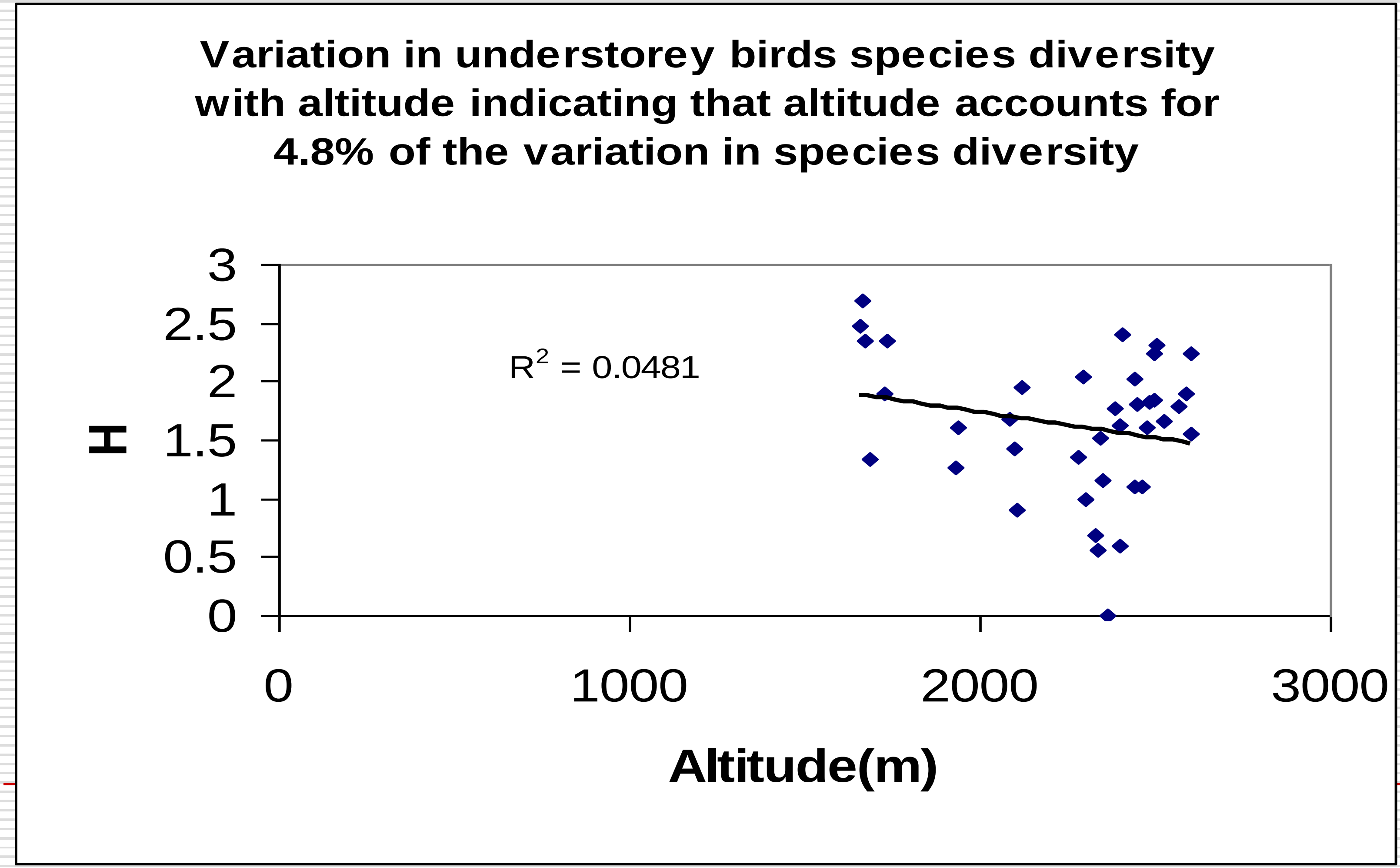
- Study area-(Rwamunyonyi,Biino,Katonve ,Nkuringo/Rurambe,Mushara & Rwashojo hills)-covering much of the altitudinal ranges.Priori selected using contours maps.
- **Mist-netting**, and **timed point count(10 mins).**
- Variables-***altitude,slope(steep/moderate/shallow), slope position,veg.canopy,distance to stream,distance to track/path, understorey veg. type (layers).***

Transect –Valley bottom to ridgetop

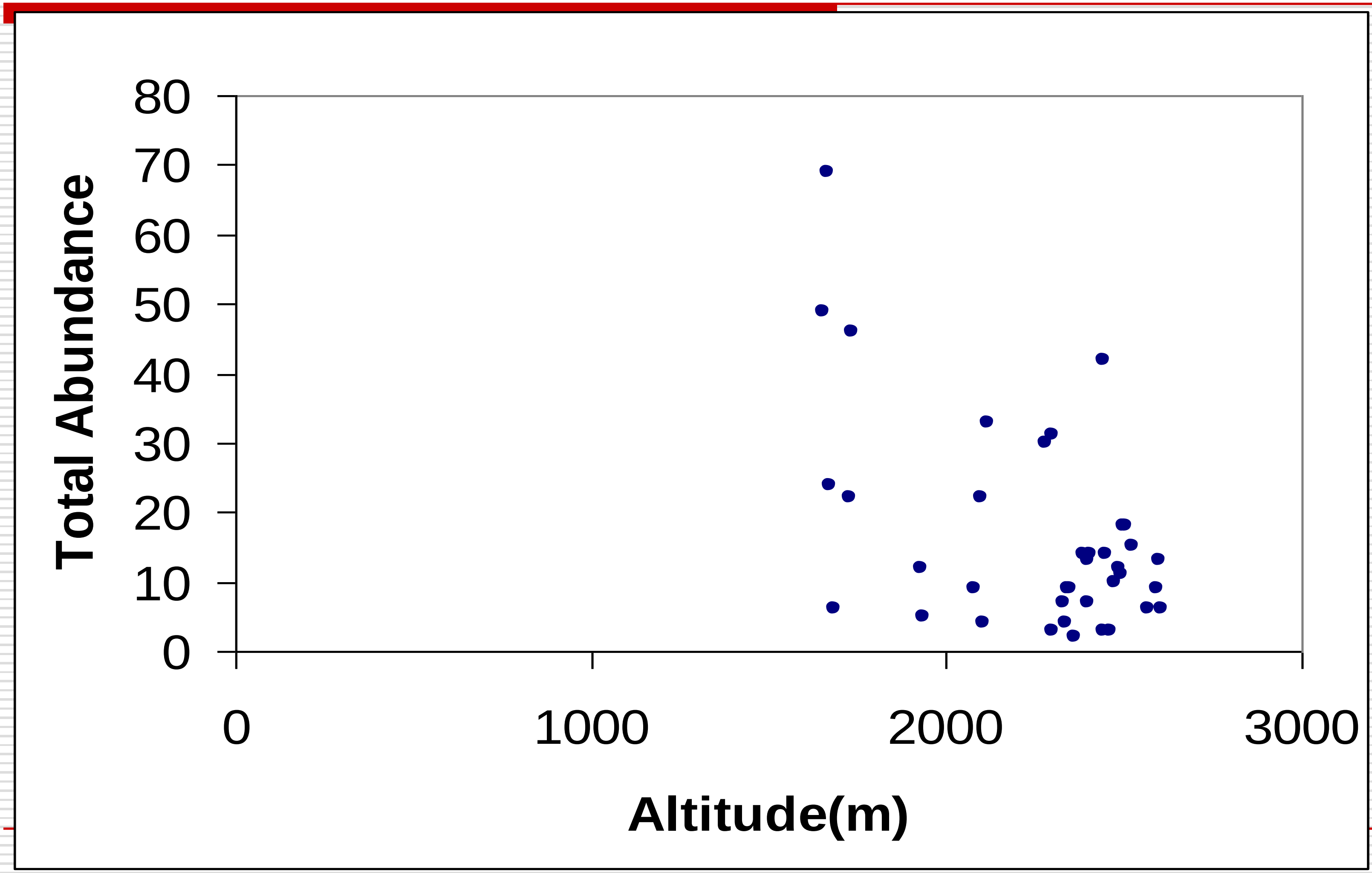


Preliminary Results

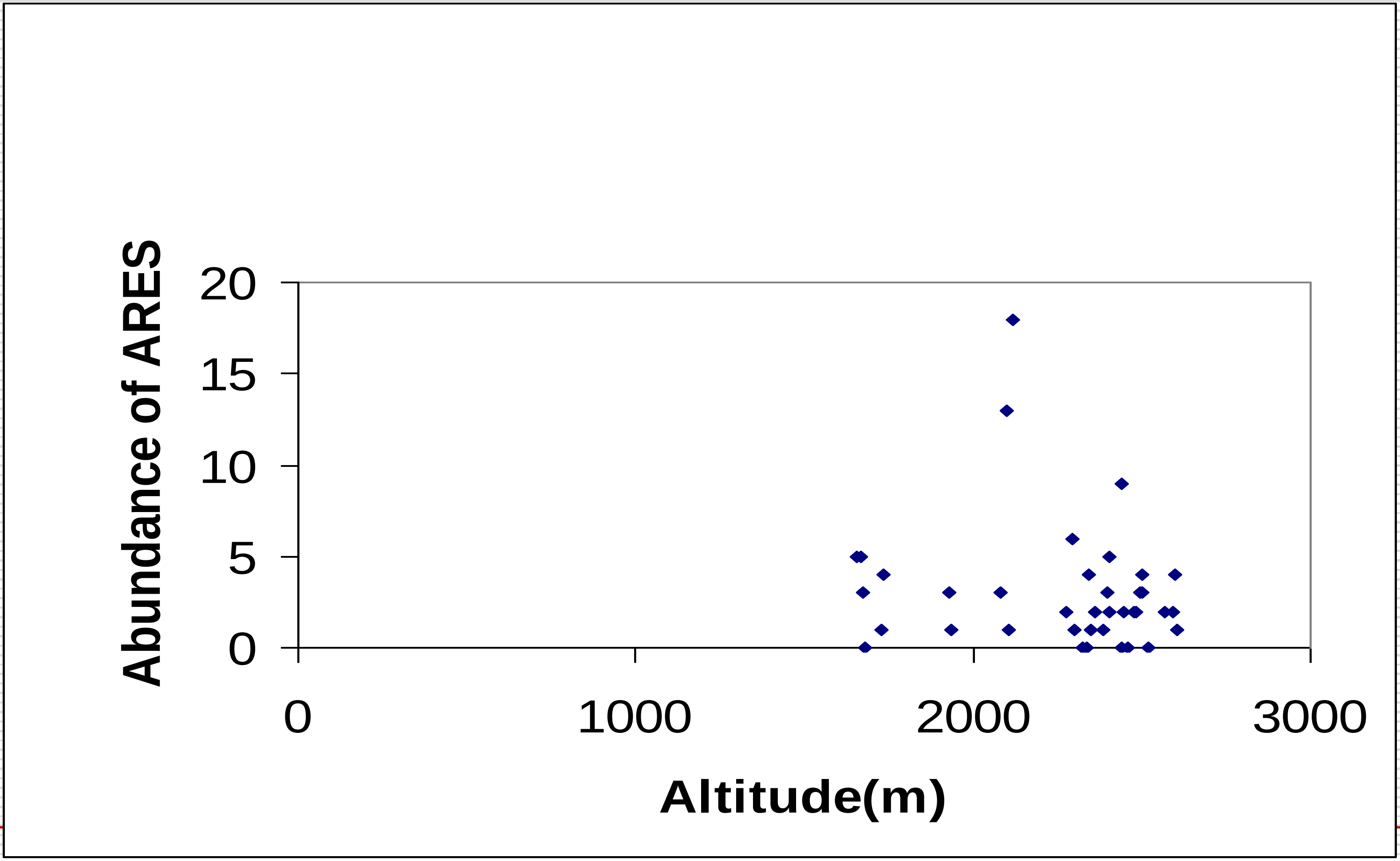
Diversity of understorey bird species along altitudinal



Abundance-understorey birds along altitudinal gradient



Abundance of ARES along altitudinal gradient



Abundance of understorey birds

- Peak abundance occurs at low altitude.
- Mid and high altitude contains most of the ARES.
- Total no of birds=626,118ARES(18.8%).Total spp=60,ARES,12(20%),FF-31(51.7%),F-26(43.3%),f-3(5%).

Output of my study

- Baseline –to monitor/detect range shifts across altitudinal gradient/mitigate impacts to biodiversity, population size change, estimate/predict extinction risk.

- Using birds as indicator species for monitoring impacts of climate warming.

Other possible research areas

- Altitudinal distribution of other indicator species –butterflies.
- Research into a wide range of climate change scenarios on biodiversity.