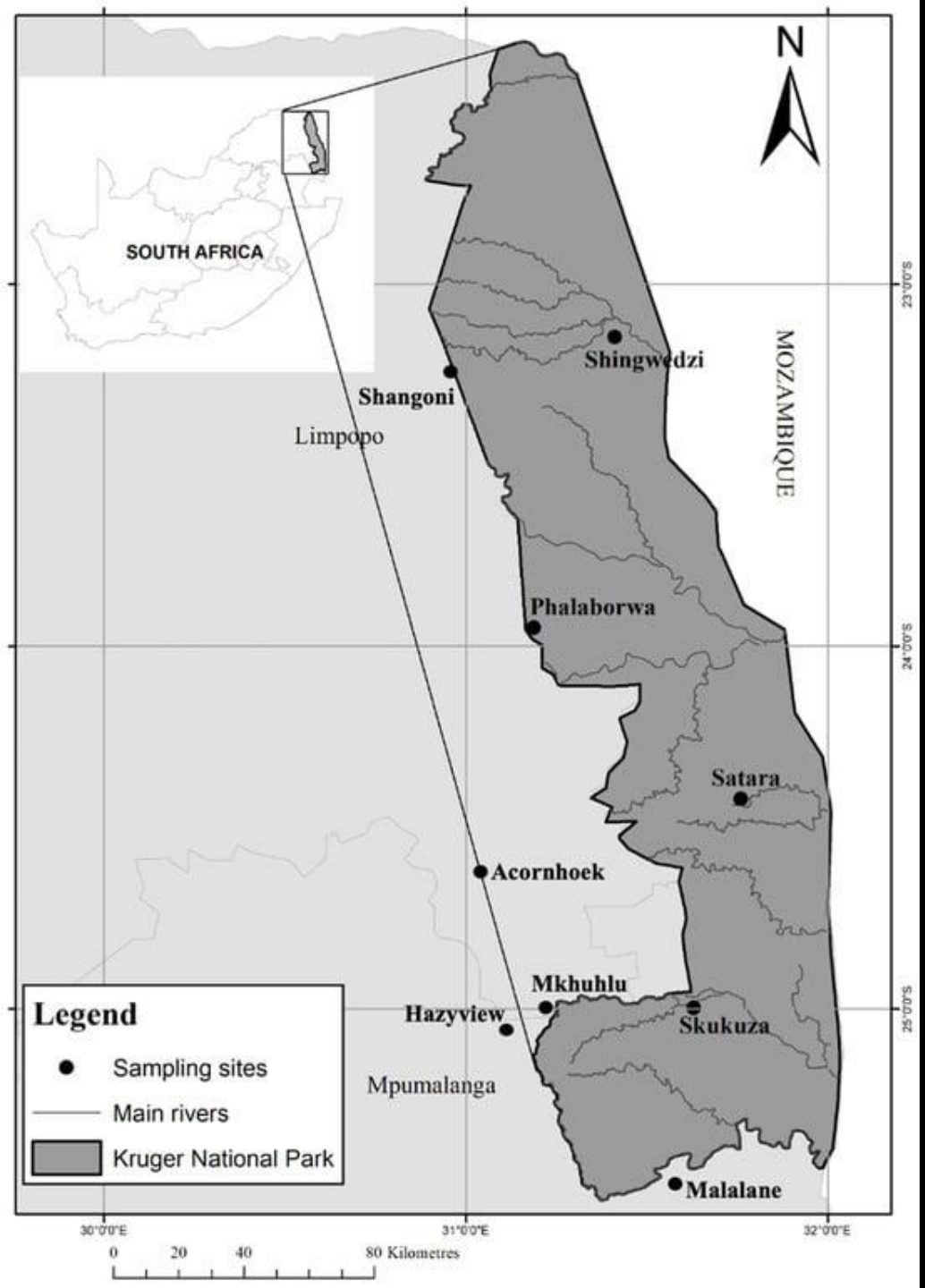
Diversity and host specificity of avian haemosporidians in a Afrotropical savanna conservation region

Mduduzi Ndlovu, Maliki B Wardjomto, Tinotendashe Pori & Tshifhiwa C Nangammbi

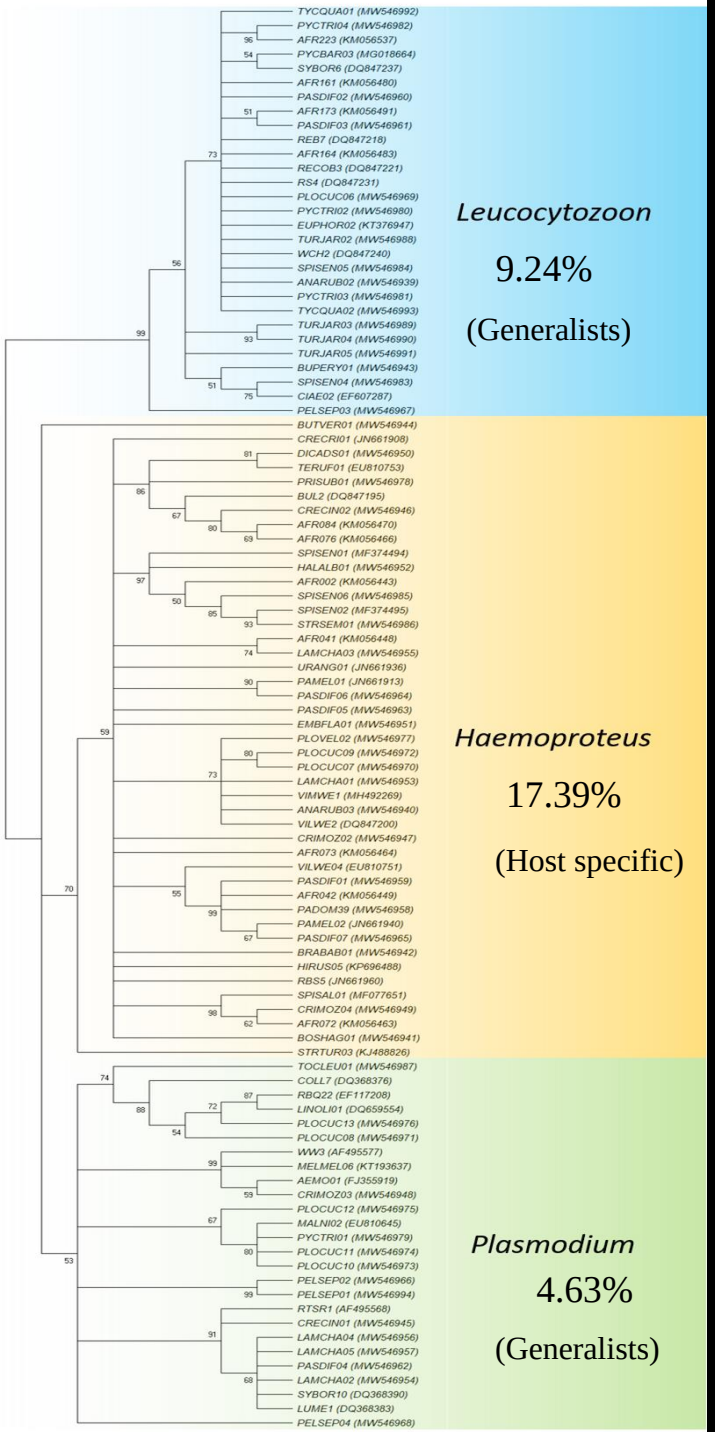
Introduction

- Afrotropical birds remain under-sampled
- Are biodiverse regions associated with high parasite diversity?
- Relationship between host specificity and parasite prevalence?



Methodology

- Wet and dry season season
- 1 035 birds sampled
- 55 bird species
- Nested PCR screening
- Sequencing



Results

- 28.41% overall prevalence
- 100 lineages detected
- 56 new lineages

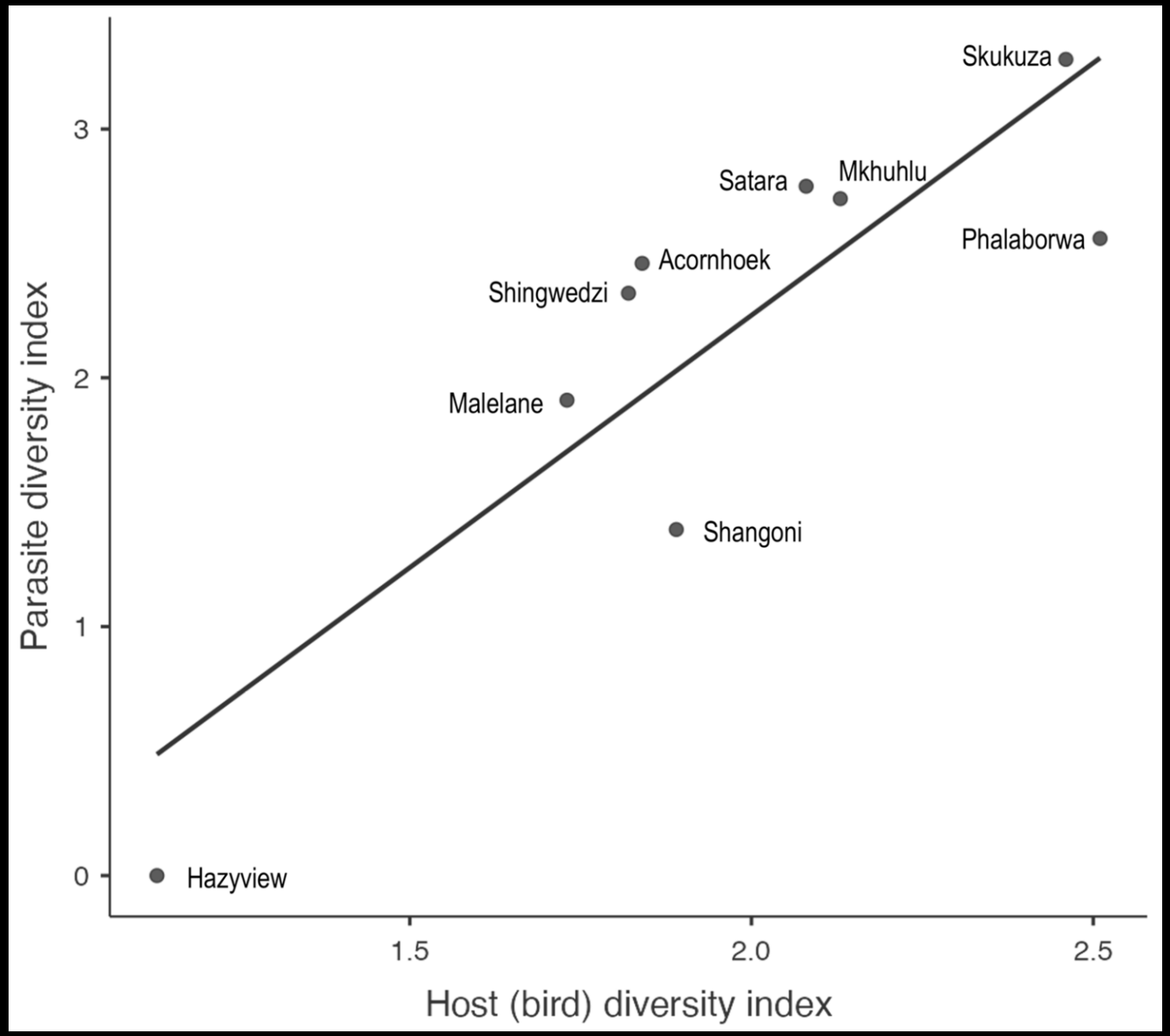


Figure. Relationship between bird diversity and parasite lineage diversity indices across the nine sampling sites inside and adjacent to Kruger National Park. Fitted linear regression: $y = 2.028x - 1.805$; $r = 0.866$; $F = 21.059$; $p = 0.0025$.

Take Home...

- Leucocytozoon found in almost every bird species
- Amplification Effect: bird diversity is positively related to parasite diversity.
- Low parasite prevalence, but a high parasite diversity.
- New lineages in Red billed Oxpeckers, Starlings, Weavers, Water thick-knees, Crested Francolin

Take Home...

animals

MDPI

Article

Diversity and Host Specificity of Avian Haemosporidians in an Afrotropical Conservation Region

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Simple Summary: African tropical regions have a remarkably high bird diversity, yet few studies have tried to unravel the presence of blood parasites in birds found in conservation areas. Knowing which blood parasites are present will help us to prepare for potential disease outbreaks. We test the hypothesis that conservation regions have a high diversity of parasites. Molecular methods were used to screen 1035 blood samples from 55 bird species for blood infections on sites inside and adjacent to the Kruger National Park in South Africa. Overall, 28.41% of birds were found infected with at least one type of blood parasites. Bird malaria of the type *Haemoproteus* and *Plasmodium* was found in 17.39% and 4.64% of the birds respectively. *Leucocytozoon* blood parasite was found in 9.24% of birds. One hundred distinct blood parasite types were detected, of which 56 were new types. Similar

Thank you

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