Human disturbance, biodiversity loss and snail-borne parasites

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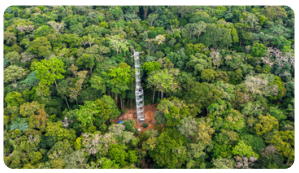
BACKGROUND

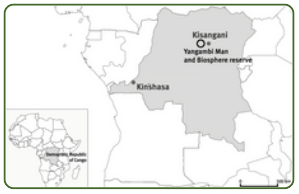
- Biodiversity can lower parasite infection prevalence and disease emergence risk = **dilution effect**
- But: its generality is still debated and some studies suggest even an amplification effect
- **Aim: to unravel the relationship between human disturbance, biodiversity loss and the infection prevalence of snail-borne parasites of small mammals**

STUDY AREA

- Mega-Transect: 80 km long gradient of human disturbance
- PilotMAB+ project, AfricaMuseum

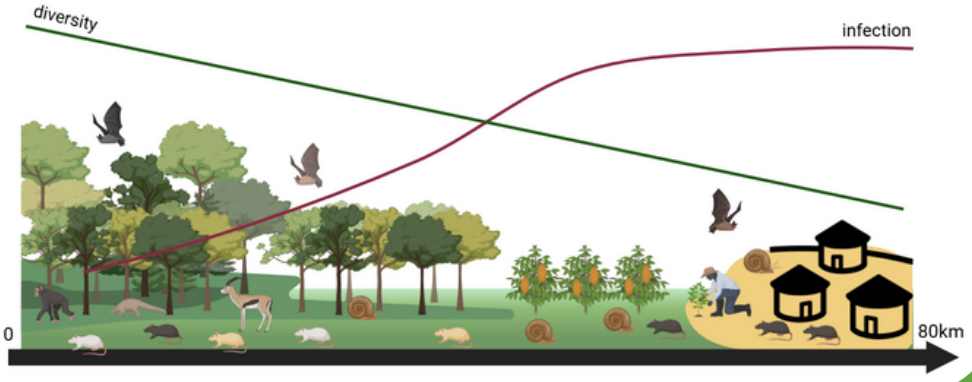
Yangambi, Kisangani, DRC = UNESCO-MAB reserve





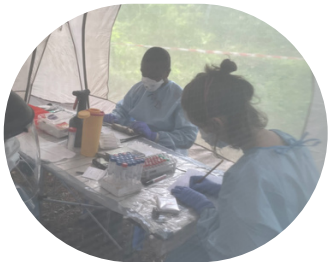
HYPOTHESES

- **Host and parasite diversity** ↓ with disturbance and biodiversity loss
- **Parasite infection prevalence** ↑ with biodiversity loss due to dilution effect
- Few winners, many losers at the highest disturbance levels



FIELD TRIP 2024

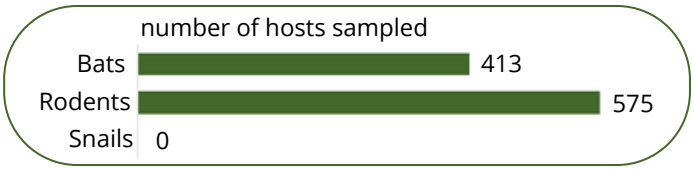
- Sampling snails and small mammals along 80km long disturbance gradient

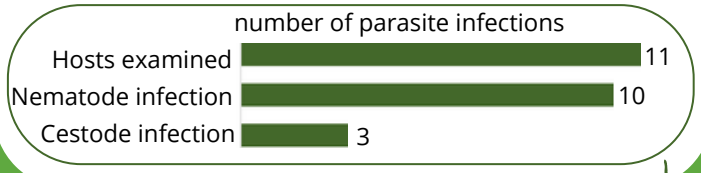


- Dissecting small mammals

- Isolating helminth parasites
- Morphologically and molecularly identifying helminth parasites

RESULTS





WHAT'S NEXT?

Start PhD

- 2025
- 2026
- 2027
- 2028

- Sampling rest of megatransect
- Describing parasites
- Developing and applying a metabarcoding protocol to detect helminth parasites in stool samples
- Linking all data to disturbance and biodiversity gradients
- Sampling endemic bilharzia sites
- Linking helminth data to virus infection data (collaboration with UAntwerp)

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