Modelling the climate and environmental suitability of Lymphatic filariasis (LF) in Nigeria.

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Introduction

• LF is a mosquito-borne Neglected Tropical Disease (NTD).

• Disease manifests as lymphedema, hydrocele and acute fevers.

• Prevention and treatment are by the use of bed nets and by treating entire endemic communities with Ivermectin + Albendazole + DEC.
Modelling the ecological niche of LF

- The data –
  - 717 presence-absence data points.
- The model –
  - An ensemble of Random forest and Boosted regression tree models
Climate and environmental covariates

- Precipitation
- Temperature
- Enhanced vegetation index
- Elevation/altitude
Environmental suitability of LF – on a binary scale

Population at-risk
91.7 (95% CI: 88.4-92.9) million people
Future directions…

• Bayesian modelling of the spatial prevalence of LF in Nigeria.

• Evaluating the impact of bed net on the spatial distribution on LF in Nigeria.

• Estimating the population infected with LF Nigeria.
Thank you 😊

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