Ecological niche modelling and spatial distribution of rift valley fever vectors in Baringo County, Kenya

The Rift Valley fever (RVF) is a vector-borne zoonotic disease that has an impact on human health and animal productivity. It is caused by the Rift Valley Fever Virus (RVFV) which is primarily transmitted by flood water *Aedes* mosquitoes. *Culex* spp and *Mansonia* spp are secondary vectors which pick up the RVFV from domestic animals and amplify the infection to other domestic animals and humans. This study used ecological niche modelling algorithms to predict the effect of climatic variables on habitat suitability and the spatial distribution of RVF vectors in Baringo County. We ran the Boosted Regression trees and Random Forest algorithms to model the spatial distribution of *Culex* spp. using species occurrence data and AFRICLIM climate data. The species occurrence data was obtained from longitudinal sampling of mosquito larvae in four strata within the study area between June and December 2014. The AFRICLIM climate data consisting of 21 variables was downloaded from https://webfiles.york.ac.uk/KITE/AfriClim. Preliminary results indicate that rainfall, moisture and temperature ranges are the key factors that affect the spatial distribution of *Culex* spp in Baringo County. *Culex* spp. is likely to be found in the riverine zone along Kerio River and in the lowlands around Lakes Baringo, 94 and Bogoria.