

**The spatial ecology of free-ranging domestic pigs in the Lake Victoria Crescent: a prelude to understanding disease transmission within low-input production systems**

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In this poster we will describe a spatial ecology study of free-ranging domestic pigs within the Lake Victoria Crescent region. The poster will describe collection and analysis of global positioning system (gps) data in order to determine the homerange of a domestic pig and how this data can be utilized in the understanding of disease transmission within this production system. A growing global demand for animal protein is being met in part by the expansion of pork production, which in many low-income countries is characterized by free-range systems. Free-range pigs are, however, at a higher risk of acquiring many diseases than their counterparts kept under intensive systems. These diseases may have serious public health or international trade implications such as *T. solium* cysticercosis and African swine fever, or have an economic impact due to poor production and carcass condemnation. Ten pigs in the Western Kenya region were identified through a multi-stage random sampling method and a harness with a gps unit was fitted to each for a period of 7 consecutive days. Position of the pig was recorded by the gps unit every three minutes and transmitted to a remote server via a mobile phone signal. The homerange was determined to be the area covered by 90% of the isopleths generated by a local convex hull technique. The average home-range of a domestic free-range pig was found to be 7,700 m<sup>2</sup> and the average distance moved a day was 6,720 m. We believe that the home-range data presented in this poster is the first time that such an estimate has been attempted and that it has great utility within further studies of disease transmission, particularly in the mathematical modeling of disease.