Two hundred fourteen serosamples were collected from four livestock species across five ranches in Laikipia County, Kenya. Serological analysis for *Coxiella burnetii* (the causative agent for Q fever) showed a distinct seroprevalence gradient: the lowest in cattle, higher in sheep and goats, and the highest in camels. Laikipia-wide aerial counts show a recent increase in the camel population. One hundred fifty-five stakeholder interviews revealed concern among veterinary, medical, ranching, and conservation professionals about Q fever. Local pastoralists and persons employed as livestock keepers, in contrast, revealed no knowledge of the disease. This work raises questions about emerging Q fever risk in Laikipia County and offers a framework for further integrative disease research in East African mixed-use systems.