

---

## 6. WILDLIFE, LIVESTOCK AND ANIMAL DISEASE RESERVOIRS

JAN GEU GROOTENHUIS

*PO Box 25021, Nairobi, Kenya*

**Key Words:** African horse sickness, African swine fever, bovine virus diarrhoea, foot and mouth disease, malignant catarrhal fever, rinderpest, canine distemper, rabies, maintenance hosts for ticks, East Coast fever, heartwater, babesiosis, anaplasmosis, bovine petechial fever, trypanosomiasis, anthrax, tuberculosis, brucellosis, helminths of wildlife, costs of disease control

### SUMMARY

The perceived risk of disease transmission from wildlife to livestock has led to massive eradication of wildlife in Africa, especially during the first half of this century. There is no evidence in East Africa that this reduction in wildlife has decreased the incidence of livestock disease or the costs of livestock disease control. The few exceptions in which wild animals are a true disease reservoir are discussed in relation to their economic importance. Several examples are given in which domestic animals carry disease and constitute a risk for disease outbreaks in wildlife populations. Data on the economic consequences of disease transmission between livestock and wildlife are almost non-existent. In general, disease risks emanating from wildlife have been overestimated. This is an area for research which would be of practical value for land use assessment of mixed wild and domestic animal production. Control of some of the most important cattle diseases is shown not to be cost-effective in semi arid rangelands. Based on economic and conservation goals, it appears to be valuable to re-examine current pressures on land use and to develop

sustainable options for change. Such analysis has already favoured the use of wildlife in many southern African countries.

## INTRODUCTION

The topic of this book and this chapter is probably best described by a quote from Thomas and Reid (1944) when they were considering how to cope best with disease control, particularly rinderpest, in South Africa: "*there is ample room in Africa for game in plenty as well as for livestock, but their interest need not and must not be allowed to clash. In other words, it is becoming more and more evident that wild animals have to be segregated in sanctuaries as much as for their own protection as for that of livestock and agriculture*". The question is, have Thomas and Reid been proven wrong or right, fifty years further on? This chapter deals particularly with the disease aspect of this question and the improved knowledge and ability to control animal disease. There has been tremendous development in cheap and effective vaccines, especially against important viral diseases, and in control measures against vectors of disease, such as ticks and tsetse flies. In this chapter an attempt is made to assess the role of wildlife in livestock disease and vice versa, taking into account the cost of disease control.

People and their livestock share the same habitat with numerous species of wildlife in the rangelands of Africa, especially in eastern, southern and central Africa. In Kenya, it is estimated that between 50 and 85% of the wildlife occurs outside National Parks (Ottichilo et al., Chapter 10). Wildlife and livestock largely share the same resources and in many cases wild and domestic species compete for the same food and water. Here the compatibility between wildlife and livestock is discussed from the point of view of disease transmission and the costs of its control. The main perspective that has been chosen is that of the livestock owner; what are his concerns in having a number of wildlife species on his land, which species are a threat to his livestock and what extra costs does he incur in order to protect his livestock from potential wildlife disease reservoirs? In some cases the perspective of the wildlife manager is taken who sees his wildlife affected by disease transmitted from domestic animals. The cost of disease to the livestock owner in Africa has been poorly documented.

The cost effectiveness of disease control in livestock is compared with wildlife utilisation as an economic option for land use. The wildlife treated in this chapter are mainly ruminants, with its largest group, the Bovidae, comprising some 80 species in Africa. When discussing distemper and rabies, wildlife includes the African carnivores, while writing about African swine fever the wild Suidae are included and in discussing horse sickness, the wild Equidae. The aim of this chapter is to contribute to the discussion of land use options in view of various disease challenges.

## IMPORTANT DISEASES AND PARASITES

The parasites that infect and infest animals in Africa can be divided into indigenous and introduced. The indigenous parasites have evolved with their hosts over mil-