

PREDATION IN MULTI-PREY/ MULTI-PREDATOR COMMUNITIES OF LARGE MAMMALS

Seeking common patterns between North America and Africa

Norman Owen-Smith

Centre for African Ecology, School of Animal, Plant and Environmental Sciences, University of the Witwatersrand, Wits 2050, South Africa

Abstract

The impact that large mammalian carnivores can have on the abundance of their ungulate prey remains contentious and achieving scientific consensus has proved elusive. Several studies in temperate latitudes in North America have documented how increases in the abundance of wolves have been associated with declines in the abundance of certain large ungulate species, and vice versa. In contrast, in African savanna ecosystems in both southern and eastern Africa, variations in the abundance of ungulate populations seem to be primarily associated with fluctuations in rainfall affecting vegetation growth and consequent food availability for herbivores. In this review, I will explain how the functional mechanisms operating in these distinct ecosystems are basically similar, despite contrasts in their diversity of predators and prey. I will describe how predation constrains the abundance of African savanna herbivores, despite resource controls over their population dynamics. For case histories I will draw particularly on findings from South Africa's Kruger National Park, where the most comprehensive information is available.