

THE BIOLOGY AND MANAGEMENT OF WILD RUMINANTS

CHAPTER TEN

FACTORS AFFECTING THE PHYSIOLOGY AND METABOLISM OF WILD RUMINANTS

by

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CHAPTER 10. FACTORS AFFECTING THE PHYSIOLOGY AND METABOLISM
OF WILD RUMINANTS

The physiology and metabolism of wild ruminants has been discussed in CHAPTER 6 - 9, with discussions of measured results and equations that permit calculations of rates and quantities. The discussions have centered about presumably normal conditions and functions. Rates of energy metabolism, for example, have been discussed in CHAPTER 7. The general equation for calculating ecological metabolism per day as a function of weight, reproductive rate, and JDAY gives an expected metabolism, unencumbered by unusual circumstances. The effects of cold weather, for example, are built into the equation as part of the winter metabolic depression.

There are a number of factors that affect the physiology and metabolism of wild ruminants, causing deviations from the norm. It is these deviations that cause much of the drama in ecology as the struggle for survival proceeds from day to day. Many, if not most of these factors are ordinary components of daily existence, with the effects becoming pronounced only when unusually high levels of the effector are encountered, or the effects of several factors are combined and the accumulated effect is great.

Parasites, for example, are part of the daily life of all wild ruminants. Unusually large numbers of parasites, however, may have a pronounced detrimental effect on the productivity of the host. Lesser parasite loads may have an impact when other factors, such as deteriorating range conditions during an exceptionally long winter, exist and act together to depress overall ecological efficiency.

This chapter includes extensive reference lists in three TOPICS. These three topics and the units in each are not discussed at length, however, because ecological analyses--the evaluation of relationships in the ecological context between primary consumer and range, parasite and host--have not been made. The extensive and organized reference lists may increase the efficiency of literature reviews to the point where persons interested in these factors will be more ecologically comprehensive in the approach to understanding the roles of these factors.

