

Animal exchange ratios: an alternative point of view

Kinyua, P. I. D.; Njoka, J.T.

Date: 2001

Abstract

An alternative interpretation is provided of the concepts of carrying capacity and exchange ratios, particularly suitable for game animal species, based on management models for a given area of rangeland or pasture. It involves modelling animal population dynamics as discrete-time logistic equations. Carrying capacity is then generated endogenously using rainfall as a proxy. The model interaction parameters, also generated endogenously, represent the animal exchange ratios. Because these two parameters are generated endogenously, this approach takes into account all the animals' habitat requirements (food, cover, water and space) simultaneously, unlike other approaches that tend to consider food requirements only. This makes the approach amenable to multi-species situations. It also captures the ecological definition of population growth models where the realized rather than the theoretical carrying capacity is determined endogenously.