

A Study of the Effect of Grazing Upon Changes in Vegetation on a Watershed in the Southern Appalachian Mountains

To evaluate the effect of cattle grazing on forest vegetation, a 145-acre watershed at the Coweeta Hydrologic Laboratory was grazed by an average of six past yearling cattle, 4 months during each year starting in 1941 and ending in 1952. It was found from this study that the influence of grazing upon plant numbers, species numbers, and average height was more pronounced in the cove-hardwood forest type than in the oak-hickory or yellow pine hardwood types. This is mainly due to a greater number of palatable species. The cattle would use all available forage on the cove sites before moving on up the slopes to the other types in search of food. For all forest types there was a greater decrease and change in the total number of

browsable plants on the unfenced and grazed plots than on the fenced and ungrazed control plots for trees, shrubs, legumes and other herbaceous vegetation. Grass vegetation decreased in the coves and oak-hickory types, but had a minor increase on the pitch pine-hardwood ridges. The results point to the fact that there is insufficient forage in the present dense hardwood stands to make grazing profitable. Also it is apparent that cattle damage young trees of desirable species, thus reducing the quality and altering composition of the stand. The fact that cattle did not thrive on the forage present is ample evidence that it is not profitable to graze Southern Appalachian woodlands, even at the light stocking used in this study if the land is to be managed for its water and timber values. *Abstract of thesis for the degree of M.S.*

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