Use of Goats to Control Understory Vegetation in Longleaf Pine Stands.

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Objectives:

Procedures:
A 4.86 ha stand with 1,112 longleaf pines (8 to 9 yr old/ha) was divided into twelve 0.40 ha plots at the McIntire Stennis Agroforestry Research Site, Tuskegee, AL. The vegetation can be described as longleaf pines with variety of understory scrub briars. Forty-four mature Kiko wethers (initial body weight (BW) = 47.3 ±2.1kg) were allocated randomly to four treatments (0, 3, 6, or 9 goats/0.4 ha) with three replications per treatment for 10 weeks according to a completely randomized block design. Understory biomass height and quantity (measured within 0.25 m^2 quadrats), soil bulk density, crown cover densities, and animal productivity were analyzed using the GLM procedure of SAS and using the initial values as covariates. Tree and diameter at breast height at 1.37m were monitored.

Results:
Results showed that soil bulk density and soil compaction were similar among treatments ($P>0.05$). Similarly, plant biomass height and quantity were not significantly different ($P>0.05$) among treatments. Average daily BW gains were similar ($P = 0.76$) but were all near zero. The combined final crown cover density percent at 2.0 m decreased linearly ($P<0.05$) with increasing stocking rates. Results suggested that increasing goat density did not affect soil compaction or understory biomass but did reduce crown cover suggesting that goats may be used to manage understory vegetation under longleaf pines but more data is needed to validate the results.

Impact:
The results suggested that goats may be used to manage understory vegetation under longleaf pines but more data is needed to validate the results.