

**Mátrai, K., Szemethy, L., Tóth, P., Katona, K. & Székely, J. (2004): Resource use by red deer in lowland nonnative forests, Hungary. Journal of Wildlife Management 68(4): 879-888.**

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First author: Mátrai Katalin

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Abstract

Resource use by red deer in lowland nonnative forests, Hungary

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Abstract:

Many red deer (*Cervus elaphus*) inhabit nonnative Scots pine (*Pinus sylvestris*) and black locust (*Robinia pseudoacacia*) forested areas with impoverished shrub understory in the Hungarian Plains. Nonnative plants can displace native plant species and alter wildlife habitat use, but few studies have investigated the relationship between the characteristics of these forests and red deer resource use. We investigated whether forest type (main tree species), rate of the main tree species, age class of nonnative stands determine the typical distribution of certain browse species at the shrub layer. We also examined whether we could predict red deer use of the various forests. We quantified the canopy cover of understory browse and estimated deer diet using microhistological analysis of composite fecal samples collected at 2-4 week intervals between May and November 2000. We also evaluated the habitat use of 3 radiomarked deer in the study area from 1995 to 2001. No significant correlation could be drawn between the characteristics of forest stands and browse at shrub level according to forest types, rate of main tree species, age classes, and canopy cover of the dominant browse species. Red deer consumed mainly browse species (63%) complemented by forbs (31%). The dominant browse species in the diet were black locust (75-71%) and elder (*Sambucus nigra*, 75-27%). The predominant browse species in the forests were black locust, tree of heaven (*Ailanthus glandulosa*), western hackberry (*Celtis occidentalis*), hawthorn (*Crataegus monogyna*), elder, and rare

browse species categorized as OTHERS. Each browse species formed separate patches - where its cover was significantly higher (range = 45-85%) within the patch than outside (range = 5-9%) - that made up 70% of the lowland forest. Deer occupied habitats containing 1-3 browse clusters. Browse species coverage differed according to individual core areas for deer, but the total browse cover (40%) within the core areas was significantly higher than outside (29%). We concluded that the characteristics of forest stands (type and age) do not predict the behavior of deer in nonnative lowland stands because forest types do not have a characteristic shrub flora. Therefore, neither foraging nor hiding patches were related to overstory characteristics. Thus, a detailed shrub description according to cover and distribution of species is necessary for forest and wildlife management.

forest structure: shrub layer

forest structure: stand

forest structure: regrowth

methodology: analysis, statistics

game management

game ecology

Notes

browse cluster, Cervus elaphus, core area, diet, feces analysis, Hungary, line-transect sampling, nonnative forest, red deer

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