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Intraspecific interactions, resource selection, and movements of Eastern cottontail rabbits

Eastern cottontail rabbits (*Sylvilagus floridanus*) have severely hampered forest regeneration in the Lower Missouri River floodplains due to intense herbivory. Our objectives were to determine intraspecific interactions, resource selection, and movements of rabbits to aid reforestation efforts at Plowboy Conservation Area. We collected radiotelemetry locations on 41 rabbits (20 adult males, 10 adult females, 6 juvenile males, 5 juvenile females) during winter 2004-2005. We analyzed 50% and 95% adaptive kernel home ranges and assessed resource selection using a chi-square analysis. There was a significant difference in the number of interactions between males with other males versus females with other females ($P < 0.05$). Additionally, females interacted more with males than with other females ($P < 0.001$). Adult male core area (50%) averaged 1.77 ha (Range = 0.41 to 5.23 ha, SD = 1.33) and home range (95%) averaged 11.60 ha (Range = 4.87 to 18.17 ha, SD = 3.84). Adult female core area (50%) averaged 0.44 ha (Range = 0.19 to 0.76 ha, SD = 0.17) and home range (95%) averaged 3.75 ha (Range = 2.24 to 5.68, SD = 1.37), indicating that rabbits are using small areas rather intensely. Two large scale (control and no redtop) habitats were selected ($P < 0.001$) while the other four habitats were avoided ($P < 0.001$). Three fine scale habitats (johnsongrass, smartweed, and coarse weeds) were selected ($P < 0.001$) while the other eight were avoided ($P < 0.001$). Managers should remove preferred habitat that provides cover and food for rabbits within 1160 m of forest regeneration sites, due to the males' extensive average home range (11.60 ha) and plant a cover crop on site that does not provide suitable habitat. Alternatively, agricultural crops could be grown surrounding the site and mowing everything on the regeneration site could be considered to eliminate habitat.