

# SURVIVAL, CAUSE-SPECIFIC MORTALITY, AND SPATIAL ECOLOGY OF WHITE-TAILED DEER IN THE NORTH GEORGIA MOUNTAINS

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**Abstract**—Acorn abundance in the Southern Appalachians has been shown to be an important driver of white-tailed deer (*Odocoileus virginianus*) populations. Reductions in timber harvests on National forests in recent years has resulted in increased coverage of mature forests and little early successional habitat. The Georgia Department of Natural Resources (DNR) documented an 85 percent decline in the harvest of male white-tailed deer from 1979-2015 on eight Wildlife Management Areas (WMAs) in the North Georgia Mountains. DNR substantially reduced opportunities to harvest female deer, but populations continued to decline. As densities decreased, the condition of deer improved, suggesting that habitat conditions have not caused declines in fecundity. Therefore, factors other than acorn availability may be driving declines in these populations. Simultaneously, predator populations increased in northern Georgia, including black bears (*Ursus americanus*) and coyotes (*Canis latrans*). Therefore, insufficient recruitment of fawns due to predation is suspected as a reason for population declines. In January 2018, we are initiating a study in the north Georgia Mountains to investigate: (1) survival and cause-specific mortality of deer fawns, (2) home ranges and habitat selection of deer, and (3) influence of mast on space-use by deer. We will GPS-collar 30 adult does per year for 3 years on WMAs, and capture and radio-collar their fawns. We will investigate habitat selection and cause-specific mortality of adults and neonates. Understanding the potential influences of deer habitat use on population vital rates would improve management of deer populations and their habitats to aid population recovery.

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