

The Effects of Supplemental Feeding on Selective Foraging in White-tailed Deer

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Selective foraging by white-tailed deer leads to the increased consumption of highly palatable and nutritious vegetation, which has the potential to reduce plant community diversity and productivity. Furthermore, supplemental feeding may allow deer to forage more selectively, exacerbating plant community and ecosystem effects. Our objective is to use tame deer and stable isotopes to assess the effects of supplemental feeding on selective foraging by white-tailed deer and to describe the potential environmental impacts.

We will collect bite count data in all 4 seasons using tame deer maintained in 200-acre high-fenced enclosures. Half of these deer will receive supplemental feed, and the other half will have access to only natural vegetation. Samples of each plant species consumed by the deer will be collected and analyzed to determine metabolizable energy and digestible protein—the primary measures of forage quality. We will use carbon and nitrogen stable isotope values from the blood and hair of individual deer to determine the proportion of supplemental feed in each deer's diet over time.

By comparing dietary quality to the proportion of supplemental feed consumed by each deer, we will be able to determine if supplemental feed affects foraging selectivity of white-tailed deer. This research will provide insight into the environmental impact of supplemental feeding programs for white-tailed deer.

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