

WISCONSIN COUNCIL ON FORESTRY
Position Paper on
DEER HERBIVORY IN WISCONSIN FORESTS

ISSUE: White-tailed deer populations in much of Wisconsin are above goals identified in administrative code. These goals are determined by Wisconsin Department of Natural Resources wildlife management professionals and balance the interests of deer hunting, sustainable forest management, agriculture, and natural resources conservation. Deer herbivory is causing ecological and economic losses in commercial forests by affecting tree growth, species composition and age class diversity, and is threatening the sustainability of forest management.

COUNCIL POSITION:

- Deer herbivory is a serious problem that, if not addressed, will affect the sustainability of forestry in Wisconsin.
- The Council supports management efforts of the Wisconsin Department of Natural Resources to manage the deer herd at the goals identified in administrative code. These goals must take into account the impact of deer density on forest sustainability.
- At current goals, deer numbers will have to be reduced in many areas of the state.

BACKGROUND: Wisconsin's white-tailed deer population shares the same historical legacy as much of the eastern United States. Deer and deer habitat were greatly reduced during the forest cutovers in the late 19th century and early 20th century. Deer increased dramatically as the forests regenerated and favorable habitat filled the landscape.

Wisconsin has 16 million acres of forest land, covering nearly half the state. The most effective management tool for controlling deer numbers has been sport hunting. Deer hunting in Wisconsin has great social and political significance and strong cultural values surround the issues of deer populations, hunter success and deer feeding/viewing. Efforts to reduce the herds to appropriate management levels through hunting have not always been successful because of limited hunting capacity, hunter opposition to changes in deer hunting seasons and regulations, and a substantial public preference for high deer numbers.

Aldo Leopold warned of the threats to forests from overabundant deer in the 1930's and 1940's, and subsequent research (e.g., Côté, et al.; Rooney; Rooney and Waller, Horsley, et al.) has confirmed a host of direct and indirect ecological effects which accumulate over time. Tremblay (2005, p. 51) summarized these effects as follows:

By foraging selectively, deer affect the growth and survival of many herb, shrub, and tree species, modifying patterns of relative abundance and vegetation dynamics. Cascading effects on other species extend to insects, birds, and other mammals. In forests, sustained overbrowsing reduces plant cover and diversity, alters nutrient and carbon cycling, and redirects succession to shift future overstory composition. Many of these simplified alternative states appear to be stable and difficult to reverse.

Tremblay's last observation is particularly troublesome; i. e., reducing deer density does not guarantee that their ecological effects can be reversed. High deer populations can therefore directly threaten long-term forest sustainability.

There has been no research in Wisconsin specifically to quantify the economic impacts of deer herbivory or estimate reductions in forest productivity caused by deer. However, anecdotal information from private-sector foresters and informal reports from county, state and federal foresters indicates that deer herbivory is significant and that it is causing economic losses as well as reductions in forest productivity and biodiversity. In addition, the measures used to protect seedlings from deer such as fencing, plastic tubing and repellent sprays are expensive to implement and maintain.

Forestry surveys completed by the Wisconsin Department of Natural Resources on forest regeneration successes and barriers gathered these results:

- A 2005 reforestation survey identified deer browse as the most significant barrier to forest regeneration, with 81% of the respondents citing deer browse as a problem.
- A 2006 plantation assessment found that in many plantations deer browse has significantly impacted the growth and survival of hardwood seedlings.
- A 2006 natural oak regeneration survey asked respondents to rate eight different factors regarding oak regeneration. Of the eight factors, more respondents identified deer as a strong to very strong contributor to oak regeneration failure than any other factor.

SUMMARY: Deer herbivory is increasing in Wisconsin forests causing economic losses by reducing tree survival and growth, and altering species and age class composition. The continued overabundance of deer can directly threaten the future of sustainable forestry. Research in Pennsylvania has shown that future economic impacts are avoidable, and that detrimental ecological impacts to forest plant and animal communities are preventable but only if action is taken to reduce deer numbers. The opportunity to reduce the economic and ecological effects is within reach if deer numbers are reduced in a timely and strategic manner.

Literature Cited

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