

WISCONSIN COUNCIL ON FORESTRY BRIEFING PROPOSAL: DEER HERBIVORY IN WISCONSIN FORESTS

ISSUE: White-tailed deer populations in Wisconsin are above levels recommended by Wisconsin Department of Natural Resources wildlife management professionals. 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.

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 approximately 14.7 million acres of commercial forest land, the majority of which is in the northern part of 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.

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.

The Council's role is to identify forestry issues of which the Governor and the Legislature need to be made aware.

POTENTIAL ACTIONS FOR THE COUNCIL TO CONSIDER:

1. The Council could provide the Governor and the Legislature with a position paper expressing our support for the Department of Natural Resources' management efforts to bring deer numbers down and encourage even lower numbers.
2. The Council could provide the Governor and the Legislature with a position paper expressing our concern that deer herbivory is a serious problem that, if not addressed, will affect the sustainability of forestry in Wisconsin.
3. The Council could further suggest potential venues for addressing the issue of deer herbivory, such as a set of conferences. A first conference might involve a relatively small group of stakeholders, including for example representatives from forest industries, public and private forest managers, insurance and tourism industries as well as key natural resource leaders. The purpose of this conference would be to ascertain if there is common interest in attempting to address the issue of deer numbers. If it is determined that there is sufficient interest, the group would develop a plan of action for addressing the issue. This plan might entail a second conference which would be designed to engage the full set of stakeholder interests in deer management.

The second conference might include, at a minimum, wildlife researchers and managers, forest ecologists and plant ecologists, local/state/federal government officials, forestry experts, deer hunting/baiting/feeding interests, representatives of businesses that are impacted by high deer numbers, conservation organizations, environmental organizations and other interested parties. The purpose of this conference would be to try to achieve agreement on the need to reduce deer impacts on Wisconsin's forests and the kinds of policies that might achieve this. Thus, the conference could focus on 1) finding common ground among all stakeholders on the need for action, 2) developing strategies and mechanisms for addressing the issue, and 3) developing action plans and timelines for implementing the strategies and mechanisms.

The two conferences described above could be organized by the Council or, alternatively, by an independent agency with expertise in dealing with controversial policy issues, such as UW-Extension.

Literature Cited

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