A Position Statement of the Michigan Society of American Foresters
White-tailed Deer (*Odocoileus virginianus*) Management

Position

The Michigan Society of American Foresters (SAF) advocates the sustainable use and management of all Michigan forest resources, forest products, and forest services for the good of society. To do this, white-tailed deer (*Odocoileus virginianus*) numbers must be low enough to allow for the regeneration of forests, the development of desired plant communities and wildlife habitats, and all the goods and services that managed forests generate. Policies and issues on both state land and private land, including urban and residential areas, need to be re-evaluated, especially those that will support family forestland owners to voluntarily take deer. The majority of forestland occurs on private land. Therefore, special efforts should be made to promote ecologically healthy forest management on these lands. The Michigan SAF advocates aggressive actions to reduce deer numbers where excessive deer herbivory is apparent by observations of professional foresters and/or by studies of vegetation composition, structure, and function.

The Michigan SAF supports the State of Michigan's Department of Natural Resources' (DNR) efforts of white-tailed deer management through recreational deer hunting. Further, DNR hunting regulations should have more emphasis on forest health when setting deer management goals and objectives.

The Michigan SAF also supports practices and policies beyond recreational deer hunting including, but not limited to, the following:

1. Regulated market hunting. This can also be a revenue generator for the DNR, market hunters, and the restaurant industry.
2. Nuisance deer removals by sharp-shooters/archers for communities which desire such actions, including financial support.
3. Unhindered access to nuisance animal (deer) permits by private forestland owners. Access may be limited during certain seasons or conditions, when appropriate. Reporting kills should be a requirement.
4. Silvicultural solutions for forest recruitment in the face of high deer densities, including financial support.
5. Deer yards (deer complexes) should be managed to support deer numbers only in areas of the state where deer-caused depredation is not preventing forest recruitment or other expected ecological processes.

Issue

Excessive white-tailed deer herbivory in Michigan forests is impacting native tree regeneration, sustainable forest management, and long-term ecological health of

forests, and other vegetation types. Other effects include altering plant species composition, distribution, and abundance and reducing understory structural diversity that many other species of wildlife depend upon. As noted by Walters and others (2020), in their expansive northern Michigan study of northern hardwoods, "*It is clear that the current management combination of low-intensity selection silviculture and the maintenance of high deer populations is not working in many regions*." In many cases, researchers found low stocking of desirable tree species and high stocking of undesirable species in northern hardwood stands (Walters et al., 2022).

Many issues of habitat management, deer population management, and natural resource management are highly contentious. Some challenges lie in funding, management philosophy, public outreach, and the application and implementation of the results of scientific research. Michigan is not alone in this situation. For example, the Rhode Island SAF adopted a Position Statement that noted: "*White-tailed deer herbivory in many parts of Rhode Island is impacting the ecological function of forests by affecting tree regeneration possibly leading to: change in species composition; reduction of diversity in the shrub layer; negative impacts to forest ecosystem health, long term sustainable forest management for a wide range of wood products, wildlife habitat, and watershed protection values*."

Issue

The Michigan Natural Resources Commission (NRC) has been unable and/or unwilling to address deer damage issues. Concerns among professional foresters date back at least to 1960 (NRC 1960). Subsequently, the Michigan DNR has been unable to implement science-based management practices in many areas that conform to NRC Policy 2007 on Deer Management, issued 14 April 1994. The DNR goal is to manage the deer herd using management practices based on scientific research to:

1. *Maintain healthy animals and keep the deer populations within limits dictated by the carrying capacity of the range and by its effect on native plant communities, agricultural, horticultural, and silvicultural crops, and public safety.*
2. *Maintain an active public information program designed to acquaint the public with the methods of deer management and the conditions needed to maintain a healthy, vigorous herd.*

Issue

As noted, the first principle stated in the Michigan Deer Management Plan is "manage deer populations at levels that do not degrade the vegetation upon which deer and other wildlife depend" (Michigan DNR, Wildlife Division, 2016). Foresters' field experiences and contemporary research indicate that the Michigan DNR has been unsuccessful in achieving this in many areas of Michigan (Randall and Walters, 2011, Walters et al., 2020., Walters et al., 2022). Greater efforts to reduce deer populations where herbivory is degrading Michigan forests are needed. Clearly, hunters are management partners and recreational deer hunting is a critical management tool that must be part of any solution. However, hunting alone, especially hunting pressure on private land, is clearly an insufficient tool to reduce deer numbers across much of Michigan's forests.

Issue

Current status of recreational hunting pressure is insufficient to maintain deer numbers at ecologically and economically healthy levels, especially on private forestlands.

Issue

Funding levels and funding sources, especially funds generated by deer hunting licenses, surcharges on hunting gear purchases, the federal Pittman-Robertson Wildlife Restoration Act, and the Upper Peninsula's Deer Habitat Improvement Partnership, have skewed management in favor of maximum numbers of deer rather than sustainable numbers of deer.

Issue

Deer are a publicly-owned natural resource. Where deer numbers impair the management and long-term sustainability of forest systems, private forestland owners have little recourse. This becomes a private property rights issue. Forestland owners wishing to reduce deer numbers on their ownership should be supported and encouraged by state policies, at least as much as those forestland owners who wish to see more deer.

Issue

Failure to secure forest regeneration and recruitment challenges forestland managers' and owners' ability to manage for forest health, many wildlife habitat conditions, combat invasive species, mitigate climate change, and obtain needed levels of forest products and services that depend on forests remaining as forests.

Issue

It is recognized that excessive deer herbivory is not the sole reason for a lack in forest regeneration and recruitment. However, without addressing deer herbivory, the other reasons may not matter.

Issue

Heavy deer browsing can harm the [community] diversity of plants and animals. Centuries of collective field experience among foresters indicates that such deer browse damage is significant in many parts of Michigan.

Issue

Deer population and habitat condition data, and research from Michigan and elsewhere, indicate that deer population densities are too high in many parts of the state to sustain healthy habitats for deer and other species, and to secure adequate amounts of tree recruitment. Reducing deer populations or applying novel forest management strategies may be needed in these areas (Walters et al., 2022).

Issue

Deer overabundance could impact the forest certification status of both public and private forest lands. Michigan's state forests are dual certified under the Sustainable Forestry Initiative and the Forest Stewardship Council. Failure to adequately regenerate and recruit new forests violate standards of forest certification. Such failure can potentially lead to de-certification. De-certification could result in forest products unacceptable to primary wood-processing mills. Other forest lands are certified under these programs or others. The concept of sustainability includes the requirement that forests are maintained in the long run. Deer herbivory can lessen the likelihood of maintaining forests as forests and, more likely, change the species composition of forests to vegetative species, including exotic invasive species, that are not favored by deer as browse.

Issue

High deer densities contribute to increasing car-deer collisions (over 51,000 in 2020) and spread of certain diseases (e.g., bovine tuberculosis, chronic wasting disease, Lyme disease, and potentially Covid).

Issue:

Elements of the wildlife management community may resist innovative control practices, especially regulated market hunting, as it violates a portion of North American Model of Wildlife Conservation of a century ago. The Michigan SAF aligns with those in the wildlife community that believe the deer management model needs to be modified to address current environmental, societal, and economics circumstances.

The stakes for current and future generations of trees are high. Walters and others (2020) concluded from their expansive study that if "*current management paradigms persist, forest diversity, resilience, and sustainable management will erode*." Charting alternative courses will require the best resources which biological, social, and economic sciences can offer. The existing process for managing the white-tailed deer resource must be modified to allow for the input of all segments of the public. Affected publics must have ownership in the process. A degree of failure and learning must be expected and accepted, but the status quo is neither sustainable nor desirable. On-going dialogue about, and cumulative action on, these issues should be a high priority in the management of Michigan's natural resources.

Background

Free-ranging white-tailed deer are a public resource owned by the people of the State of Michigan and managed by the Department of Natural Resources under the authority of the Michigan legislature.

Discussions among SAF foresters have led to the following suggestions regarding deer management:

- State-wide, research-based, deer population, and habitat quality assessments and goals are needed in Michigan.

- A lack of site-specific research, however, should not prevent decisions to reduce deer populations in areas where excessive habitat damage is recognized by resource managers.
- Innovative deer-population control methods should be considered, especially where damage from deer is known and where current hunting strategies are ineffective.
- Hunter and public education programs regarding the ecological impacts and management of white-tailed deer must be part of any solution.
- Non-hunting funding sources should be explored for supporting statewide wildlife management.

References Cited

Michigan Department of Natural Resources, Wildlife Division. 2016. Michigan Deer Management Plan. Lansing: Michigan Department of Natural Resources, Wildlife Division Report No. 3626. 46 p.

Natural Resources Resources Council. 1960. The Michigan Natural Resources Council Annual Meeting. Civic Center, Lansing, Michigan. 60 pp.

Randall, J.A. and M.B. Walters. 2011. Deer density effects on vegetation in aspen forest understories over site productivity and stand age gradients. For. Ecol. Manage. 261(3): 408-415.

Rhode Island Society of American Foresters (SAF). No date. Forest Management and White-tailed Deer Herbivory in Rhode Island Forests: A Position Statement of the Rhode Island Chapter of the Society of American Foresters. 4 p.

Russell, M.B., C.W. Woodall, K.M. Potter, B.F. Walters, G.M. Domke, and C.M. Oswalt. 2017. Interactions between white-tailed deer density and the composition of forest understories in the northern United States. For. Ecol. Manage. 384 (2017): 26-33.

Walters, M.B., E.J. Farinosi, and J.L. Willis. 2020. Deer browsing and shrub competition set sapling recruitment height and interact with light to shape recruitment niches for temperate forest tree species. For. Ecol. Manage. 467 (2020): 118-134.

Walters, M.B., C.R. Henry, E.J. Farinosi, G.J. Roloff, M.L. Donovan, and J.P. Hartman. 2022. Sapling stocking targets for multiple management goals in northern hardwood forests: How do stands measure up? J. Forestry. 2022, 1-25.

The Wildlife Society. 2012. North American Model of Wildlife Management. Technical Review 12-04. *https://wildlife.org/wp-content/uploads/2014/05/North-American-model-of-Wildlife-Conservation.pdf*

Other References

Alt, G. 2005. Challenges of deer management from an ecosystem perspective, IN Proceedings "Forests & Whitetails-Striving for Balance," the Spring 2005 conference of the Michigan Society of American Foresters, *http://forestry.msu.edu/msaf*

Alverson, W.S., and D.M. Waller. 1997. Deer populations and the widespread failure of hemlock regeneration in northern forests. pp. 280-297 in W. McShea and J. Rappole, eds., The Science of Overabundance: Deer ecology and population management, Smithsonian Inst. Press, Washington, D.C.

Caughley, G. 1981. Overpopulation. In Problems in Management of Locally Abundant Wild Mammals. Ed. P.A. Jewell, S. Holt, 1:7-20, New York: Academic. 361 pp.

Cote, S.D., T.P. Rooney, J.P. Tremblay, C. Dussault, & D.M. Waller. 2004. Ecological impacts of deer overabundance. Annual Review of Ecology Evolution and Systematics 35: 113-147. (preprint). *www.botany.wisc.edu/waller/deer*

deCalesta, D.S. 1994. Impact of white-tailed deer on songbirds within managed forest in Pennsylvania. J. Wildlife Mngt. 58: 771-718.

deCalesta, D.S. and S.L. Stout. 1997. Relative deer density and sustainability: A conceptual framework for integrating deer management with ecosystem management. Wildlife Soc. Bull. 25: 252-258.

Donovan, G. 2005. Chronic regeneration failure in northern hardwood stands: A liability to certified forest landowners, IN Proceedings "Forests & Whitetails-Striving for Balance," the Spring 2005 conference of the Michigan Society of American Foresters, *http://forestry.msu.edu/msaf*

Frelich, L.E. and C.G. Lorimer. 1985. Current and predicted long-term effects of deer browsing in Michigan, USA. Biological Conservation 34: 99-120.

Garrott, R.A., P.J. White, and C.A. Vanderbilt White. 1993. Overabundance: An issue for conservation biologists? Conservation Biology 7: 946-949.

Healy, W.M., D.S. deCalesta, and S.B. Stout. 1997. A research perspective on white-tailed deer overabundance in the northeastern United States. Wildlife Society Bulletin 25: 259-263.

Latham, R.E., J. Beyea, M. Brenner, C.A. Dunn, M.A. Fajvan, R.R. Freed, M. Grund, S.B. Horsely, A.F. Rhoads, and B.P. Shissler. 2005. Managing white-tailed deer in forest habitat from an ecosystem perspective: Pennsylvania Case Study. Report by the Deer Management Forum for Audubon Pennsylvania and Pennsylvania Habitat Alliance, Harrisburg. xix + 340 pp. *http://pa.audubon.org/ExecutiveSummary.pdf*

Marquis, D.A., R.L. Ernst, and S.L. Stout. 1992. Prescribing silvicultural treatments in hardwood stands of the Alleghenies (revised). U.S. Forest Service General Technical Report NE-96. 102 pp.

McShea, W.J., H.B. Underwood, and J.H. Rappole. Eds. 1997. The Science of Overabundance, Deer Ecology and population management. Smithsonian Books, Washington and London, 394 pp.

Miller, R.O. 2004. Regeneration in a heavily browsed northern hardwood stand twelve years after scarification and fencing. Michigan State University Upper Peninsula Tree Improvement Center Research Report. *www.maes.msu.edu/uptic*

Rooney, T.P., S.M. Wiegmann, D.A. ogers, and D.M. Waller. 2004. Biotic impoverishment and homogenization in unfragmented forest understory communities. Conservation Biology 18: 787-798.

Rooney, T.P., and D.M. Waller. 2003. Direct and indirect effects of deer in forest ecosystems. For. Ecol. Manage. 181: 165-176. *www.botany.wisc.edu/waller/deer/Davos.pdf*

Sinclair, A.R.E. 1991. Science and the practice of wildlife management. J. Wildlife Mngt. 55: 767-772.

Tilghman, N.G. 1989. Impacts of white-tailed deer on forest regeneration in northwestern Pennsylvania. J. Wildlife Mngt. 53: 524-532.

White, M.A. 2012. Long-term effects of deer browsing: Composition, structure, and productivity in a northeastern Minnesota old-growth forests. Forest Ecology and Management 269: 222-228.

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The Michigan Society of American Foresters is the scientific and educational association of professional foresters, including consultants, researchers, professors, students, and employees of public agencies and private firms. The Mission of SAF is to advance the science, technology, education and practice of professional forestry to benefit current and future generations.