

The New York Forest Owners Association

» POSITION STATEMENT «

High-Grading and Diameter-Limit Cutting

Situation Statement

High-grading is a type of timber harvesting that removes high value timber and favors the low value, decayed, or poorly formed trees. Diameter-limit cutting is often like high-grading. It removes all the valuable trees greater than some specified diameter from a woodlot. High-grading and diameter-limit cutting both maximize short term revenue without consideration for future productivity and at the expense of tree and forest resilience.

Most woodlots have a diverse mix of trees – different species, different sizes, and in different conditions of health and form. The valuable trees for timber are of a commercially desired species and basically sound. Other trees may be useful for firewood and may contribute to wildlife habitat and possibly other forest values, but have little or no sale value. They may be too small, of noncommercial species, crooked, and/or extensively decayed.

Depending on the history, some woodlots have trees of different ages (uneven-aged). But other woodlots may have trees of a common age (even-aged). Both kinds of woodlots often have trees of several different sizes. In uneven-aged stands, the small trees are young. They usually grow well when released by partial stand cutting that releases trees in all size classes, generally have good stem qualities, and will eventually become valuable trees. Among even-aged woodlots, the small and large trees have similar ages. The small trees grew poorly in the past and do not respond well when released from competition. If left after a diameter-limit cutting, these small trees continue to grow slowly, with little improvement in quality. So cutting the big trees may not help the small ones to grow better and become valuable timber. A knowledgeable forester can recognize if a woodlot is even- or uneven-aged, and judge the growth potential of the small trees in it.

Sustainable forest management, the opposite of these exploitive practices, means leaving some valuable trees after a timber harvest, and removing at least some low value trees during cutting. These remaining valuable trees are an investment in the future productivity of the woodlot, and

become the parents of future trees as well. Furthermore, species diversity is maintained.

By contrast, high-grading each time a woodlot is harvested leaves a forest increasingly filled with poorly formed, slowly growing, and low value trees. The problem is compounded when poor trees provide the seed for future trees. If the parent trees have undesirable traits, it increases the likelihood that similar undesirable characteristics will occur in the next generation. A high-graded woodlot may appear green and healthy from a distance, but the growth of useful timber is only a fraction of the potential and it may be more fragile ecosystem.

Position Statement

- Forests should be sustainably managed for the long term to maintain the wide array of benefits they can produce. High-grading and diameter-limit cutting impair long term timber productivity and can, in some cases, diminish many other important future forest benefits.
- Over time, a sustainably managed forest produces more and better timber, a higher and steadier income stream for the owner, and will provide for more of the essential non-timber products and services of the forest including wildlife habitat and watershed protection.
- Timber from privately owned woodlots is the main source of wood for the forest products industry in New York State which provides thousands of jobs and helps support the state's economy. High-grading and diameter-limit cutting can have long-term negative impacts on the economy by reducing forest productivity.
- Removal of all the commercially valuable trees by repeated high-grading or diameter-limit cutting can, in some cases, reduce the diversity of tree species, with possible adverse impacts on wildlife depending on the tree species that have been removed.

- When a forest loses species diversity it can increase the impact of insects, disease, ice and wind storms and other disturbances. The poor condition of residual trees after high-grading may also make a forest less able to recover from disturbance events.
- To avoid high-grading and diameter-limit cutting, a landowner should work with a forester who is supportive of maintaining the woodlot in a condition that will continue to provide many benefits for the future.

Suggested Reading

Chapin, F. S. et al. 2000. Consequences of changing biodiversity. *Nature* 405: 234-242.

Jacobson, M.G. 2001. Sustainable forest harvesting: an economic perspective. Penn State University Renewable Natural Resources, School of Forest Resources Cooperative Extension. *Forest Finance Series #1*. 5 pages. <http://pubs.cas.psu.edu/freepubs/pdfs/uh144.pdf>

Jacobson, M.G. n.d. To cut or not to cut: deciding when to harvest timber. Penn State University Renewable Natural Resources, School of Forest Resources Cooperative Extension. *Forest Finance Series #8*. 8 pages. <http://rnrext.cas.psu.edu/PDFs/uh188.pdf>

Kenefic, L. S. and R. D. Nyland 2005. Diameter limit cutting and silviculture: a primer for landowner, practitioners, and policy makers. USDA Forest Service NA State and Private Forestry. NA-TP-02-05. <http://www.masswoods.net/pdf/DiameterLimitCutting.pdf>

McGill, D. W. and T. M. Schuler. 2003. USDA Forest Service farm woodland case study: 50 year results from West Virginia. 2003. page 64 – 74 in Proceedings 13th Central Hardwood Forest Conference, Urbana, IL. Edited by J. W. Van Sambeek, J. O. Dawson, F. Ponder, Jr., E. F. Lowenstein, and J.S. Fralish. USDA For. Serv. Gen. Tech. Rep. NC-234. 565 p. <http://nrs.fs.fed.us/pubs/ch/ch13/CHvolume13page064.pdf>

Nyland, R. D. 2005 Diameter limit cutting and silviculture: a comparison of long-term yields and values in uneven-aged sugar maple stands. *North. J. Appl. Forestry* 22(2): 111-116.

Sokol, K. A. M. S. Greenwood, and W. H. Livingston. 2004. Impacts of long-term diameter-limit harvesting on residual stands of red spruce in Maine. *North. J. Appl. Forestry* 21(2): 69-73.

Stringer, J. 2008. Selective harvesting part one: sustainable management or high-grading. *Kentucky Woodlands Magazine* 3(2) 1-3. <http://www.ca.uky.edu/KYWoodlandsmagazine/Past.php>

Adopted by NYFOA Board 2/28/09