

**WISCONSIN FOREST PRACTICES STUDY  
COUNCIL ON FORESTRY - SILVICULTURE SUB-COMMITTEE RECOMMENDATIONS  
MAY 18, 2017**

**Background**

The goal of the Wisconsin Forest Practices Study (WFPS) is to obtain research results which will help guide decisions and policy development for investment in forest-based manufacturing industries in Wisconsin, while ensuring that social and ecological benefits provided by Wisconsin's forest remain viable for future generations. ( <http://www.wisconsinforestry.org/initiatives/current/forestry-practices-study> )

The topics addressed by the Council on Forestry's WFPS Silviculture subcommittee historically fit under the WFPS subject area of *"What are the economic and ecological consequences (costs/benefits) of selected aspects of forest policies, regulations and guidelines in Wisconsin?"*.

Forest management and timber harvests in Wisconsin are conducted in the context of a complex array of policies, regulations and guidelines. WFPS project administrators initially sought proposals for research on selected and explicitly defined aspects of this array of policies, regulations and guidelines that have been identified by loggers and / or forest managers as economically burdensome. Such aspects include, but are not limited to, (i) extending rotations beyond economic maturity in aspen and red pine stands; (ii) retention of large trees past economic maturity in natural hardwood stands; and (iii) seasonal and weather-related restrictions on timber harvest operations. (Wisconsin Forest Practices Study - Request for Proposals 1.0 <http://www.wisconsinforestry.org/files/practicesStudy/RequestForProposals.pdf> )

The three aspects (i, ii and iii above) were identified as top concerns in a WFPS Forest-Based Manufacturing Industry Stakeholder Workshop, held in July 2014. Meeting participants identified and ranked WDNR policies, guidelines and regulations that were economically burdensome and negatively impacting the forest industry. [http://www.wisconsinforestry.org/files/practicesStudy/stakeholderMeeting\\_20140716.pdf](http://www.wisconsinforestry.org/files/practicesStudy/stakeholderMeeting_20140716.pdf)

Consequently, the WFPS administrators accepted a project proposal titled *"An Economic and Ecological Analysis of: Northern Hardwood Single-Tree Selection Order of Removal Procedures and Evaluation of Red Pine Plantation and Aspen Forest Type Rotation Ages*, authored by Forrest Gibeault, Steigerwaldt Land Services, Inc., et al. [http://www.wisconsinforestry.org/files/practicesStudy/WFPSTopic2\\_Final\\_3-31-16.pdf](http://www.wisconsinforestry.org/files/practicesStudy/WFPSTopic2_Final_3-31-16.pdf)

The charge for the Silviculture subcommittee is to evaluate the recommendations (listed below) generated by earlier WFPS review committees and provide actionable strategies for implementation and resolution of those recommendations. <http://www.wisconsinforestry.org/files/practicesStudy/silviculturalConsiderationsNorthernForestTypes.pdf>

The top three silviculture recommendations identified at the October 15, 2016 WFPS all committee meeting included:

- Explore "Order of Retention" concept and tree harvest at economic rotation maturity in the decision-making process.
- Rotation age sideboards should be wide enough to accommodate a wide range of land owner objectives.
- Improve forester training, especially related to tree quality assessment, order of retention, and northern hardwood management principles.

The committee's recommendations follow:

## Northern Hardwoods Order of Removal

### Opening Statement

The Gibeault WFPS study included an extensive field examination of 30 northern hardwood harvest sites on State, County Forest, and private Managed Forest Law lands where individual trees were marked for harvest. These sites represented the typical northern hardwood stand condition in Wisconsin on these ownerships. The study modeled scenarios that altered the tree selection methodology, emphasizing economic considerations within the sideboards of accepted sound forest science. These modeled scenarios included considerations for removing poor quality growing stock, harvesting economically mature trees, and fostering “crop tree” development. The better quality trees with the best opportunity to grow and exhibit maximal rate of value growth were retained as crop trees. The modeled outcomes for one harvest event yielded increased economic returns and improvements in tree rate of value growth for the modeled scenarios as compared to the existing tree harvest selection observed in the sampled harvest sites.

The subcommittee recognizes there are many suitable silvicultural systems appropriate for managing northern hardwoods. The focus for these recommendations concerns the single tree selection system and the WDNR established Order of Removal (OOR) guidelines.

### Recommendations

1. The WDNR should transition from guidelines and policy based on the order of removal as established in the WDNR Silvicultural Handbook and establish guidance, as opposed to rules, for individual tree selection in northern hardwood stands. Guidance should be adaptable to landowner objectives, consider both biological and economic concerns, and foster development of crop trees while maintaining minimum basal area stocking levels consistent with current northern hardwood silvicultural science.
2. The definition for the term “crop tree” should be revised and expanded to include various elements that incorporate landowner objectives whether they are economic, ecological, or social. A crop tree will have the potential to increase in value by a jump in grade or increase in ecological function; having not yet achieved its maximum economic, ecologic, or social potential. The tree will exhibit quality with future potential. When the potential for increase in value growth peaks, it should no longer be considered a crop tree and should be eligible for harvest, subject to landowner objectives.
3. Develop a marking guide that accounts for variable stand conditions, along with the current typical Wisconsin northern hardwood stand structure, and that includes considerations for the range of crop tree definitions and landowner objectives.
4. Provide training to foresters marking single tree selection harvests to increase knowledge on management designed to foster development of crop trees. Multi-stakeholder involvement with developing and providing the training in accepted

methods to promote crop trees will be important to ensure a range of sustainable practices are considered.

5. Provide training for foresters that write MFL plans and timber harvest prescriptions, and DNR foresters who may be required to inspect forest tax law harvests, so they understand crop tree definitions and revised marking guides. This would also include training on how to better communicate plans and prescriptions and how to correctly state the intended outcome of a specific harvest method.
6. Move away from the heavy reliance on uniform basal area and basal area stocking as criteria for adherence to forest tax law plans or prescriptions. Rather, the focus should be on retention and increase of stem quality, along with considerations for landowner objectives, while maintaining minimum basal area stocking levels consistent with current northern hardwood silvicultural science including accounting for natural regeneration needs and residual stem quality factors.

### Aspen and Red Pine Rotation Age

#### Opening Statement

The Gibeault report, prepared for the WFPS, simulated yields and economic returns from typical even-aged management of aspen and red pine plantations on a representative range of site quality classes in Wisconsin. The study concluded that economic yield is related to site quality and that the current WDNR rotation length guidelines likely restrict the realization of that economic yield with impact more pronounced on the highest quality, most productive sites.

#### Recommendations

1. Establish guiding principles that allows flexibility in rotation ages depending on site potential. Guiding principles should recognize that the timing to rotate a particular stand can be influenced by unique stand conditions and other considerations such as land owner objectives, operability, markets, economics, social and ecological considerations.

Respectfully submitted by the Council on Forestry WFPS Silviculture subcommittee members:

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