Management of the Farm Woods

Purdue University Cooperative Extension Service

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MANAGEMENT OF THE FARM WOODS*

The objective of farm woods management is to protect and grow as many high-quality, vigorous trees of desirable kinds as the woods will support, and to properly harvest and utilize these trees without damage to the soil when they become mature.

If the woods area is profitably managed, it can produce an annual crop the same as corn, wheat or soybeans. The woods differ from other crops in that the annual growth does not have to be harvested each year. Many farmers, instead of making an annual cut, let the tree growth accumulate for three to five years, or even more.

Under good management, Indiana farm woods will grow at least 200 board feet of wood per acre per year. This is equal to a tree 20 inches in diameter at a point 4.5 feet above the ground (diameter breast high, or D.B.H.). Growth is usually figured on all trees over 12 inches DBH, although the smaller trees which will grow into the 12-inch class during the period are also included. This is because a tree is not considered to be of merchantable size until it reaches 12 inches DBH. Consequently, the more trees over 12 inches there are on an acre, the more merchantable growth there will be, unless the trees are too crowded. Usually these trees should not be closer than 15 feet apart.

In addition to having a large number of trees, the trees should vary in size all the way from one year old seedlings to mature trees. When all sizes of trees are present, the cutting of the mature trees annually, or periodically, provides growing space for new seedlings and more room for the other young trees. Also, there will be other trees which will mature during the next year, or the next cutting period.

Several studies have been made to determine how many trees should be in an acre of farm woods. One study shows the following results:

* Prepared by W. L. Fix, and E. J. Lott, Extension Foresters, as Lesson IV of the Conservation Education Series, Forestry Lessons.
Number of Trees by Sizes on a Well-stocked Average Acre
(Table from Soil Conservation Service Forestry Handbook)

<table>
<thead>
<tr>
<th>D.B.H. (inches)</th>
<th>Number of Trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>60</td>
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<tr>
<td>6</td>
<td>40</td>
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<td>8</td>
<td>30</td>
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<td>3</td>
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<td>22</td>
<td>2</td>
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<tr>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>26</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>194</strong></td>
</tr>
</tbody>
</table>

A number of Indiana studies show that the well-managed farm woods should have from 110 to 130 trees per acre over six inches in diameter. Forty percent, or about 50, of these should be over 12 inches in DBH.

Foresters classify timber stands into two main groups, even-aged stands and uneven-aged stands. In the even-aged stands, the trees are approximately all the same age. These stands are quite often the result of clear cutting in past years and are most frequently found in river bottoms. The uneven-aged stands contain trees of various sizes and ages scattered throughout the woods. Most of the upland timber stands in Indiana are this type. The uneven-aged stand is best suited for annual or frequent cuts which remove defective, low-value and mature trees. Quite often in the past these uneven-aged stands have been "high-graded," which means the largest, most vigorous trees of the better species have been removed at each successive cut. This destructive practice results in leaving the cull, defective and low-value trees to make up the future stand. This type of cutting is just the reverse of good woods management.

A good woods is like having money in the bank. Every year it increases in value according to the rate of tree growth. This is similar to receiving interest on money in the bank. Records of farm woods in Indiana commonly show an annual return of six to eight percent interest on the capital value of the woods. This is a considerably better return than that received from the same amount of dollar capital in the bank at present interest rates.

As the woods is improved by cutting defective and low-quality trees and the careful harvesting of mature trees, the value of the annual growth of wood increases. This is because the growth is put on higher quality and more valuable trees. For example, the 200 board feet of annual growth per acre of low-quality black oak, elm, sycamore, hickory, and beech would likely be valued at $10 to $15 per thousand board feet, or approximately $2.50 per acre. The same 200 board feet of growth in a well-managed stand of oak, tulip, ash and maple would likely be worth more nearly $40 to $50 per thousand board feet, or approximately $9.00 per acre. This $2.50 to $9.00 per acre increase in the value of the growth points up the importance of good farm woods management.
As you will see in Lesson V, not all of the profit in farm woods management is restricted to just the growth each year. The farmer can do his own logging in the woods and earn an additional $10 per thousand board feet, or more, when he sells timber.

Steps to Good Woods Management

A number of things are necessary to reach the objectives of good farm woods management. The following steps should be followed one at a time as they apply to a particular woods.

1. The first requirement is complete protection from livestock of all kinds. Continued grazing destroys the woods. It is impossible to raise good trees and livestock on the same piece of ground. Livestock destroy the young seedlings thus removing future crop trees. Livestock also damage older trees by trampling, rooting, compacting the soil and opening up the stand to drying winds. Remember, that from the standpoint of good land use, there is no such thing as woods pasture.

2. Keep fire out of the woods. Fires kill timber and cause decay in the trees which are not killed. Plow and disc a "fire lane" 10 to 12 feet wide between the woods and possible sources of fire, such as railroads and highways. Keep the lane free of weeds, grass and other debris. Don't burn brush in the woods; let it rot into the soil.

3. Spend a few days during the year to improve the timber. One or two acres can be improved each year until the entire woods is covered. Common improvement work includes:

   a. Cut grape and ivy vines from the good trees. Vines can kill or deform trees. The vines on the poor trees, especially near the woods border, should be left for wildlife food.

   b. Girdle, cut or poison cull trees that cannot be used on the farm or sold. Taking these trees out of the woods will give other trees more room to grow.

   c. Girdle or cut white elm, pawpaw and other species of low commercial value. Also, remove such trees of poor species since they may be overtopping better trees.

   d. Be sure that low value or undesirable trees are removed during the harvest cuts. Some of these bear large seed crops and are apt to seed into the openings made by cutting.

The harvesting and utilization phases of farm woods management will be discussed in Lessons V and VI.

Suggested Activities

1. Find out from your county fire warden, nearest forester or county agent how many woods burned in your county during the past year, and also the number of fires and acres burned.

2. Make a survey of your home township, and find out how many of the farm woods are at present being grazed.
3. How many Classified Forests are there in your county? Your County Agent can help you find this information.

4. Find the names and duties of your district and county fire wardens.

5. Make a list of woods improvement practices needed in farm woods near your home or on your own farm.

References

1. "Five Pointers on Farm Woodlands," Mimeo F-47, Purdue University.


3. "Timber Stand Improvement," Mimeo F-41, Purdue University.


5. "Forests of Indiana and Their Importance," Extension Circular 524, Purdue University.

Further information or additional copies of this mimeograph can be obtained through your County Agent or nearest forester, or the Department of Forestry and Conservation at Purdue University, Lafayette, Indiana.