



Fact Sheet 625

## Developing a Forest Management Plan: The Key to Forest Stewardship

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### The Elements of a Successful Forest Management Plan

A forest management plan is a working guide to good forest stewardship that allows the landowner to maximize the wildlife, timber, recreation, aesthetic value, and other benefits of owning woodland. A good plan combines the natural and physiographic characteristics of the woodlot with the interests and objectives of the owner to produce a set of forest management recommendations. This plan, if followed, should transform the forest into one that is enjoyable and productive for the owner and for future generations.

A forest management plan does not need to be a long, complicated document filled with statistics and confusing jargon; the best plans are brief and to the point. Although formats vary, a sound and useful plan contains these essential elements:

1. landowner objectives for the woodlot;
2. individual maps denoting the property's location, boundaries, forest stands, and soil types;
3. forest inventory data;
4. descriptions and recommendations for each forest stand; and
5. a chronology of recommendations.

Plans are typically written for a 10- to 15-year period but should be updated about every 5 years. We will follow a sample forest management plan for the Becker farm to illustrate the steps in developing a plan.

### Landowner Objectives

There are many reasons for and many benefits to be derived from owning woodland. Most owners value the privacy and aesthetic beauty their forests provide. Many people enjoy bird-watching, hunting, fishing, cross-country skiing, and other forms of forest recreation. Some landowners want an annual supply of fuelwood for their own use or for some periodic income. The list of potential benefits is long.

No one can develop a forest management plan that is right for you without knowing what benefits you value and what ones are unimportant to you. Management recommendations for a given stand of trees can vary dramatically depending upon the objectives. Priorities provide the framework for developing forest management recommendations. Without them, a forester can write a plan only by making assumptions about your priorities or by imposing his or her own. Bring up goals and objectives early in conversations with the foresters and other natural resources professionals you contact.

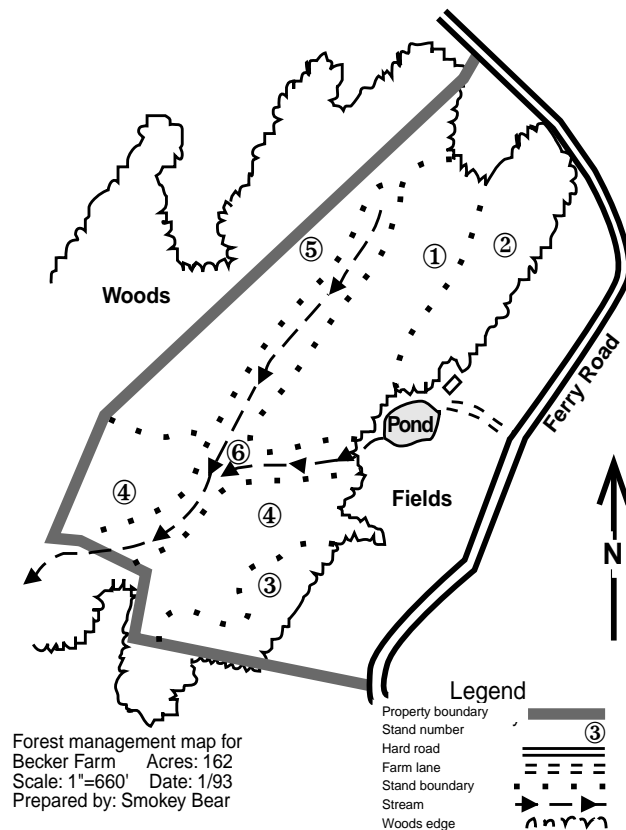
Take a holistic view of forest management, and develop plans that consider commodity and non-commodity benefits. Management for wildlife, rare and endangered plants and animals, recreational opportunities, scenic vistas, sites of archaeological significance, and areas of future development are all part of natural resource man-

agement. These factors should be considered in developing your landowner objectives for a forest management plan.

## Maps

A workable forest management plan should include the following maps:

**Location map.** A location map enables someone who is unfamiliar with your property to find it from a major highway.



### Stand type and age

- ① Yellow poplar—50 years
- ② Ash, cherry, locust, and Virginia pine—45 years
- ③ Virginia pine—25 years
- ④ Red maple, red oak, white oak, and yellow poplar—two-aged
- ⑤ Ash, red oak, and yellow poplar—12 years
- ⑥ Ash, red oak, and yellow poplar—50 years

**Figure 1.** A forest stand map of the Becker farm.

**Forest stand map.** A forest stand map identifies the different forest stands on a woodlot according to their major species and the size of dominant trees (Figure 1). A forest stand is a group of trees that, because of their similar age, condition, past management history, or soil characteristics, are logically managed together. In many cases, this map will be drawn from an aerial photograph and will include roads, streams, ponds, houses, fields, and other landmarks.

**Boundary map.** A boundary map usually is a survey map that shows the compass direction and distance along each boundary. This map can be made from a deed description verifying the corners and other landmarks that define the boundary, such as fence lines or stone walls. A boundary map is essential if you intend to actively manage the property. This map is often combined with the forest stand map. (Woodland Management Series Fact Sheet 619 "How To Determine Your Property Boundaries" describes in detail how to locate and mark boundaries.)

**Topographic and soils maps.** Other valuable maps are topographic maps and soils maps. Topographic maps show slopes, roads, streams, and other important landmarks. Soils maps help to delineate productive soils for tree growth. These are available from your local Soil Conservation Service office.

Remember that any map you draw should have a scale (for example, 1 inch = 660 feet) and a North arrow.

## Forest Inventory Data

A forest manager must inventory his or her forest periodically to determine its age and condition, what has been removed by cutting or mortality, and what new growth has occurred. Forest inventories provide the data to make sound, scientific management decisions that yield the desired results.

The following are some important points about inventories:

- It is virtually never practical or cost effective to inventory the entire forest. Rather, a random sample of the forest should be inventoried and the results applied to the rest of the forest.
- The size of the sample necessary for good decisionmaking varies from stand to stand according to the quality of a given site and intensity of management. Rarely, for example, is it sensible to pay for a highly precise timber volume inventory in a dense, young red-maple swamp or on a

thin-soiled, ridgetop oak stand with little economic value. On the other hand, serious and costly mistakes can be made without good inventory data on fertile sites containing high-quality oak, ash, and pine. Also, if the landowner's major objectives are recreation and aesthetics, the intensity of sampling would be less than for timber and wildlife management objectives, which require more active management.

•Inventories tell you what the situation is right now; however, trees grow, trees become sick, trees die, and trees are harvested. The forest is a living, dynamic system that changes over time. Inventories, therefore, need to be repeated periodically (preferably every 5 years) and the management plan updated to reflect new conditions.

## Stand Descriptions and Recommendations

For each forest stand identified on the forest stand map, there should be a description and a set of management recommendations.

The stand description and recommendations can be in the form of a chart, a paragraph, or a combination of the two. The description should contain information on the age and condition of

the stand and the quality of the growing site. Management recommendations that ignore these factors are not likely to be useful. Table 1 shows the Becker farm's overall management objectives as well as the stand description and associated management recommendations for the first stand.

## Chronology of Recommendations

A chronological listing of recommended management activities for the next 10 to 15 years is a valuable reference and should be included in any forest management plan. This can be updated and changed as needed, but it provides a long-term view. The list should include the following:

- the year the practice will be completed,
- the stand and number of acres for which the plan is recommended,
- a brief description of each recommended activity, and
- an estimate of the anticipated yield associated with each practice.

Table 2 shows the first 6 years of the 15-year management practice schedule on the Becker farm.

**Table 1. Management objectives for the Becker farm and stand description and recommendations for the first stand**

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Objectives for Becker farm: To manage for a variety of game and nongame wildlife while providing periodic income from the sale of timber and a supply of firewood for personal use.

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### Description of Stand #1

Acres	15
Dominant species	Yellow poplar with scattered ash, oak, and red maple
Timber size	6- to 12-inch poles
Age in years	Even, 50 years
Stocking	High
Desirable species	70 percent
Undesirable species	30 percent
Site growth potential	Good

This maturing stand originated from an abandoned field about 50 years ago. The slopes are minimal, ranging from 5 to 10 percent, and access to the area is possible on old woods roads and trails. The stand is overstocked with trees and the growth rate is slowing. Use by wildlife species is minimal due to the lack of a developed understory and the lack of large, mast-producing trees or den trees. The potential to produce high-quality timber and enhance wildlife habitat is good.

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### Recommendations for Stand #1

A thinning should be done using a crown-touching release. This will allow sunlight to stimulate herbaceous growth on the forest floor for wildlife and will accelerate the growth of the best mast-producing and timber trees. Sawtimber-sized trees can be cut and sold using the services of a professional forester. Pole-sized trees can be sold for firewood or used for personal needs. Unused trees can be cut and left to lay or girdled to produce dead, standing snags that can be used by woodpeckers and cavity nesters.

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**Table 2. The first 6 years of the 15-year management practice schedule for the Becker farm**

Completion Date	Stand Practice	Number of Acres
1994	1	34
	Thinning (crown-touching release)	
1995	4	62
	Grapevine control on crop trees	
1996	3	11
	Harvest Virginia pine/Replant	
1997	2	24
	Thinning (crown-touching release)	
1998	all	—
	Stabilize and clear roads and trails	
1999	5	28
	Select harvest	

## How To Get Started

The best way to start a forest management plan is with a project forester from the Maryland Department of Natural Resources, Forest Service. The forester will tour your woodlot and help you develop forest management objectives based on your interests and goals, as well as the ability of the land to meet them. The forester can conduct an inventory of your woodland and develop a written management plan in cooperation with wildlife and fishery biologists, ecologists, and other natural resources professionals. The forester also can help you implement the plan. This assistance may include recommending private consulting foresters who can provide timber sale and management services for a fee.

If you are considering harvesting forest products, use the services of a professional forester. For more information, see the Woodland Management Series Fact Sheet 628 “Marketing Forest Products.” Consultant foresters also can

develop a written management plan with much of the cost paid by the Stewardship Incentive Program. A list of registered consultant foresters is available from your county Extension office. For more information on services offered by State and private natural resources professionals, see the Woodland Management Series Fact Sheet 624 “Where To Get Help.”

Several other Extension publications related to forest management are available from your county Extension office. The Woodland Management Series of fact sheets addresses a variety of forestry topics, in addition to where to get help, such as how to measure your forest, explanations of forest terminology, and resource lists of alternative income opportunities. The Wildlife Management Series of fact sheets provides information on individual wildlife species (game and nongame), basic wildlife management, recreational access, and other topics. Contact your county Extension office for more information on either of these fact sheet series.

Remember, a plan is worthless unless it is implemented. As a forest steward, it is your responsibility to take the necessary steps to care for your woodland. Be an example to others. To learn more about forest management, call your county Extension office for information on educational programs or ask your forester.

## Adapted From

M. Beattie, C. Thompson, and L. Levine. 1993. **Working With Your Woodland: A Landowner’s Guide.** University Press of New England; Hanover, New Hampshire.

T.J. McEvoy. 1987. **Developing a Forest Management Plan.** Bulletin Br 1353. University of Vermont Cooperative Extension Service; Burlington.

This fact sheet is part of a series on woodland management. If you would like information on additional topics in the series, contact your county Extension office.