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**A Plan for Developing
and Managing
Your Forest**

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Circular 1312**

**University of Illinois
at Urbana-Champaign
College of Agriculture
Cooperative Extension Service**





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A Plan for Developing and Managing Your Forest

Foreward

This outline for a forest management plan raises questions about your woodland. Your answers serve as the basis for your forest management plan. Some questions in this outline are not applicable to all situations and may be bypassed; others require professional help for their answers. As your objectives for and desired benefits from your forest change over time, you may need to revise your answers. Consequently, this outline is a working copy of your plan, subject to periodical changes. The decisions you make will have long-lasting effects on your woodland.

A glossary of terms commonly used in forestry appears at the end of this outline

for your convenience. The addresses and phone numbers of foresters who can help answer questions about your woodlands are listed on page 19. You will also notice a map of the districts of Department of Conservation (DOC) district foresters in Illinois. For additional guidance in developing a forest management plan, you may also refer to Farm Your Forest, Circular 1291 of the Illinois Cooperative Extension Service, which is available from the Office of Agricultural Communications and Education, 69 Mumford Hall, University of Illinois at Urbana-Champaign, 1301 West Gregory Drive, Urbana, Illinois 61801; the phone number is (217)333-2007.



Goals for the Plan

Good results occasionally come from unforeseen bits of good fortune, but more often they come from careful planning. Just as we rely on road maps to facilitate travel, we make plans to complete many worthwhile projects. Architects draw plans, farmers plan crop rotations, and tree farmers develop plans in accordance with their goals for their forests.

Certain aspects of these plans may seem so obvious that listing them would appear unnecessary. These lists, however, clarify an owner's objectives for a forest development plan and help those unfamiliar with them follow and review the plan away from the site.

What are your objectives? What do you want to obtain from your woodlands? (Check

the appropriate items below and fill in the blanks if necessary.)

The need for a forest management plan should not be taken lightly. Besides helping the tree farmer decide on the details necessary for long-range objectives, under the Illinois Forest Development Act, such a plan can afford significant real estate tax reductions and cost-share opportunities if it has been approved by a state forester. For additional details on tax relief and cost-share programs, consult a state forester. Perhaps more important is that this long-term plan will guide other family members or owners in managing an ongoing enterprise, should they be forced to assume the responsibility.

Some common goals of tree farmers include the following:

- Enjoying the wildlife and recreational benefits of a forest
- Living in a new home in a woodland
- Establishing a vigorous and healthy natural stand
- Planting open areas to trees
- Generating income
- Increasing the diversity of wildlife
- Improving scenic values
- Other goals (specify here) _____

Date of plan _____

Date of first revision _____

Date of second revision _____

I. Understanding Your Woodland

By filling out this plan, you will better understand your woodland.

A. Owner

1. Name _____

2. Address _____

3. Phone _____

B. Mortgagee

1. Name _____

2. Address _____

3. Phone _____

C. Tenant

1. Name _____

2. Address _____

3. Phone _____

D. Consultant, manager, or state forester

1. Name _____

2. Address _____

3. Phone _____

E. Legal designation of woodland acreage

F. Common directions to the property

G. Total acreage, woodland, and plantation

H. Condition

1. Major buildings

2. Fences

3. Trails

4. Roads and access

5. Water courses and ponds

I. Soil descriptions (For soil descriptions, consult county soil surveys or visit the Soil Conservation Service.)

1.

2.

3.

J. Productivity ratings for these soils

1.

2.

3.

K. General site descriptions for these soils

1.

2.

3.

L. Current vegetative cover of these sites

1.

2.

3.

M. General forest description

1. Acres of open area to be planted _____
on the following dates _____
2. General plan for acres of low-valued trees and brush
 - a. Acres to be converted _____ starting in (year) _____
 - b. Acres to be maintained for wildlife habitats _____
starting in (year) _____
 - c. Number of open areas about one-half acre in size to be created _____
starting in (year) _____
3. Acres of good growing stock _____
 - a. Short-term treatments _____

 - b. Long-term treatments _____

4. Board feet
 - a. Good growing stock _____
 - b. Medium growing stock _____
 - c. Mature stock in need of harvest _____
5. Cost basis for taxes
 - a. Date forest was acquired _____
 - b. Value of standing timber _____
 - c. Total value of property _____
6. Sketch or aerial photo of woodland

II. Plans for Tree Planting

Tree planting can improve the aesthetic, economic, and ecological value of your estate.

A. Influence of the planting site on the choice of species

1. If a hard pan exists, at what depth does it occur? (inches) _____
2. Is the drainage poor or adequate?
 - a. Internal _____
 - b. Surface _____
 - c. Subject to flooding _____
3. Is site preparation necessary to eliminate interfering vegetation?
 - a. Estimate the time required to prepare the site.

 - b. List materials that must be purchased to prepare the site.

 - c. List the materials that may be rented to prepare the site.

4. If disease is nearby, list any possible effect on new plantings.

5. If destructive insects are nearby, will they affect new plantings?

6. If destructive wildlife is present, what effect will they have on new plantings?

7. What is the wildfire potential? _____
8. What is the erosion potential? _____

B. Influence of environmental factors on the selection of species and procedures

1. What is the annual precipitation? _____
2. What is the annual minimum temperature? _____
3. Will the entire site receive full sunlight? _____

C. Selecting equipment on the basis of the size and condition of the area to be planted and on the species of tree

1. Is the area suitable for a mechanical planter? _____
2. What is the source of the planter you will use? _____
3. What is the source of the tractor you will use? _____
4. Which planting tools will be needed?
 - a. Buckets? _____
 - b. Dibble bars? _____
 - c. Grub hoes? _____

- d. Shovels? _____
- e. Augers? _____
- 5. How will competing vegetation be controlled? _____

- 6. Will herbicides be used? _____
 - a. Which herbicides? _____
 - b. What equipment will be required for herbicide application? _____

D. Selecting planting stock (Points a, b, and c under "D.1" correspond to a, b, and c under D.2 D.3, D.4, D.5, and D.6.)

- 1. Which species will you use?
 - a. _____
 - b. _____
 - c. _____
- 2. Which varieties or seed sources will you use?
 - a. _____
 - b. _____
 - c. _____
- 3. What is the age of the stock?
 - a. _____
 - b. _____
 - c. _____
- 4. What is the height of the stock?
 - a. _____
 - b. _____
 - c. _____
- 5. What is the caliper of the stock?
 - a. _____
 - b. _____
 - c. _____
- 6. What, if any, special planting procedures will the stock require?
 - a. _____
 - b. _____
 - c. _____

7. Will any stock require a herbicide application? _____

a. Which stock and which herbicides? _____

b. When will the application(s) be made? _____

c. Will any follow-up applications be necessary? _____

8. If necessary, how will the stock be stored?

a. _____

b. _____

c. _____

9. How many trees will be purchased?

a. _____

b. _____

c. _____

10. When will you plant these trees?

a. _____

b. _____

c. _____

11. What are the sources for your planting stock?

a. _____

b. _____

c. _____

Forest tree planting stock can be obtained from the Division of Forest Resources of the Illinois Department of Conservation at 524 South Second, Springfield, Illinois 62706; (217)782-2361. Commercial sources of tree planting stock include the following companies (no endorsement is suggested or implied).

Sources of Tree Planting Stock

Armintrout's Evergreen Nursery
1156 Lincoln Road
Allegan, MI 49010
(616)673-6627

Land-O-Pines
1056 North Schoenherr Road
Custer, MI 49405
(617)757-2141

Cascade Forestry Service
Route 1
Cascade, IA 51033
(319)852-3042

Mellinger, Inc.
2310 West Southwest Range Road
North Lima, OH 44452
(216)549-9861

Flickingers' Nursery
Sangamore, PA 16250
(412)783-6528

Musser Forest
P.O. Box 340M
Indiana, PA 15701-0340
(412)465-5685

Forrest Keeling Nursery
Highway 79
Elsberry, MO 63343
(800)332-3361

Needlefast Evergreens
4075 Hansen Road
Ludington, MI 49431
(616)843-8524

Hensler Nursery, Inc.
Route 2, Box 52
Hamlet, IN 46532
(219)867-4192

Nepco Lake Nursery
Port Edwards, WI 54469
(715)887-5301

Illinois Forest Products Company
Route 1
Beardstown, IL 61618
(217)323-4540
(walnut only)

Van Pines, Inc.
West Olive, MI 49460
(616)399-1620

E. Summer follow-up control of competing vegetation

1. What actions are planned as summer follow-up measures to control competing vegetation? _____

2. What equipment will be necessary for this procedure? _____

3. After September 1, what percentage of the stock survived? _____

4. Is this amount of survival acceptable? _____

(Depending on the original spacing, species selected, and other factors, at least 70 percent of the original stock should survive.)

5. Do you plan to replant? _____

III. Plans for Growing Trees

A. Cultural practices and timber stand improvement (TSI)

Silviculture is as important to the woodland owner as agriculture is to the farmland owner. Left untended, a plantation will develop much the same way as an untended lawn or garden. TSI is basic to the care and management of a forest.

To maintain enthusiasm for and the enjoyment of management tasks, they should be made practical. For many people, they are weekend recreational activities.

Many management practices needed for caring for young plantations and for improving natural stands are the same. This section includes practices required for both types of woodlands.

A professional forester should be consulted to inventory or cruise your natural forest or plantation. This inventory will provide the basis for recommendations and decisions concerning your forest.

1. Considering the size of your woodland and the type of TSI you will perform, how long will the improvement of your woodland take?

My tract will be divided into (number) _____ compartments of (number) _____ acres each. If I practice TSI on (number) _____ compartments per year, the improvement of my woodland will be complete in _____ years. Compartment boundaries will be as follows:

_____.

2. In view of the fact that in young stands or plantations from age two through about age five, control of competing annual weeds may be necessary for both survival and maximum development of tree saplings, do you plan to use herbicides for this control? If chemicals are employed, take the examination necessary to acquire a permit for buying and applying restricted-use pesticides.

Applications of (name of herbicide) _____ will be made in young stands or plantations with (type of equipment) _____

on the following date(s): _____

_____.

3. Given that mowing between rows will supplement the control achieved by chemical application, how will you control volunteer shrubs and trees?

In a natural stand, I will remove crowded or less desirable trees by the following chemical or mechanical methods: _____

_____.

4. Can any of the cut trees be used as fuelwood? _____

I estimate the available number of cords of fuelwood to be _____.

5. In natural stands, if you have openings wider than the height of adjacent trees, you may consider planting trees in these areas. You may want to use hardwood seedlings in areas where timber production is important. You may decide to allow natural development or plant a grass-legume mixture for the benefit of wildlife. In this case, you should consider how you will preserve the edge effect of this opening.

I plan to use the openings in the following manner: _____
_____.

To maintain the valuable edge effect of this opening, I will control invading woody vegetation by checking the area _____ times a year and by using chemical or mechanical measures on the following dates: _____
_____.

6. Staking and straightening young trees are sometimes beneficial. How much time do you plan to allow for staking and straightening young trees? Some trees will seem impossible to correct. The hardwoods may be cut back to the groundline and allowed to sprout. Save the best sprout in a clump; the others should be cut out.

I will budget _____ days per year for staking and straightening trees.

7. Do you intend to fertilize certain trees? For example, fertilization of young walnut trees in plantations or natural stands will usually increase their growth.

On selected crop trees, I will apply _____
_____ at five-year intervals.

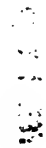
8. How will you control the increased competition from associated vegetation that may result from fertilization of the desired trees?

This vegetation will be controlled with the following herbicide: _____
_____.

9. Which trees will receive intensive cultural and pruning practices? Select potential crop trees before the total pruning heights are achieved. Sometime before age 25, identify 100 well-spaced, straight, dominant, and vigorous trees per acre. Label them with a paint mark at about diameter breast height (dbh). For economy, only those trees should receive intensive cultural and pruning practices.

10. Early pruning to remove lateral branches and to encourage the development of a central stem may be necessary in plantations and natural stands of young saplings and poles of the more valuable species. How much time will you set aside for pruning? This practice eliminates knots in the logs and increases the quality of the final product. Ultimately the trees may be pruned to a height of 17 or 25 feet, but no more than a third of the live crown should be removed in any five-year period.

I will budget _____ days per year for pruning.



11. Depending on markets and growth rates, needed early thinnings may be unprofitable. How often will you re-mark crop trees and select other trees for thinning? At each thinning, some crop trees may also be removed as their status diminishes. Early products from thinning operations may include fuelwood, pulpwood, posts, poles, and small sawlogs. The types of products and their values will depend on local markets and economic conditions.

I will re-evaluate crop trees and select other trees for thinning every _____ years.

B. Pests and other conditions

1. What measures will you take to eliminate problems with pests? Animal pests can become major problems. Birds will sit on the young pine leaders and break them. These damaged trees may be helped by tying up a side branch to form a new leader. Poles that are higher than the trees create artificial perches, which relieve some of this problem.

To control damage to trees from birds, I will

_____.

2. What measures will you take to eliminate problems with mice and rabbits? Mice and rabbits are common pests that can be controlled. Natural predators will keep populations at a low level in clean plantations.

To control damage to trees from mice and rabbits, I will

_____.

3. How will you protect your woodland from domestic livestock? Protection from domestic livestock is necessary because these animals scar exposed roots, compact the soil around trees, damage bark, and destroy hardwood reproduction.

To protect my woodland from domestic livestock, I will need _____ rods of _____ fence. This fence will be installed on (date) _____ at a cost of \$ _____.

4. How will you control damage to your woodlands from deer?

To protect my woodlands from deer, I will

_____.

5. How will you protect your forest from wildfires? Fire from across the field, adjacent highways, or railroads can quickly destroy a forest.

I will control burning on my property and protect it from encroaching fires by

_____.

The fire tools now available are

_____.

The phone numbers of the closest fire departments are

_____.

6. How will you protect your forest from theft? Theft of young trees and valuable veneer logs is a concern of many. Absentee owners may request relatives or neighbors to be alert to unusual activities. A special effort to become acquainted with neighbors might prove invaluable.

To control theft, I have asked _____ to be my local lookout. This person's phone number is _____, and his/her address is _____.

7. How often do you plan to observe the condition of your forest?

I will inspect my woodland every _____ weeks for trespass, disease, insect damage, and unexpected developments.

IV. Foresters Who Can Help Plan Your Timber Sale and Harvest

Trees naturally grow old and die. They cannot be preserved forever. If we do not harvest our crop, Mother Nature will in a wasteful manner through decay, storms, and diseases. As we "cash in" our main crop of mature trees, our objective is to ensure a future crop of desirable species. Proper harvesting is a necessary step in renewing this resource.

A. DOC district forester

In addition to helping you develop your forest management plan, a DOC district forester can assist in selecting trees to be harvested. Because a timber sale is not a frequent experience for most sellers, seeking professional help from a DOC district forester is highly recommended. This forester's office can provide a list of timber buyers, a sample timber sale contract, and a timber price list. DOC foresters cannot set the value of the trees for sale, nor will they do appraisals.

My district forester is _____
Phone: _____.

B. Consulting foresters

Sometimes forest owners want to expedite a sale and cannot wait their turn in the busy schedule of the DOC district forester. In these cases, consulting foresters may be engaged for a fee.

I could also request help with my sale from a consulting forester: _____
Phone: _____.

C. Forester who is the source of photos and inventory and marketing information for your woodlands

Get aerial photos of your woodlands and inventory and marketing information relevant to a timber sale and harvest from an experienced forester because you will need to prepare a legal contract listing all conditions of the sale, advertise by mail to prospective bidders, and solicit sealed bids to be opened at a predetermined place and time. This forester can also supply you with other helpful information. Before cutters begin harvesting your timber, be certain that they are licensed and bonded and that you have collected all the money for the sale.

The details associated with conducting a sale—aerial photos of my woodlands, and inventory and marketing information—can be obtained from _____

Phone: _____



GLOSSARY

Board feet. A piece of lumber 12 inches by 12 inches by 1 inch or an equivalent piece of wood equaling 144 cubic inches. Board feet are the unit of volume of wood per acre.

Caliper. Diameter of a tree seedling stem measured just above the groundline.

Consulting forester. Private businessperson who works for a fee as a professional forester.

Cord. A stack of wood measuring 4 feet by 4 feet by 8 feet.

Crop tree. Any tree forming or selected to form a component of the final crop. Generally this is a tree selected in a young stand or plantation for carrying through to maturity.

Cruise. A survey to locate and estimate the quantity of timber on a given area according to species, size, quality, possible products, or other characteristics. Also the estimate obtained from such an assessment.

Cultural operations. A general term for activities, as a rule not directly remunerative, undertaken to assist or complete existing tree regeneration, to promote the development of a forest crop, and to minimize damage caused by felling and extraction. These activities include weeding, cleaning, unremunerative improvement fellings, girdling and poisoning of unwanted growth, vine cutting, and even controlled burning, but not other ground operations, thinning, or pruning.

Diameter breast height (dbh). The diameter of a tree measured at 4.5 feet above ground, including bark and wood. On standing trees, dbh is the height from ground level for recording the diameter of trees.

Edge. The more or less well-defined boundary area between two or more elements of an environment, such as the area between a woodland wildlife habitat and an open area.

Good growing stock (class 1). Well-formed trees with good vitality. Some of these are selected as crop trees, which are referred to as "leave" trees. Often classified simply as acceptable growing stock.

Hard pan. A hard and compacted soil layer. Tree roots have difficulty penetrating this zone.

Medium growing stock (class 2). Trees that are typically neither good nor bad at the age of the trees. This type of stock should be harvested in 10 to 20 years depending on forest conditions.

Plantation. An artificially developed stand of trees generally planted as seedlings.

Pole. A still young tree, from the time its lower branches begin to die, up to the time when height growth begins to slow down and crown expansion becomes marked.

Poor growing stock (class 3). Economically mature trees that do not provide an adequate return on investment. Often said to be unacceptable growing stock, these trees are ready for harvest in forests that have been previously unmanaged.

Rick. An amount of wood smaller than a cord. For example, a stack of wood may be 16 or 24 inches wide and labeled a 16-inch rick or a 24-inch rick. Also called a face cord.

Rod. A unit of measure equal to 16-1/2 feet.

Sapling. A loose term for a young tree no longer a seedling but not yet a pole, for example, one that is a few feet high and an inch or so in dbh, typically growing vigorously and without dead bark or more than an occasional dead branch. Many countries fix arbitrary size limits for trees designated as saplings: Australia, trees less than 6 inches

dbh; Canada, 1/2 to 3-1/2 inches dbh; India, 3 feet to the height where lower branches begin to fall; United States, 2 to 4 inches dbh.

Saw timber. Trees fit to yield saw logs, or round timber fit to yield sawn timber.

Seed source. Locality where a seedlot was collected.

Seedling. In nursery practice, a very young tree that has not been transplanted: a tree that is growing where it germinated in the seed bed.

Silviculture. The science and art of cultivating forest crops based on a knowledge of the life history and characteristics of forest trees. More specifically, silviculture is the theory and practice of controlling the establishment, composition, constitution, and growth of forests.

Site preparation. Cleaning or otherwise developing an area for the purpose of planting trees or encouraging natural regeneration.

State forester. Forester employed by the state.

State Forester. Chief person in a state forestry organization.

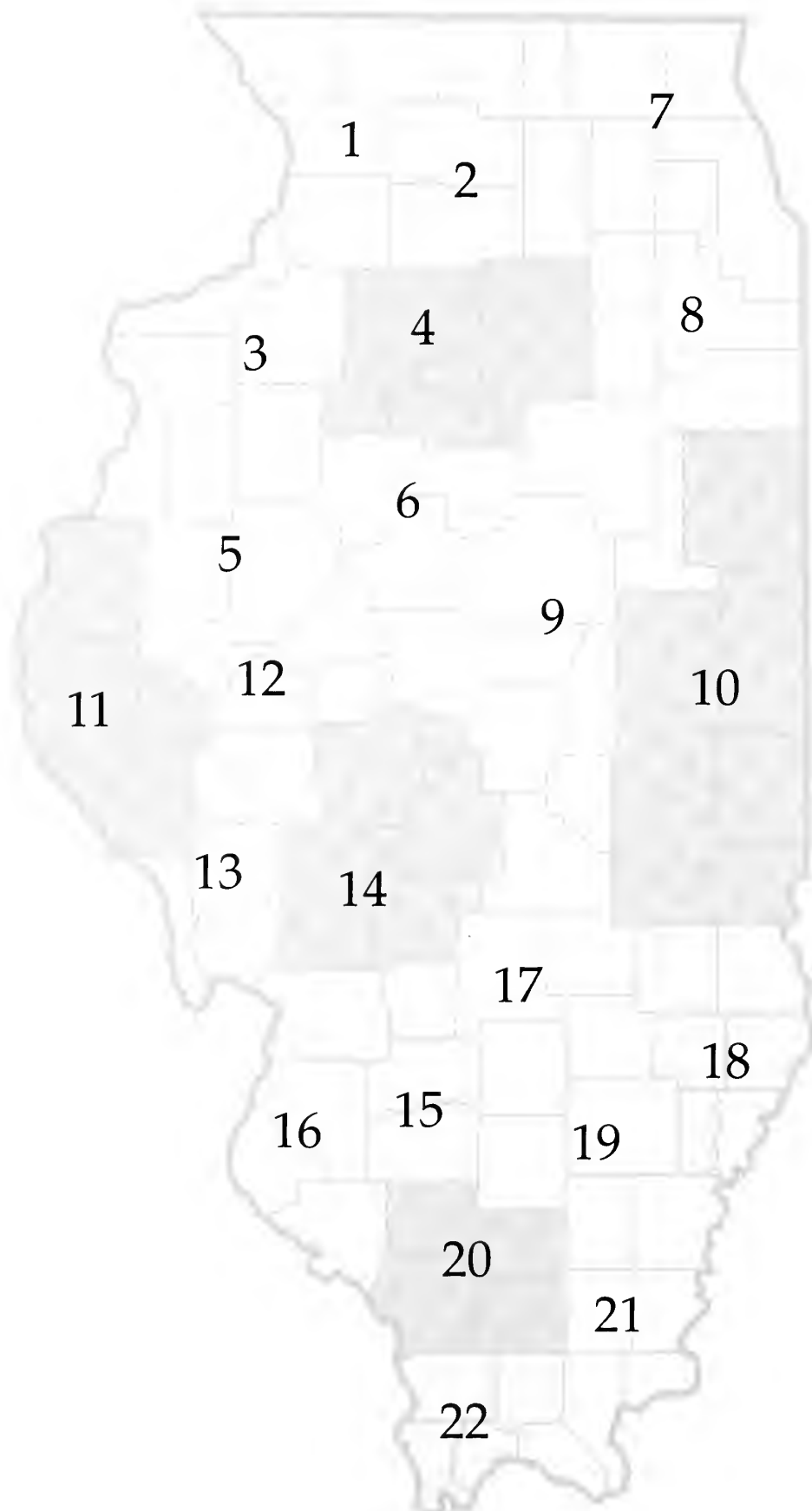
Timber stand improvement (TSI). A loose term comprising all intermediate cuttings made to improve the composition, constitution, condition, and increment of a timber stand. In many countries, TSI includes girdling and poisoning except when these are done solely to assist regeneration.

Tree classes. Classifications of trees based on the quality of their growing stock, wildlife habitats, and other characteristics. Trees that are less than 10 inches dbh are placed in either class 1 or 3 depending on their chances of developing into crop trees. See also glossary entries for good, medium, and poor growing stock.

Varieties. Groups within a species. This term is often used interchangeably with seed source.



Forest Resources Districts in Illinois



Sources of Assistance for Illinois Forest Owners

Extension Forester
110 Mumford Hall
1301 West Gregory Drive
University of Illinois
Urbana, IL 61801
(217) 333-2777

State Forester
524 South Second Street
Springfield, IL 62706
(217) 782-2361

Illinois Consulting Foresters, Inc.

Current address and phone can be obtained from the offices listed above.

Forest Resources Districts in Illinois

These districts are shown on the map on the facing page. District foresters can be contacted at the following addresses and telephone numbers:

1. P.O. Box 6
Mt. Carroll, IL 61053
(815) 244-3655
2. Castle Rock
State Park, R.R. 2
Oregon, IL 61061
(815) 732-6184
3. P.O. Box 126
Cambridge, IL 61238
(309) 937-2122
4. Randy Timmons
IVCC East Campus
Building 11
2578 East 350th Road
Oglesby, IL 61348
(815) 224-4048
5. P.O. Box 335
Macomb, IL 61455
(309) 837-1124
6. P.O. Box 795
Pekin, IL 61554
(309) 347-5119
7. P.O. Box 472
Lisle, IL 60532
(312) 964-8081
8. First National Bank Plaza
17th and Halsted
Suite 205
Chicago Heights, IL 60411
(312) 754-0945
9. P.O. Box 148
Shelbyville, IL 62565
(217) 644-2411
10. P.O. Box 129
Charleston, IL 61920
(217) 345-2420
11. P.O. Box 477
Pittsfield, IL 62363
(217) 285-2221
12. P.O. Box 401
Havana, IL 62644
(309) 543-3401
13. P.O. Box 170
Carrollton, IL 62016
(217) 942-3816
14. P.O. Box 603
Hillsboro, IL 62049
(217) 532-3562
15. P.O. Box 149
Carlyle, IL 62231
(618) 594-4475
16. P.O. Box 21
Sparta, IL 62286
(618) 443-2925
17. Stephen A. Forbes S.P.
R.R. 1, Kinmundy, IL 62854
(618) 547-3477
18. P.O. Box 313
Olney, IL 62450
(618) 393-6732
19. P.O. Box 206
Fairfield, IL 62837
(618) 847-3781
20. P.O. Box 188
Murphysboro, IL 62966
(618) 687-2522
21. Dixon Springs
State Park, R.R. 2
Golconda, IL 62938
(618) 949-3394

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Urbana, Illinois

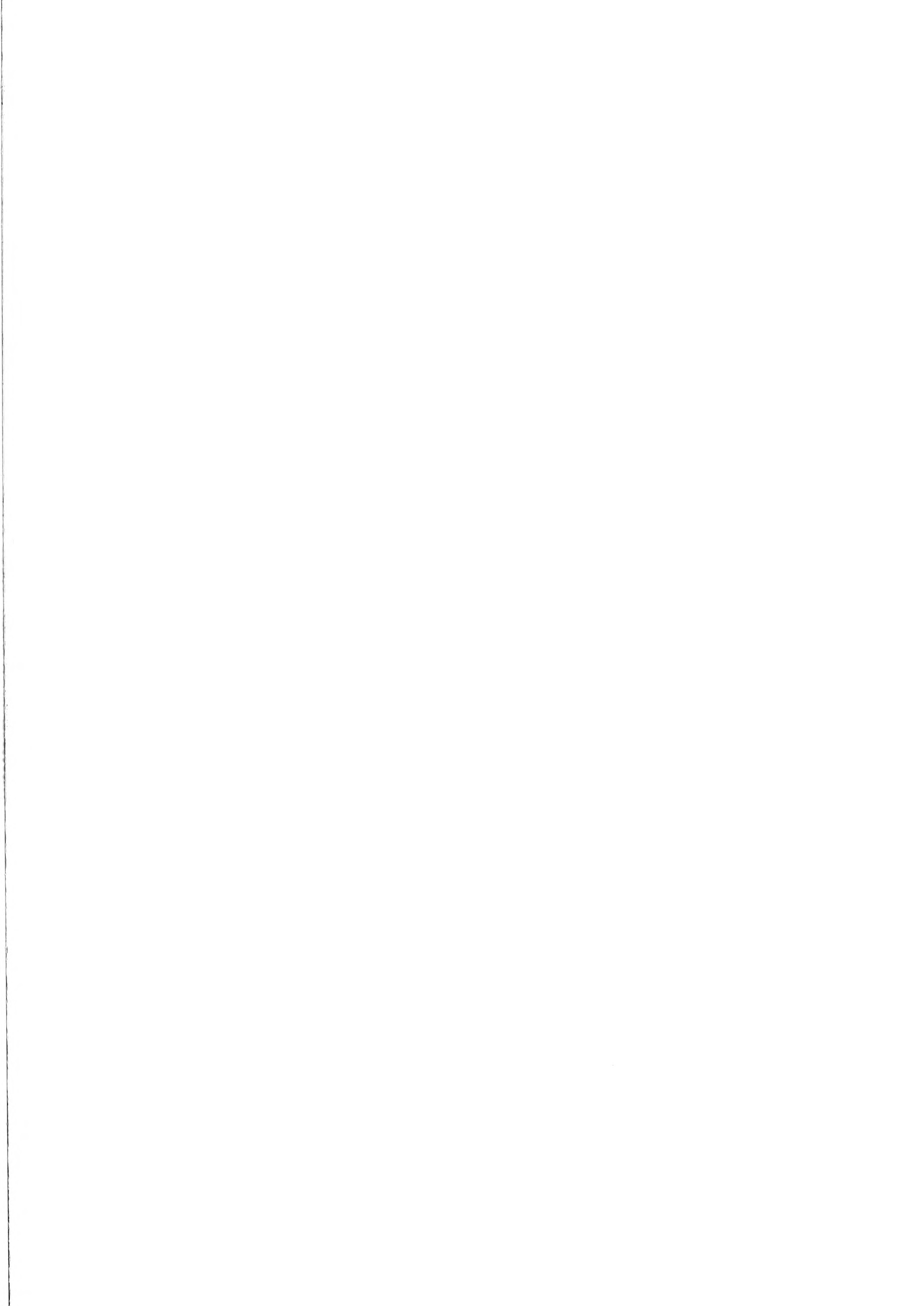
December 1990

Issued in furtherance of Cooperative Extension Work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Donald L. Uchtmann, Director, Cooperative Extension Service, University of Illinois at Urbana-Champaign.

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