

FOREST MANAGEMENT PLAN

AREA 1

ERIE NATIONAL WILDLIFE REFUGE  
Guys Mills, Pennsylvania

Submitted by Tom Myrland 3/7/85  
Date

Approved by \_\_\_\_\_  
Date

## I. Introduction

The Forest Management Plan for Erie NWR requires the refuge to be managed by areas. The refuge has been divided into six (6) areas. Area 1 starts at the north end of the Sugar Lake Unit and extends to PA Route 198. Management plans of forest/shrub lands of Area 1 will be completed before starting work on Area 2.

Each area is broken up into sections and each section is delineated on a Section Map.

## II. Forest Management Objective

The management objective on Area 1 is to increase forest diversity in order to benefit all indigenous species with primary consideration on migratory birds, which include waterfowl, woodcock, doves and songbirds. There will be secondary benefits to resident wildlife which will include deer, turkey and ruffed grouse.

Area 1 contains about 650 acres (263 hectares) of which 130 acres (53 hectares) are scattered woodland. Forest/brush and Woodland Management for the benefit of wildlife is discussed in detail on each section of land in Area 1; listed under Management Actions of this report.

## III. Area/Woodland Description

### Section A:

Section A is about 85 acres that is predominantly old field with three (3) small streams running through it. The wooded/brush area contains about 32 acres that is mostly alder with some red maple, hemlock and black cherry. The alder is old with vertical stems shooting up from the older horizontal stems along the streams. Red maple, cherry and hemlock are found in small clumps on the northwest portion of this section.

### Section B:

This section is about 50 acres in size and is predominantly old field grassland. In the northeast corner there is a small stream that runs into Section A. There is a brush area of about 13 acres in size north of the stream.

### Section C:

Section C contains multiple habitat types of agricultural fields, reed canary grass fields and old fields that are reverting to brush and poplar. The wooded areas consist of 20 to 30 year old oak, hemlock, white pine and maple. There are some good mast producing trees scattered throughout the area. The section is bounded on the west by Woodcock Creek and on the east by Hanks Road. The major portion of the section is grown up brush, with spiraea being the predominant shrub.

#### Section D:

This section contains old apple orchards, agricultural fields, wooded areas and a small impoundment with a bushy/brush area around the outflow stream.

The wooded areas include trees in the 10 to 50 year age class, with the older trees being heavy mast producing species of oak. Scattered throughout the section are several poplar clones varying in age and size. The apple trees are 20 to 50 years old with brush starting to encroach around them.

#### Section E:

Section E, located on the west side of Hemlock Island Marsh, was formerly agricultural land that has reverted back to brush lands. Young trees, most being smaller than pole size, are starting to encroach into the section.

#### Section F:

Wooded areas on this section of land consists of poplar clone clumps and small areas of mixed hardwoods. There are some hedgerow and fence row trees starting to develop throughout the section. The most predominant species are poplar, oak, maple and alder. A gas pipe line crosses the section between Pool B and N. The line is periodically cleared of all tree and brush species. There are also three fields of native grasses that are prescribed burned every three to five years.

### IV. Program Policies and Administrative Controls

#### A. Manpower Availability and Use

1. Refuge Maintenance Staff;
2. Youth Conservation Corps;
3. Volunteers (Sportsmen's Groups);
4. Commercial Contractors (see sample sales contract attached).

#### B. Management Actions

Management actions will differ on each area and section. These actions are based, to some extent, on literature review and on the good common sense approach to habitat management that will work on Erie National Wildlife Refuge. Since it is impossible to manage this area for all species that are present. We have made the woodcock and wood duck the primary species of concern. Management for these species should benefit all other species present.

Methods of management are addressed in each section:

##### 1. Section A:

This section will be strip-cut from south to north to induce stem sprouting. The alder in this section has become too

old for high woodcock use. Sepik (1981) has indicated that horizontal alder stems are of a lesser value than small upright stems. To maintain this area the alder will be cut every five to seven years. Slash and brush piles will be stacked along the edge of the field for small mammals.

2. Section B:

The fields will be maintained in a grassland habitat. The brush area on the northeast end will be maintained for wild-life cover.

3. Section C:

This section is 9,504 feet long bounded on the east by Hanks Road and on the west by Woodcock Creek. The section will be placed in a rotation by strip clear-cutting starting at the intersection to the left of Hanks Road and Townville Road. A one chain cut, 66 feet wide running from Hanks Road to the nearest stream will be accomplished. The one chain cut prescription will be repeated every 528 feet continuing north to State LR20114. On a three-year rotation there will be 8 cuts of 66 feet wide, which will equal 24 years ( $528 \text{ ft.} = 8 \text{ cuts} \times 3 \text{ years} = 24 \text{ years}$ ). Using this prescription we will accomplish the stages of forest succession used by woodcock as reported by Sepik, et al, (1981). The illustration below indicates the best woodcock use.

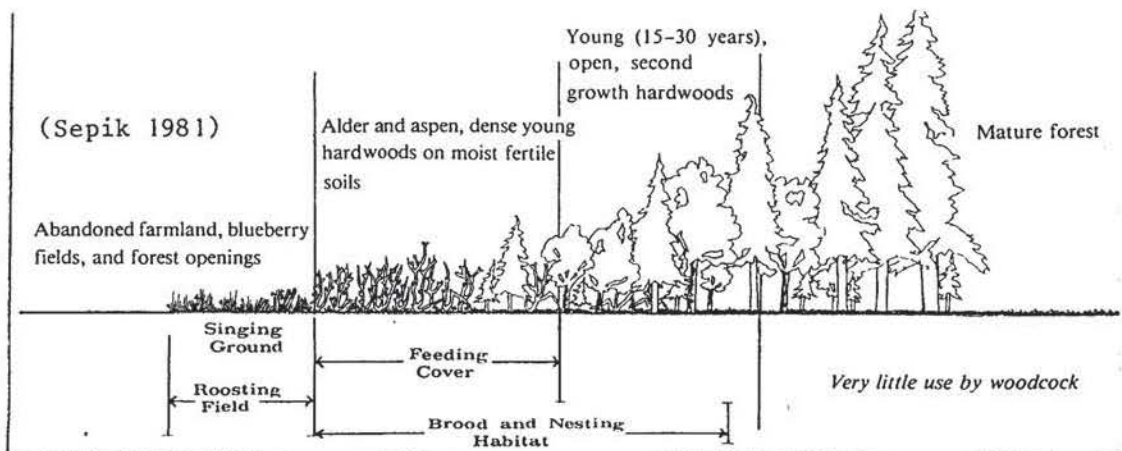


Figure 1. The stages of forest succession used by woodcock.

At the completion of the 24 year cycle, return to the original cut and start the three-year rotation again.

All trees will be cut except for softwood stands, apple or fruit trees and heavy producing mast trees. Den or wolf trees will also be saved.

The removal of stands of softwoods is not recommended because they have a very high wildlife value. On Section C they serve as cover and shelter for turkey, deer, ruffed grouse and mourning dove.

All apple/fruit trees are to be mapped and treated in the following manner (Steps as per Olson & Langer, Care of Wild Apple Trees):

Step 1 - Carefully examine the apple tree. Look for dead branches, diseased wood in the trunk, and the presence of more than one stem. If there is more than one stem, select the largest and most vigorous and remove the smaller competing stems by cutting them off as near the ground as possible. If the largest stem is badly diseased or broken, remove it and select the next largest, most vigorous stem for improvement.

Step 2 - Remove all other shrubs and trees back to the drip line of the apple tree. If the tree is shaded by large overtopping trees, remove these on at least three sides especially towards the south. Remove all the dead branches from the apple tree. Cut these off with pruning saw or pruning shears as close to the living branches as possible.

Step 3 - Remove approximately one third of the remaining live growth. In so doing, attempt to open up thick clusters of branches. Clip off one to two feet from the ends of vigorous side branches or vertical sucker shoots. Do not remove the short spur branches which grow on the sides of larger branches because these are the fruit-bearing branches. IF the tree is a young sapling with few side branches, the top may be cut off to encourage branching.

Step 4 - Fertilize the tree by pouring a liquid solution of calcium nitrate or ammonium nitrate fertilizer in a narrow band around the tree directly below the drip line. Fertilizer in this narrow band will spread out and become available to the feeder roots as it seeps into the ground. Use five pounds of fertilizer for a large tree and three pounds for a medium-sized tree. For very small trees or saplings, use one pound of fertilizer at least three feet from the base of the tree.

Due to the availability of manpower, all cuts will have to be made during the growing season. Slash piles will be left in the clear-cuts until burned the following spring. After felling, deer are known to browse on the downed tree tops (Liscinsky, 1985). It is estimated that seedling-sapling trees produce 900 pounds of browse per acre and if left in piles it becomes an excellent winter food source (Liscinsky, 1985). The slash piles will also provide cover for many small birds and mammals during the winter. Burning the piles in the spring will provide a nutrient release for plant growth at the proper time of year.

The volume of timber to be removed each three year period is expected to be no more than ten cord. The timber on Section C is not of commercial value except as firewood. To meet energy conservation goals of the station, the wood removed will be used to provide supplemental heat for the headquarters.

#### 4. Section D:

To encourage mast producing trees, such as oak, hickory and walnut, this section will be treated with timber stand improvement. Trees in this section are of the older age class of up to 50 years and provide wood ducks with abundant food stuffs. The field/forest composition provides a good deal of diversity and, therefore, lends itself to selective cutting, girdling and release methods to improve mast producing trees.

The old apple orchard in this section will be treated in the same manner as the apple trees in Section C.

There are several poplar clones in Section D that lend themselves to clone management practices as described by Gullion (1984). Selective cutting of old age poplar to regenerate the clone will be practiced. In some instances, clear-cutting of the clone will be done. The slash will be piled on the clone site and burned to promote stump sprouting. All clone management will be done during the dormant season.

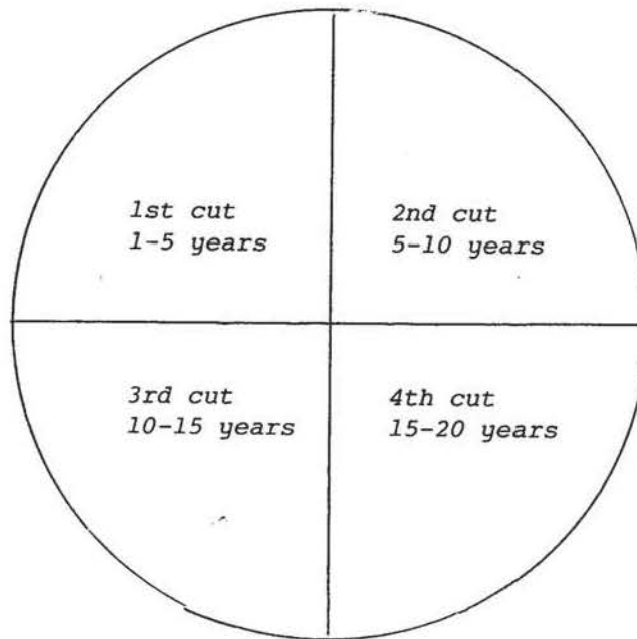
#### 5. Section E:

This 20 acre section of brush will be block cut in .5 acre blocks with a checker board pattern. The blocks will be alternately cut every five to seven years. The checker board pattern will increase habitat diversity and provide increased edge effect in the area.

#### 6. Section F:

Section F is ideal for poplar clone management. The clones are scattered and under 20 years of age. Select trees will be cut to enhance clone growth and maintain a vigorous clone of 20 years

old and younger. The illustration below will allow future management personnel to decide when to cut part of the clone. A post or stake, with the year cut, will be placed on the clone site.



*Poplar clone*

*C. Regeneration Management*

*On Area 1, natural regeneration will be used to restock the sections cut.*

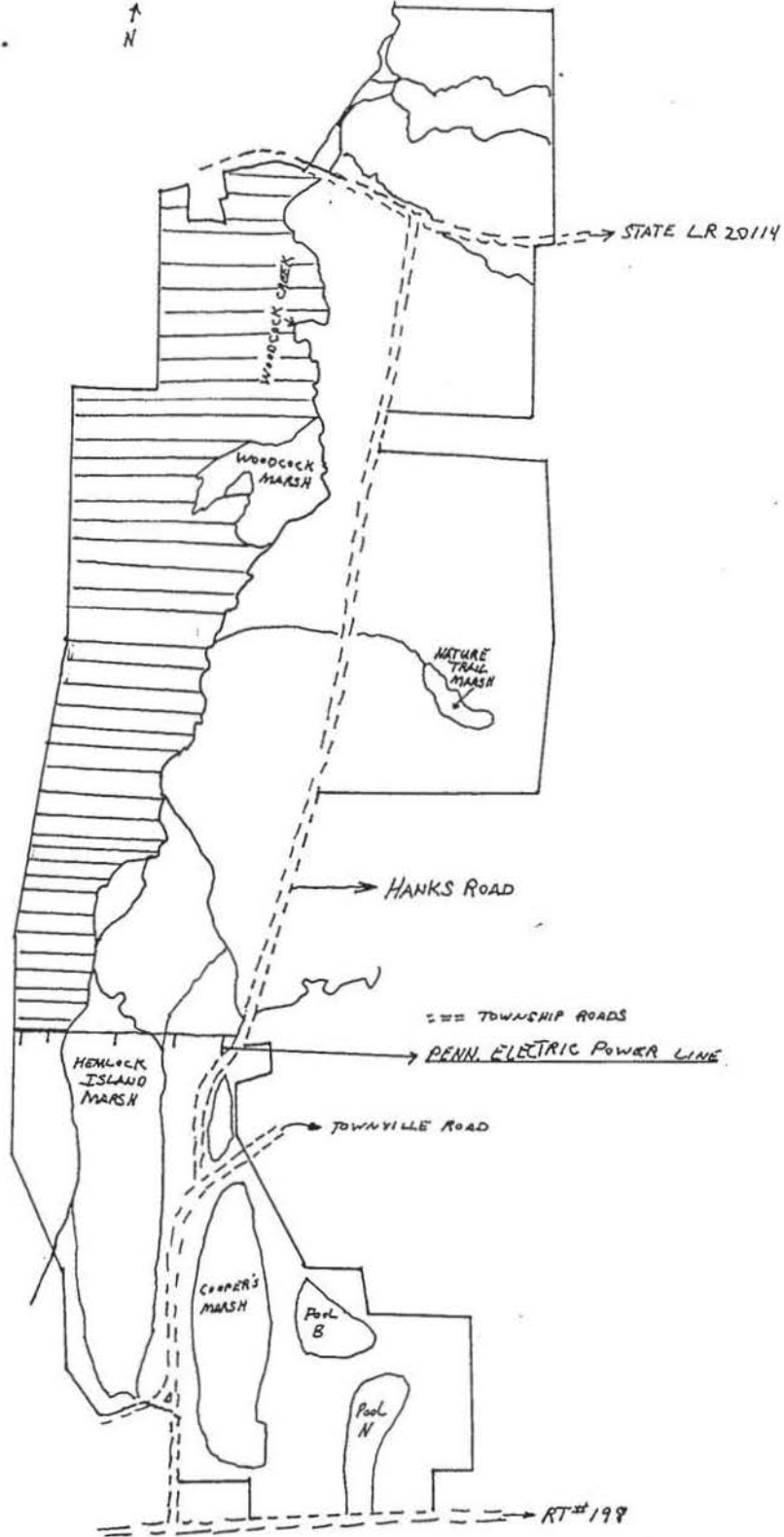
*D. Timber Sales*

*None.*

V. Program Costs

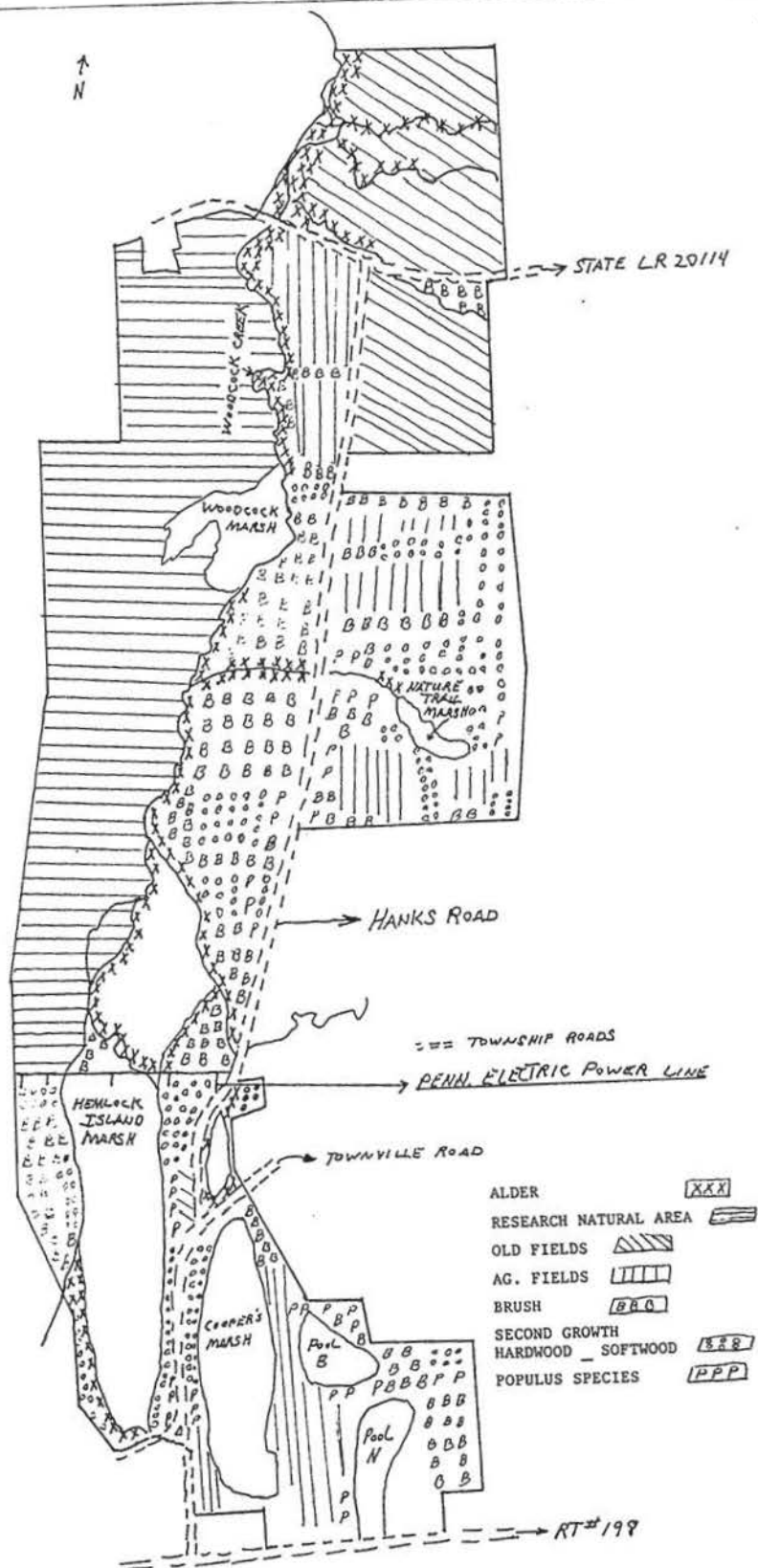
Cost will vary according to programs used to accomplish the forest management goals. Using refuge personnel, cost could be as high as \$500/acre cut depending on the volume of wood on any particular cut. Cost per acre may be as low as \$100/acre using labor intense YCC programs. The use of volunteers could drastically reduce the cost per acre, but increase the time that is spent in supervising the work done.

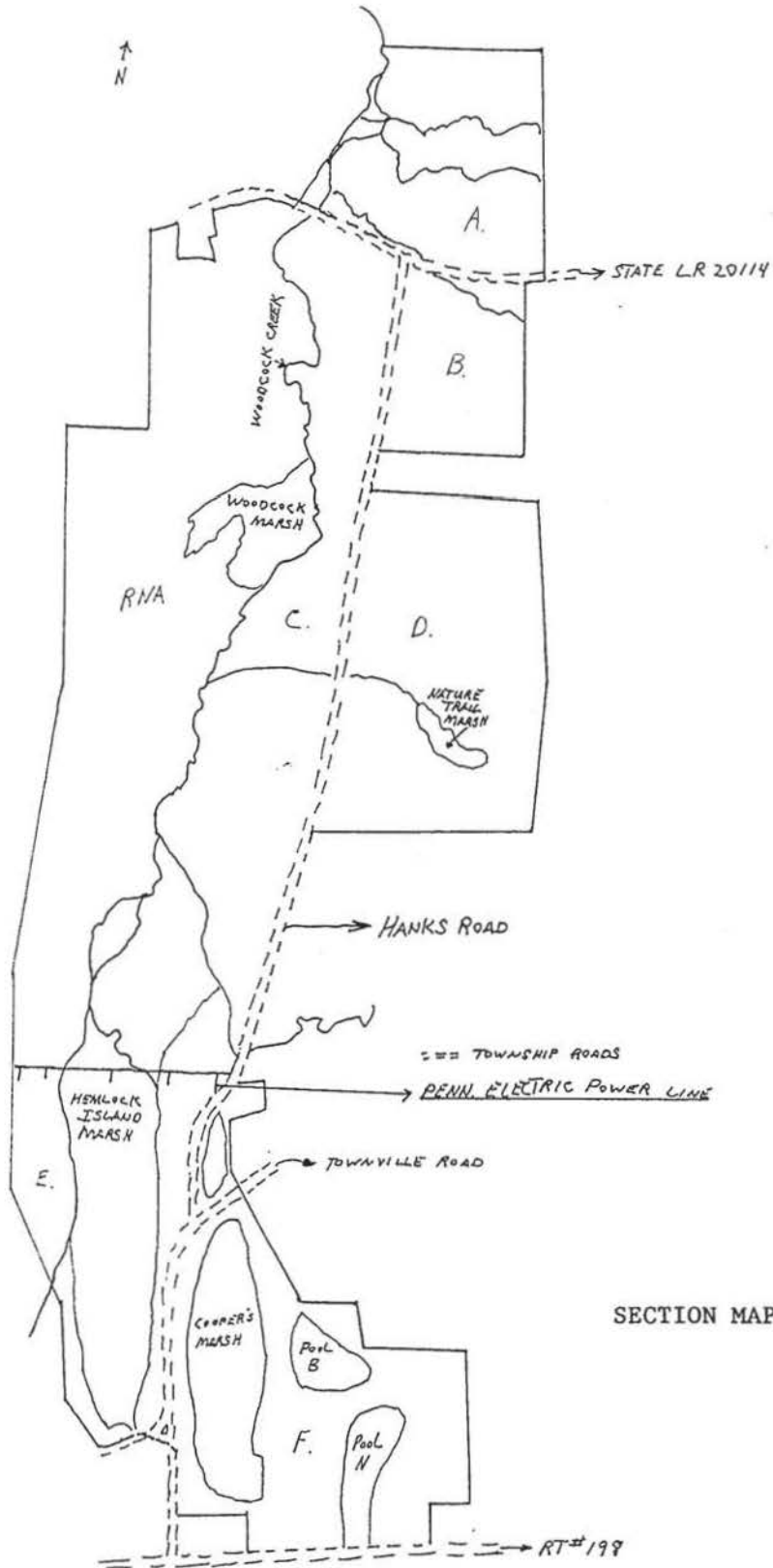




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AREA (1)





SECTION MAP

## **Sample timber sale contract with wildlife considerations**

I, Mark Hamilton of Masten, Pennsylvania (Purchaser) agree to purchase from Woodrow Menistem of Pomfret Center, Pennsylvania (Seller) the trees described below.

I. Location of Sale: The 42-acre woodland is in Derry Township, Tioga County, Pennsylvania, at the intersection of PA Route 804 and Legislative Route 7221, as shown on the attached map.

II. Trees to be Cut: Cut all designated trees and/or trees marked with yellow paint. Reserve all hemlock, hickory, dogwood, serviceberry, and black gum. Additional trees of special wildlife value to be left are marked with blue paint. Also not to be cut are any trees within 100 feet of Brougher Run except those marked with yellow paint by Seller.

III. Conditions of Sale:

A. The Purchaser agrees to the following:

(1) To pay the Seller the sum of \$16,350 for the above designated or marked trees, and to make payment in advance of cutting.

(2) To waive all claim to the above described trees unless they are cut and removed on or before one calendar year from the date on this contract. In the event Purchaser is, due to circumstances beyond his control, unable to complete the sale in the time allowed, the Seller and Purchaser may agree on an extension of time for this contract.

(3) To construct a log-loading site approximately one-half acre in size in the southeast portion of the tract at a location agreed upon by the Seller and Purchaser.

(4) To do all in his power to prevent and suppress forest fires on, or threatening, the sale area.

(5) To avoid unnecessary injury to all trees not designated to be cut.

(6) To repair damages caused by logging to ditches, fences, bridges, roads, trails, or other improvements damaged beyond ordinary wear and tear.

(7) Not to assign this Agreement in whole or in part without the written consent of the Seller.

(8) All tops and slash from felled trees within 25 feet of the adjoining highway will be removed. No slash will be left across or on the public road, cleared field, or Brougher Run. Tops may be left on skid trails to prevent erosion.

(9) To leave standing all marked property boundary trees.

(10) Purchaser will take precautions to prevent soil erosion and other conditions detrimental to the property resulting from logging operation. Should such conditions occur, they will be corrected by the purchaser. He also will remove all oil cans, paper, and other trash resulting from the operation.

(11) To furnish to Seller 20 pounds of perennial rye grass seed, 2 pounds of timothy seed, and 6 pounds of inoculated birdsfoot trefoil which Seller will apply to the log-loading site and roads upon completion of this timber sale.

(12) To maintain public liability and workman's compensation insurance policies for the duration of this contract.

B. The Seller agrees to the following:

(1) To guarantee title to the forest products covered by this Agreement, and to defend it against all claims at his expense.

(2) The property boundary lines shown to the Purchaser by the Seller are correct as located on the attached map. The Seller will save harmless the Purchaser from all trespass claims originating as a result of errors in the boundary line location made by the Seller.

(3) To allow the Purchaser to make necessary logging-road improvements such as bridges and gates which shall be removed or left in place as agreed upon by the Seller and the Purchaser. Trees designated for cutting may be used to construct such improvements.

(4) To grant freedom-of-entry and right-of-way to the purchaser and his employees on and across the area covered by this Agreement, and also other privileges usually extended to purchasers of timber which are not specifically covered, provided they do not conflict with specific provisions of this Agreement.

C. In case of dispute over the terms of this Agreement, we agree to accept the decision of an Arbitration Board of three selected persons as final. Each of the contracting parties will select one person, and the two selected will select a third to form this Board.

Signed this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_

Witness:

(Signed) \_\_\_\_\_

Purchaser

Seller

Literature Cited

- Gullion, G. W. (1984) Managing Northern Forest for Wildlife. Ruffed Grouse Society, pp. 1-80.
- Olson, D. and Langer, C. Care of Wild Apple Trees. Reprint, Extension Folder 70, New Hampshire Cooperative Extension Service, Durham, New Hampshire. U.S. Dept. of Agriculture, Forest Service.
- Liscinsky, S. (February 1985) Treetop Browse. PA Game News, p. 41.
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- Sepik, G., et al. (July 1981) A Landowner's Guide to Woodcock Management in the Northeast. University of Maine at Orono, pp. 1-50.