

**FOREST MANAGEMENT PLAN**  
**for the**  
**ATKINSON TOWN FORESTLANDS**  
**Atkinson, New Hampshire**

**Prepared for:**  
**The Atkinson Conservation Commission**  
**Atkinson, NH**

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**September 30, 1989**

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**Charles Moreno**  
**Consulting Forester**

**Report Copy # \_\_\_\_\_**

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INTRODUCTION

FOREST MANAGEMENT PLAN  
for the  
ATKINSON TOWN FORESTLANDS  
Atkinson, New Hampshire

ABSTRACT

This forest management plan was prepared for the 280± wooded acres of the Atkinson Town Forestlands located primarily in Atkinson, New Hampshire. The Town Forestlands include nine parcels of land comprising a total of 322.8± acres, the balance of which includes a field and wetlands. Highlighting each parcel, the plan outlines an intensive program for improving forest growth and value, while managing the recreational, wildlife, and aesthetic qualities of the land. Based on a detailed woodland analysis and inventory, and a multiple-use perspective, silvicultural recommendations are presented over a 25-year timetable.

This project was performed in conjunction with the Atkinson Conservation Commission and the Rockingham County Cooperative Extension Service. Cost-share funding and general specifications for the plan were provided under the ASCS' program, SP-44.

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Charles Moreno  
Consulting Forester  
Report Copy #

## MANAGEMENT OBJECTIVES

The Atkinson Town Forestlands include nine parcels of land located in various parts of town as illustrated in the Locus Map. The parcels range in size from the 7.4-acre Noyes Lot to the 120-acre Sawyer Lot. The parcels have been officially recognized as Town Forest by vote at Town Meeting on various dates beginning in 1980. Management of the parcels is overseen by the Atkinson Conservation Commission.

The primary objective of management for the parcels is to provide townspeople open space to enjoy and engage in light recreational activities. Uninterrupted forest cover, in most cases, is characteristic of all the parcels. With the exception of the Stickney and Marshall Lots, which have water frontage on Island Pond thus offering some water-related recreational opportunities, most recreational activity on the Town Forestlands revolves around the existing trail system. Measures to enhance access to the properties and trails will be discussed in this plan.

As a result of its Town Forest status, it will be assumed in this plan that the property will remain a forest for the indefinite future. This condition affords the opportunity to set management goals for the development of the forest over the next 50 to 100 years. The liberty of this long-term outlook is necessary to chart the course of forest development and regeneration into desirable tree species, among other planning. Fifty years is a moderately short span of time in terms of forest development; on productive soils, oak and pine may be grown into maturity well over 100 years of age.

A primary management interest, then, over the long term, is the development and regeneration of the forest into the species mix which is most favorable for wildlife, timber value, and aesthetics. Thinnings

and improvement cuttings in the short term over the next 10 to 50 years, are intended to develop the forest and set-up regeneration cuttings. Known as intermediate cuttings, these harvests will also produce a small cash flow which may be used to cover the costs incurred in managing and maintaining the properties.

The management of the properties for a variety of uses and forest values is known as multiple-use management. In addition to recreation and silviculture, wildlife habitat, aesthetics, and any educational or historical aspects of the properties all rank among important uses and amenities of the forest. In pursuing long-term silvicultural goals, these multiple-uses will be addressed in the overall management scheme. Experience has shown that given a long-term outlook, the silvicultural management of a forest remains consistent with the maintenance and enhancement of these other forest values.

## TOWN FOREST HISTORY

The acquisition of the Town Forest parcels began with the purchase of the 5.9 acre Noyes Lot in 1975. This and several succeeding parcels were acquired for the town largely through the efforts and initiative of Carol Grant, Chairwoman of the Atkinson Conservation Commission at the time. Federal matching-funds were received from the Bureau of Outdoor Recreation to enable the purchase of the lands at little or no cost to the Town. The former owners of most of the properties donated part of the value of their lands by selling to the Town at a bargain price, thus qualifying the Town for matching-funds.

Chet Ladd, a member of the Conservation Commission since the early 1970's, donated a great deal of time over the years researching deeds for the properties, and then with the aid of Commission member Stuart Hale, locating and running the boundary lines for all the lots. This information was then presented to a couple of local surveyors who organized the data into registered maps, so as to qualify each parcel for the federal matching-fund program. All the legwork to acquire the parcels-- deed research, surveying, mapping, appraising, negotiations, etc.-- were accomplished on a shoestring budget. Through the generous and dedicated efforts of several individuals, the parcels finally came under Town ownership.

Today these nine parcels are managed for forestry, wildlife and recreation, and are held for the enjoyment of Atkinson's citizens.

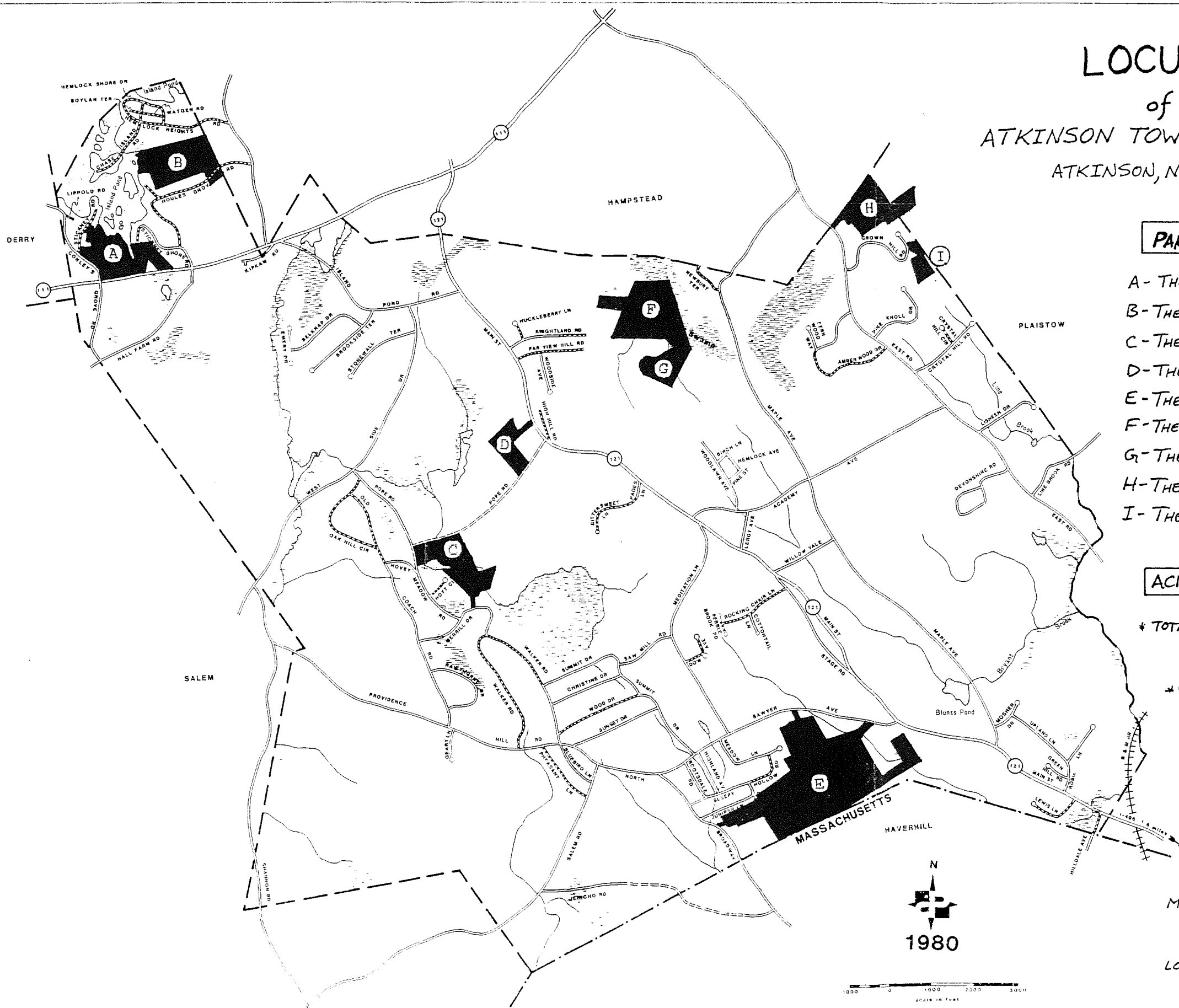


## LIST OF TOWN FOREST PROPERTIES

<u>Parcel</u>	<u>Forest Area</u>	<u>Total Area</u>	<u>Acquisition Date</u>
A) The Stickney Lot	29 acres	29 acres	8/82
B) The Marshall Lot	35	35	12/79
C) The Chadwick Lot	27	27	4/78
D) The Slade Lot	11.7	11.7	11/79
E) The Sawyer Lot	112	120.2	4/78, 9/80, & '81
F) The Sawmill Swamp Lot	15	49.6	1985
G) The Feuer Lot	17.4	17.4	1985
H) The Chambers-Fila Lot	25.5	25.5	4/78
I) The Noyes Lot	7.4	7.4	4/76 & 12/76
	-----	-----	
TOTALS	280± acres	322.8± acres	

# LOCUS MAP

of the  
**ATKINSON TOWN FORESTLANDS**  
 ATKINSON, NEW HAMPSHIRE



**PARCEL SUMMARY**

- A- THE STICKNEY LOT
- B- THE MARSHALL LOT
- C- THE CHADWICK LOT
- D- THE SLADE LOT
- E- THE SAWYER LOT
- F- THE SAWMILL SWAMP LOT
- G- THE FEUER LOT
- H- THE CHAMBERS-FILA LOT
- I- THE NOYES LOT

**ACREAGE SUMMARY**

- \* TOTAL TOWN FOREST AREA:  
322.8 ± ACRES
- \* WOODED AREA:  
280 ± ACRES



MAP SCALE:  
1 INCH = 2500 FEET

LOCUS MAP COMPILED BY:  
 CHARLES A. MORENO  
 CONSULTING FORESTER  
 AUG 1989

**TOWN OF ATKINSON**  
 NEW HAMPSHIRE  
 ATKINSON PLANNING BOARD

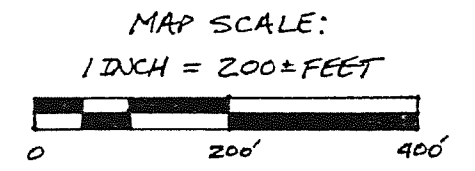
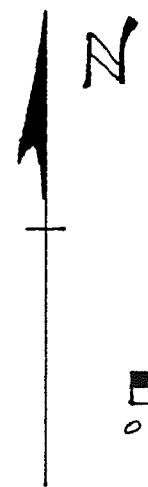
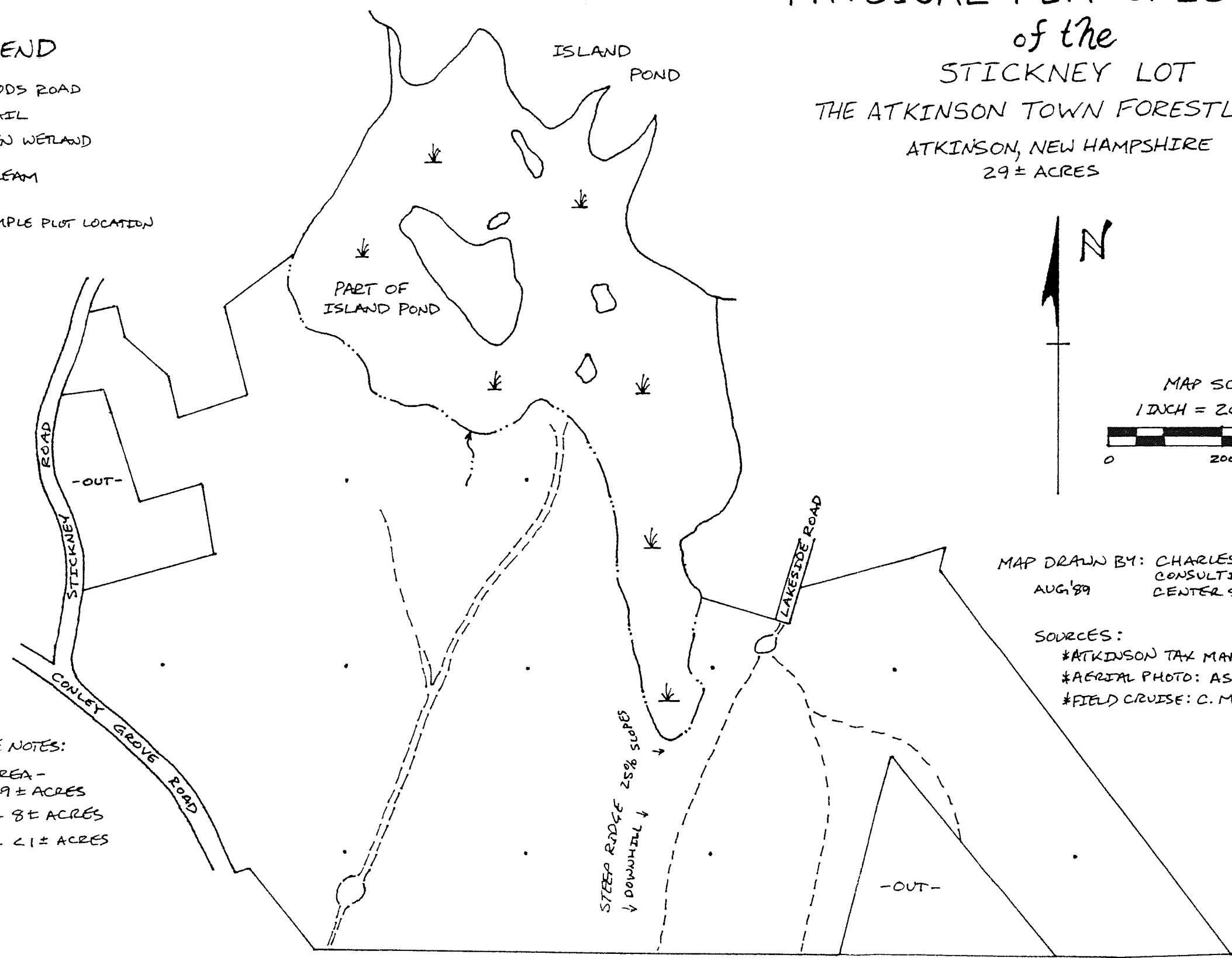
Prepared by HANS KLUNDER ASSOCIATES, INC.  
 Approved Planning Board July 24, 1989  
 Accepted Board of Selectmen October 6, 1989

PROPERTY PROFILE

# PHYSICAL FEATURES MAP of the STICKNEY LOT THE ATKINSON TOWN FORESTLANDS ATKINSON, NEW HAMPSHIRE 29 ± ACRES

## LEGEND

- === WOODS ROAD
- TRAIL
- ↘ OPEN WETLAND
- ~ STREAM
- SAMPLE PLOT LOCATED



MAP DRAWN BY: CHARLES A. MORENO  
CONSULTING FORESTER  
CENTER STRAFFORD, NH  
AUG '89

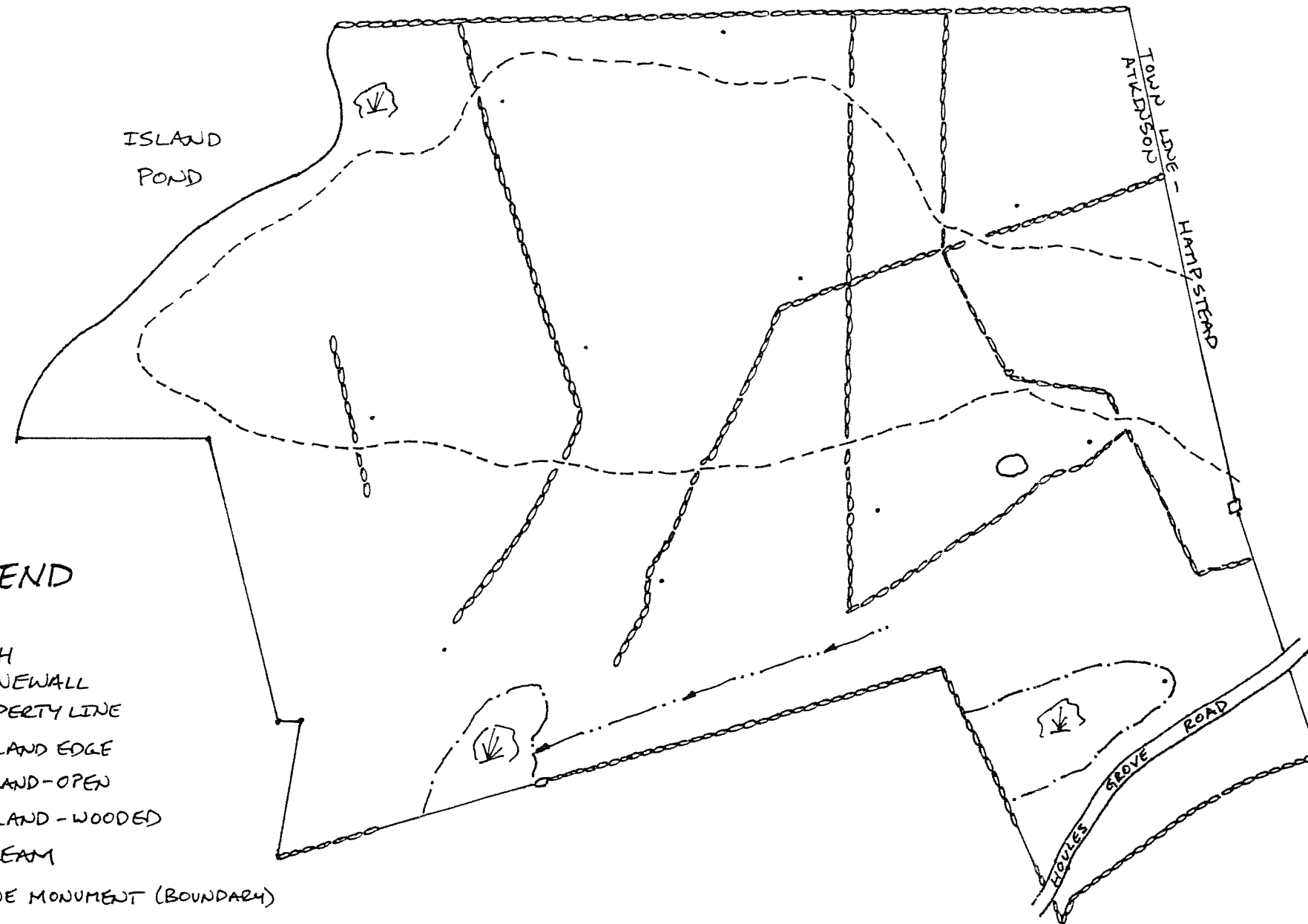
- SOURCES:
- \* ATKINSON TAX MAP #20 (LOTS 35, 15-1)
  - \* AERIAL PHOTO: ASCS # 33015-174-129 C
  - \* FIELD CRUISE: C. MORENO AUG '89

ACREAGE NOTES:

- \* WOODED AREA - 29 ± ACRES
- \* WETLAND - 8 ± ACRES
- \* ISLANDS - < 1 ± ACRES

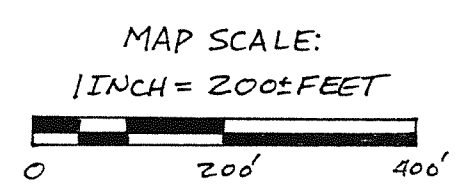
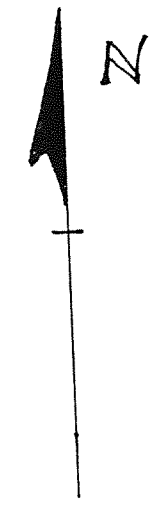
ROUTE 111

PHYSICAL FEATURES MAP  
of the  
MARSHALL LOT  
THE ATKINSON TOWN FORESTLANDS  
ATKINSON, NEW HAMPSHIRE  
35± ACRES



LEGEND

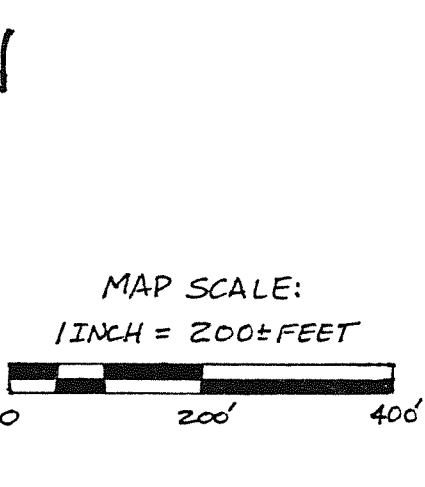
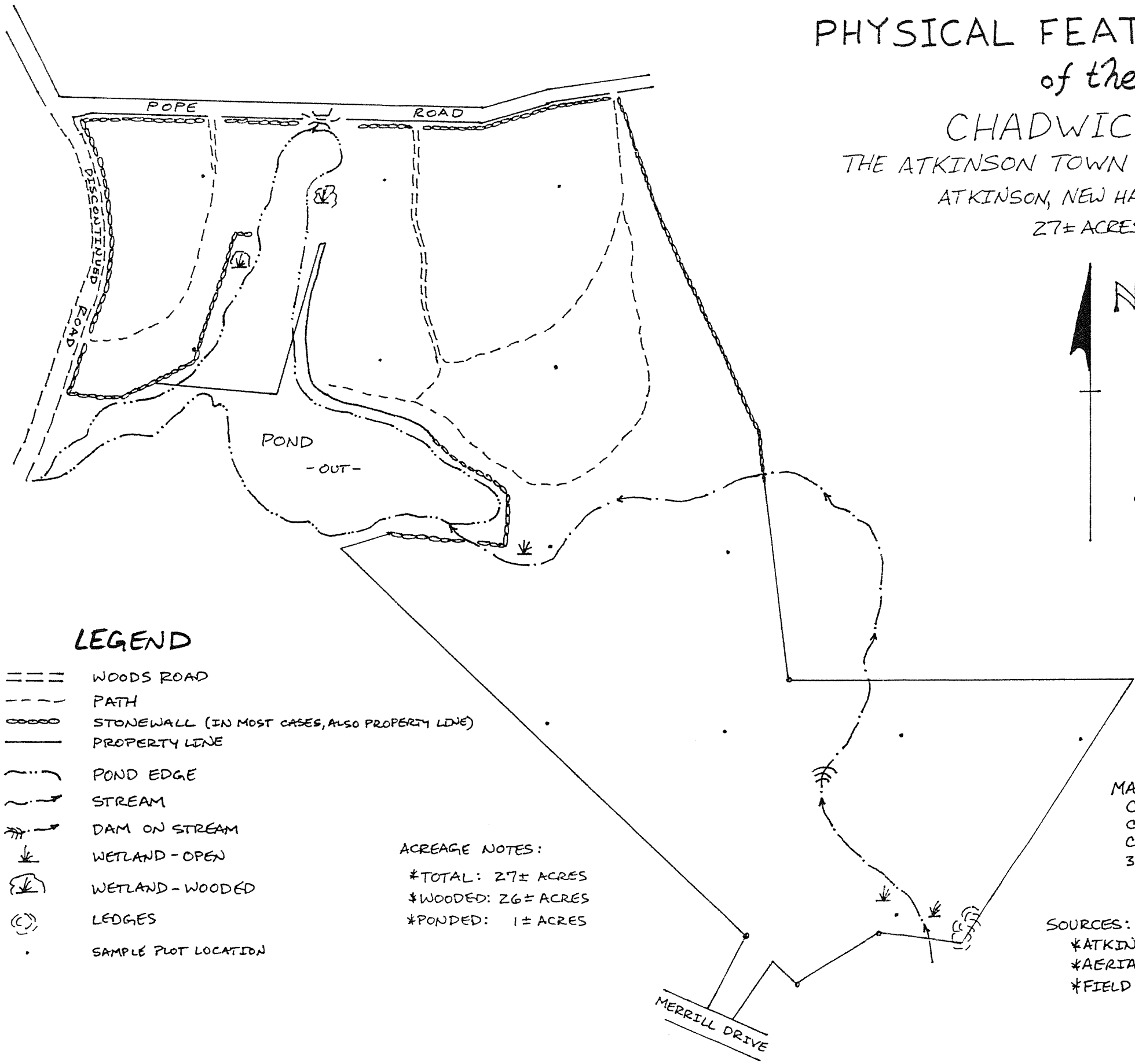
- PATH
- ooooo STONEWALL
- PROPERTY LINE
- - - WETLAND EDGE
- ⌵ WETLAND-OPEN
- ⌵ WETLAND-WOODED
- > STREAM
- STONE MONUMENT (BOUNDARY)
- SAMPLE PLOT LOCATION



MAP DRAWN BY:  
CHARLES MORENO  
CONSULTING FORESTER  
CTR. STRAFFORD, NH AUG' 89

MAP BASED ON:  
\*REGISTERED SURVEY - C. MARTIN ASSO.  
#D-8321, OCT. 1977  
\*ATKINSON TAX MAP: 20-36  
\*TRAIL MAP - C. LADD 6/85  
\*AERIAL PHOTO - ASCS #33015-174-262 C  
\*FIELD CRUISE - C. MORENO, AUG. 89

PHYSICAL FEATURES MAP  
 of the  
**CHADWICK LOT**  
 THE ATKINSON TOWN FORESTLANDS  
 ATKINSON, NEW HAMPSHIRE  
 27± ACRES



**LEGEND**

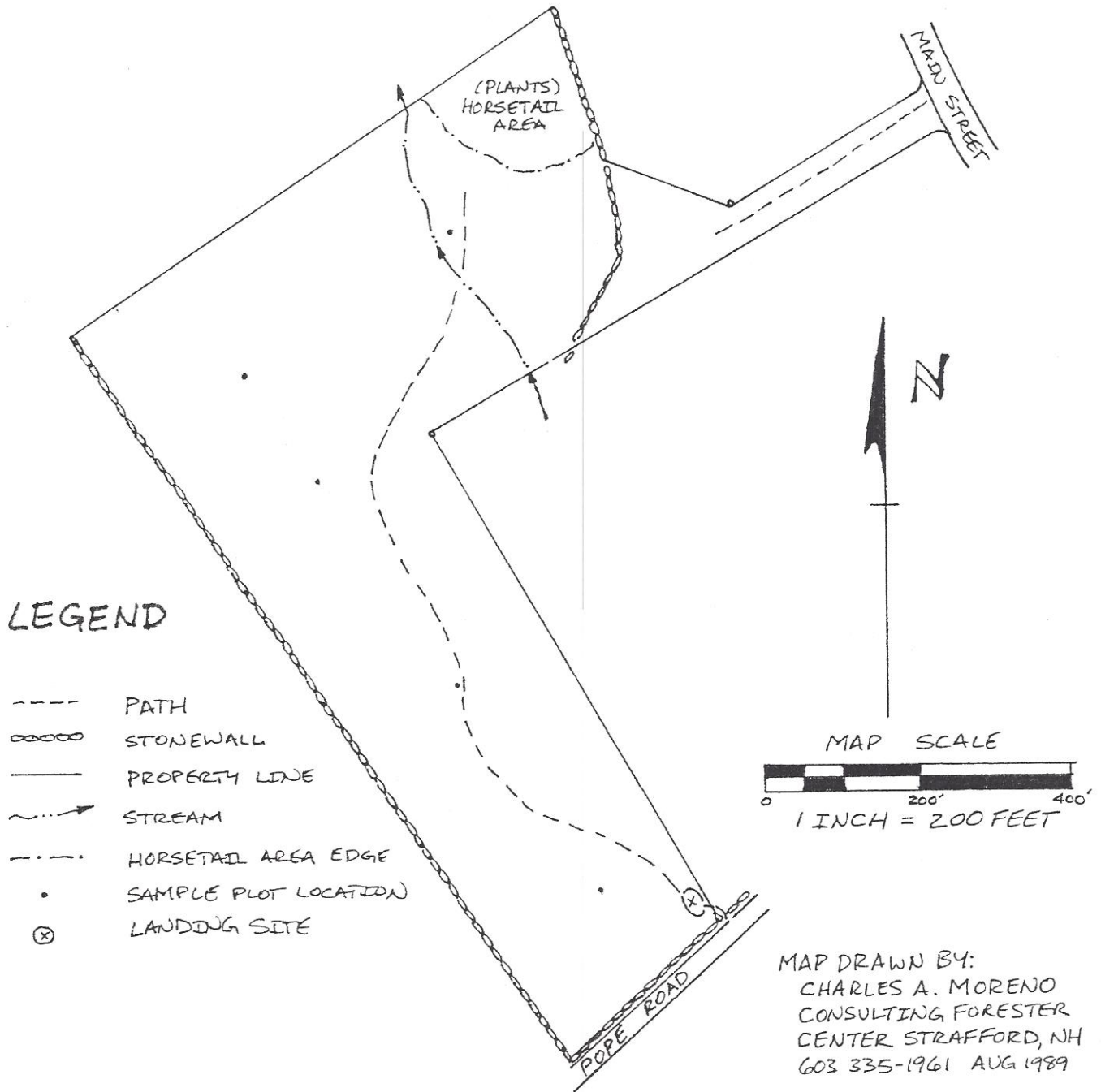
- === WOODS ROAD
- - - PATH
- oooo STONEWALL (IN MOST CASES, ALSO PROPERTY LINE)
- PROPERTY LINE
- ~ POND EDGE
- ~> STREAM
- ~> DAM ON STREAM
- ↓ WETLAND - OPEN
- ↓ WETLAND - WOODED
- (C) LEDGES
- SAMPLE PLOT LOCATION

ACREAGE NOTES:  
 \*TOTAL: 27± ACRES  
 \*WOODED: 26± ACRES  
 \*PONDED: 1± ACRES

MAP DRAWN BY:  
 CHARLES A. MORENO  
 CONSULTING FORESTER  
 CENTER STRAFFORD, NH  
 335-1961 AUG 1989

SOURCES:  
 \*ATKINSON TAX MAP #12 (LOT 2)  
 \*AERIAL PHOTO: ASCS # 33015-174-243  
 \*FIELD CRUISE: C. MORENO, AUG '89

# PHYSICAL FEATURES MAP of the SLADE LOT THE ATKINSON TOWN FORESTLANDS ATKINSON, NEW HAMPSHIRE 11.7 ± ACRES



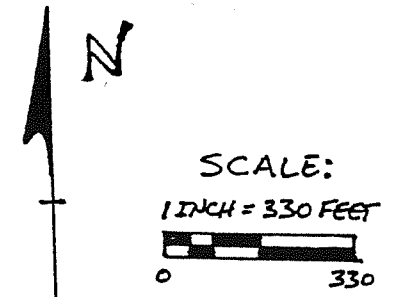
**SOURCES:**

- \* REGISTERED SURVEY BY: CHAS. MARTIN ASSO.  
OCT '78 D#8322 HAVERTHILL, MASS
- \* ATKINSON TAX MAP #12 (LOT 8-1)
- \* AERIAL PHOTO: ASCS # 33015-174-243
- \* FIELD CRUISE: C. MORENO, AUG 1989

11

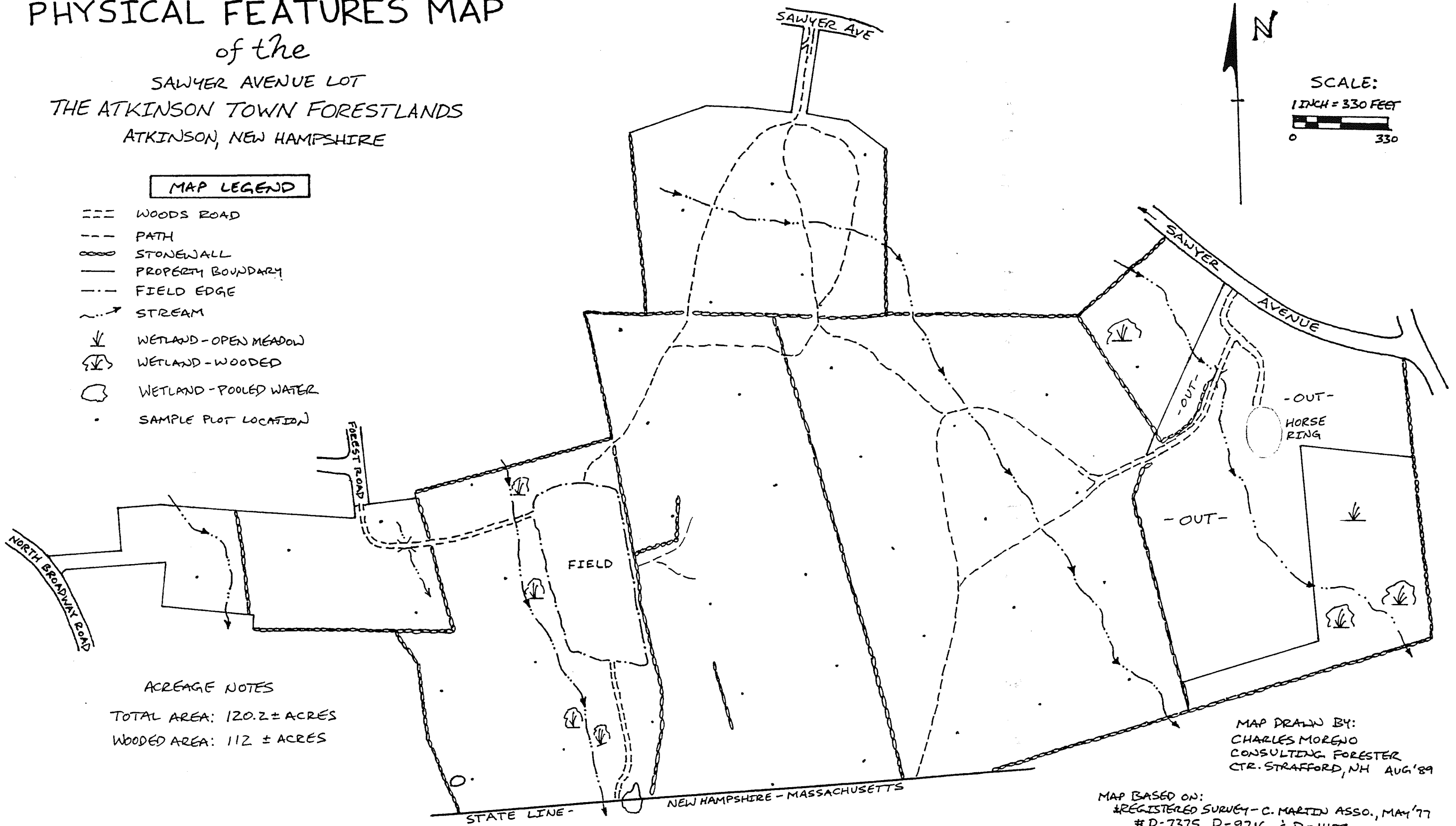
# PHYSICAL FEATURES MAP

of the  
SAWYER AVENUE LOT  
THE ATKINSON TOWN FORESTLANDS  
ATKINSON, NEW HAMPSHIRE



**MAP LEGEND**

- === WOODS ROAD
- PATH
- oooo STONEWALL
- PROPERTY BOUNDARY
- - - FIELD EDGE
- ~> STREAM
- ∩ WETLAND - OPEN MEADOW
- ∩ WETLAND - WOODED
- WETLAND - POOLED WATER
- SAMPLE PLOT LOCATION



ACREAGE NOTES  
TOTAL AREA: 120.2 ± ACRES  
WOODED AREA: 112 ± ACRES

MAP DRAWN BY:  
CHARLES MORENO  
CONSULTING FORESTER  
CTR. STRAFFORD, NH AUG '89

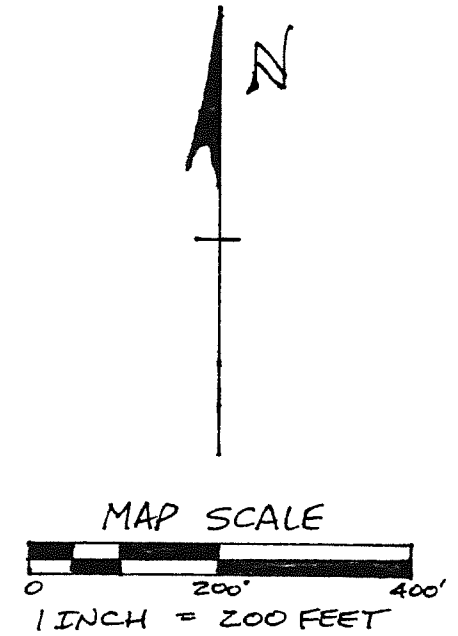
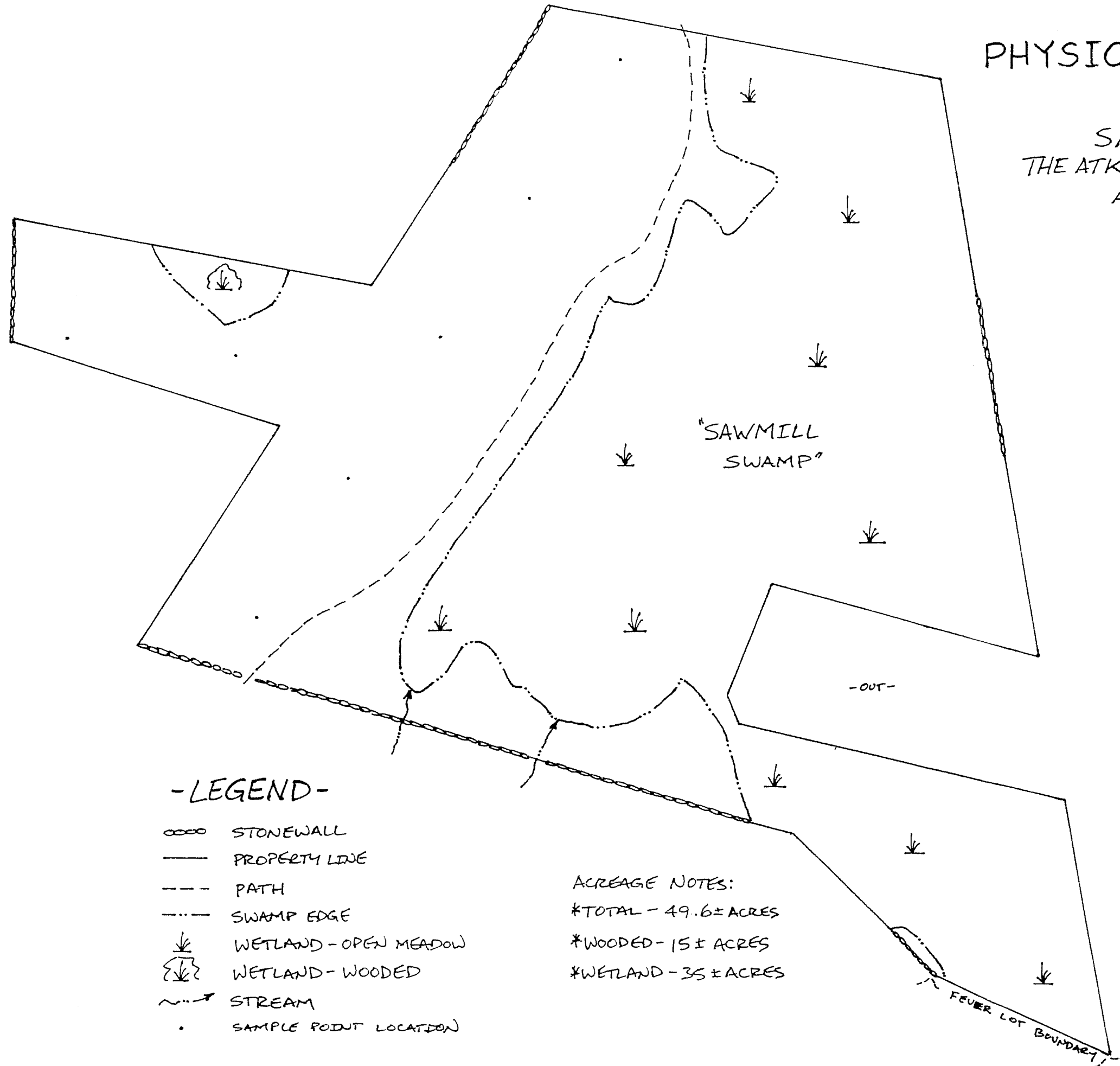
MAP BASED ON:  
\*REGISTERED SURVEY - C. MARTIN ASSO., MAY '77  
# D-7375, D-9716, & D-11188  
\*ATKINSON TAX MAPS: 3-19, 3-108, 4-11  
\*TRAD. MAP - C. LAOD, 1985  
\*AERIAL PHOTO - ASCS #33015-174-245A (1974)  
\*FIELD CRUISE - C. MORENO, AUG 89

INTERIOR DETAIL IS APPROXIMATE.



# PHYSICAL FEATURES MAP of the

SAWMILL SWAMP LOT  
THE ATKINSON TOWN FORESTLANDS  
ATKINSON, NEW HAMPSHIRE  
49.6± ACRES



## -LEGEND-

- o-o-o STONEWALL
- PROPERTY LINE
- - - PATH
- · · SWAMP EDGE
- ↓ WETLAND - OPEN MEADOW
- ↓ ↓ WETLAND - WOODED
- ~ ~ ~ STREAM
- SAMPLE POINT LOCATION

ACREAGE NOTES:  
\*TOTAL - 49.6± ACRES  
\*WOODED - 15± ACRES  
\*WETLAND - 35± ACRES

MAP DRAWN BY:  
CHARLES A. MORENO  
CONSULTING FORESTER  
CENTER STRAFFORD, NH  
AUGUST 1989

MAP BASED ON:  
\*REGISTERED SURVEY - J.M. LAVALLE ASSO.  
#D-12209, NOV. 1983  
\*ATKINSON TAX MAP: 18 (LOTS #78, 83)  
\*AERIAL PHOTO - ASCS #33015-17A-243  
\*FOREST CRUISE - C. MORENO, AUG 1989

# PHYSICAL FEATURES MAP of the

## FEUER LOT

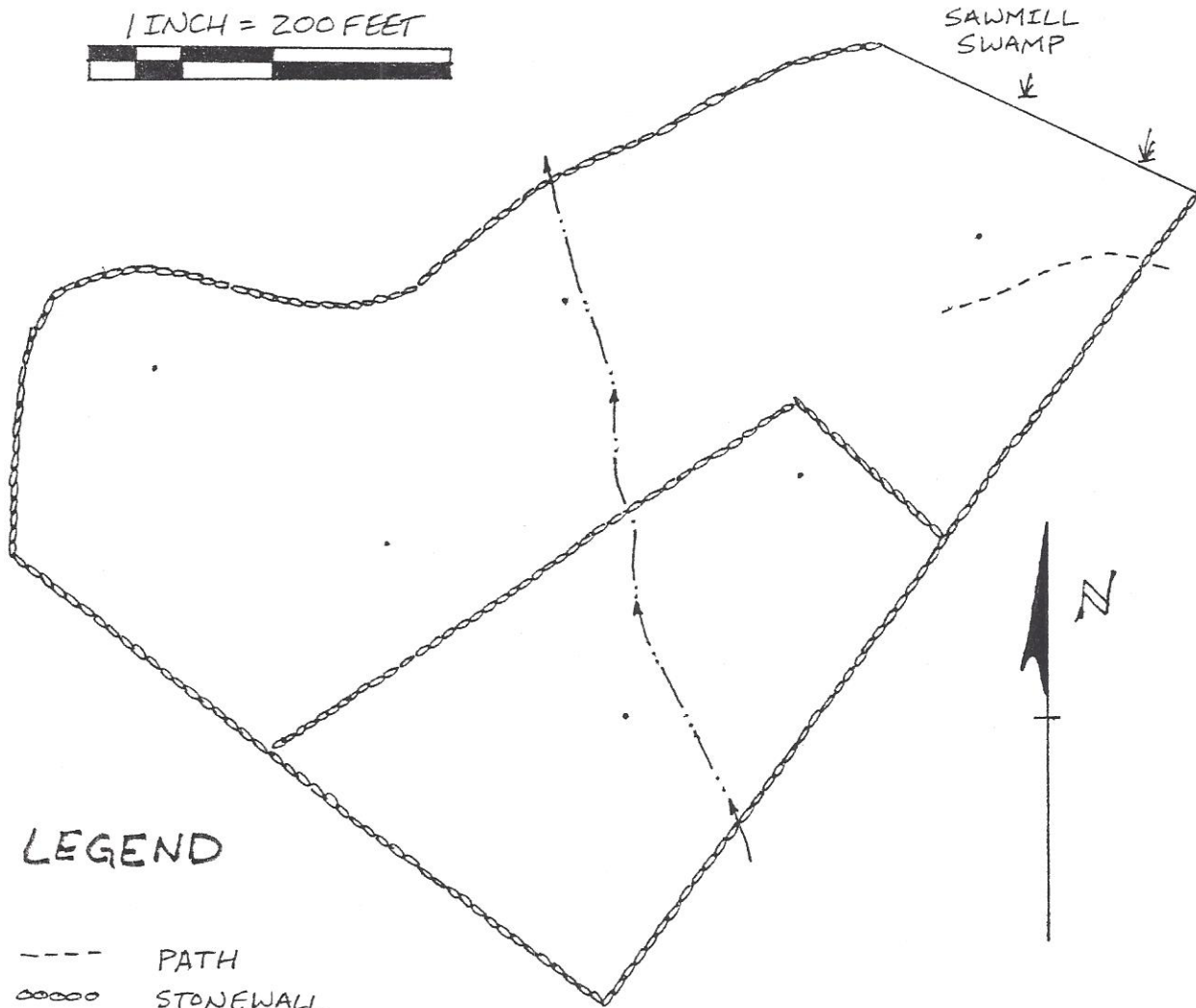
THE ATKINSON TOWN FORESTLANDS

ATKINSON, NEW HAMPSHIRE

17.4± ACRES

MAP SCALE

1 INCH = 200 FEET



### LEGEND

- PATH
- oooooo STONEWALL
- PROPERTY LINE
- ~...~ STREAM
- ↓ WETLAND-OPEN
- SAMPLE PLOT LOCATION

MAP DRAWN BY:  
CHARLES A. MORENO  
CONSULTING FORESTER  
CENTER STRAFFORD, NH  
603 335-1961 AUG 1989

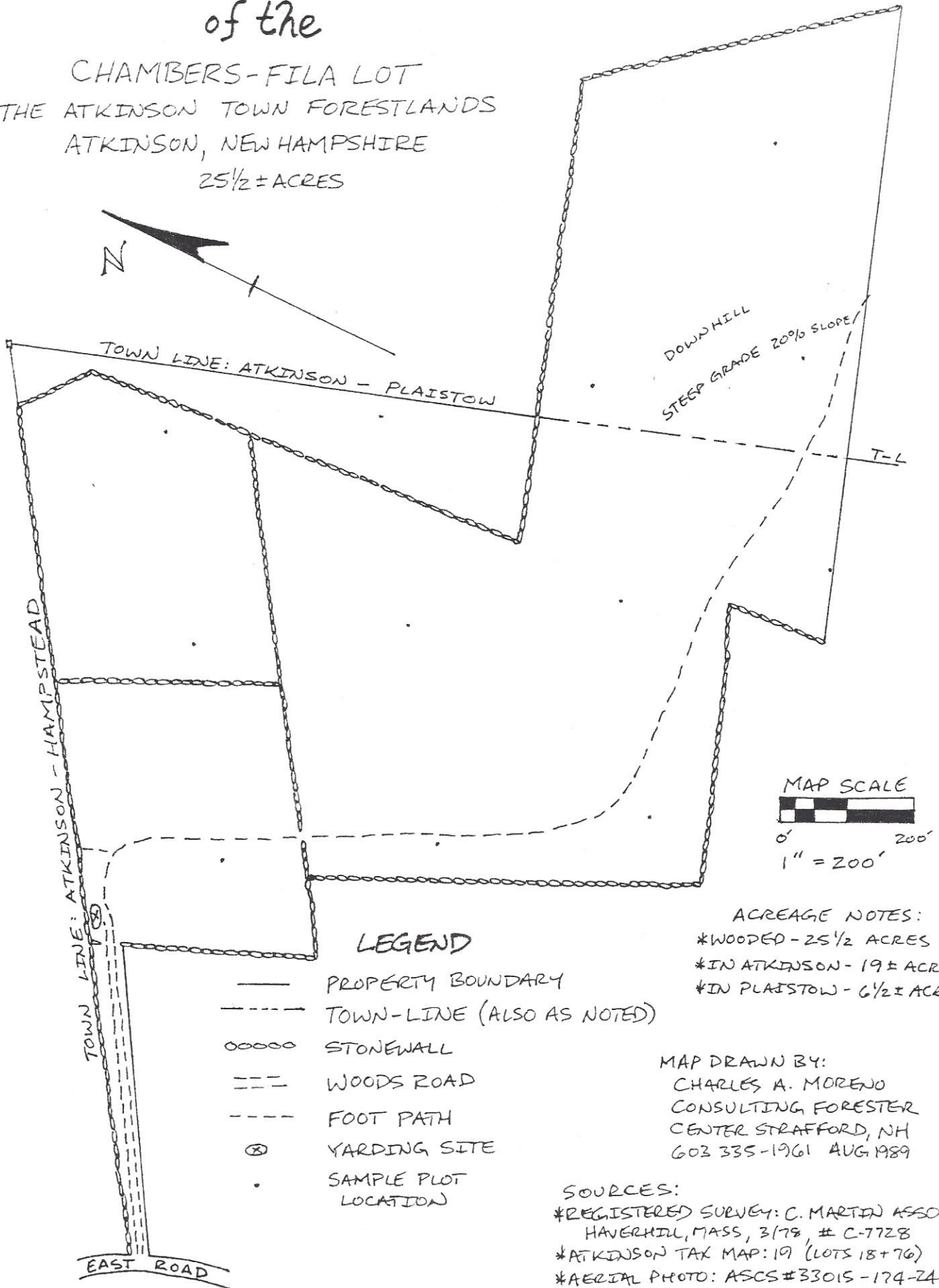
### SOURCES:

- \*REGISTERED SURVEY BY:  
J.M. LAVELLE ASSO., NOV.'81, C #10652
- \*ATKINSON TAX MAP #18 (LOT 77)
- \*AERIAL PHOTO: ASCS #33015-174-243
- \*FIELD CRUISE: C. MORENO AUG 1989

# PHYSICAL FEATURES MAP

of the

CHAMBERS-FILA LOT  
 THE ATKINSON TOWN FORESTLANDS  
 ATKINSON, NEW HAMPSHIRE  
 25 1/2 ± ACRES



## LEGEND

- PROPERTY BOUNDARY
- - - TOWN-LINE (ALSO AS NOTED)
- ooooo STONEWALL
- == WOODS ROAD
- - - FOOT PATH
- ⊗ YARDING SITE
- SAMPLE PLOT LOCATION

ACREAGE NOTES:  
 \*WOODED - 25 1/2 ACRES  
 \*IN ATKINSON - 19 ± ACRES  
 \*IN PLAISTOW - 6 1/2 ± ACRES

MAP DRAWN BY:  
 CHARLES A. MORENO  
 CONSULTING FORESTER  
 CENTER STRAFFORD, NH  
 603 335-1961 AUG 1989

SOURCES:  
 \*REGISTERED SURVEY: C. MARTIN ASSO.  
 HAVERHILL, MASS, 3/78, # C-7728  
 \*ATKINSON TAX MAP: 19 (LOTS 18+76)  
 \*AERIAL PHOTO: ASCS #33015-174-243A  
 \*FOREST CRUISE: C. MORENO, AUG 1989

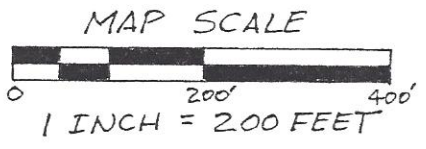
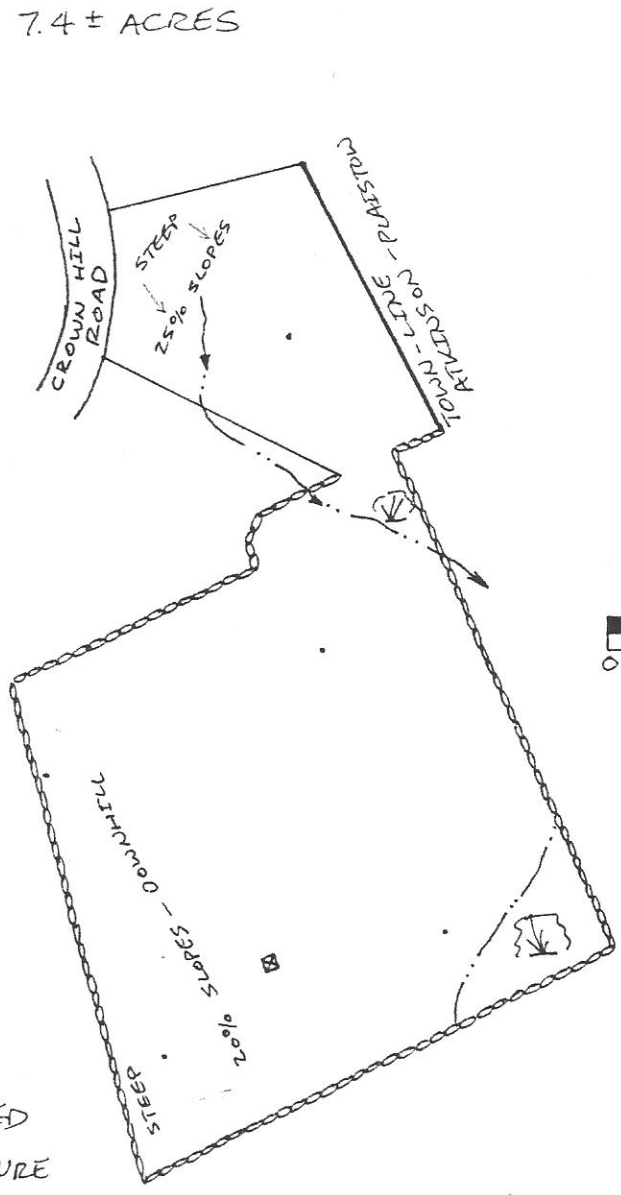
# PHYSICAL FEATURES MAP of the

THE NOYES LOT

THE ATKINSON TOWN FORESTLANDS

ATKINSON, NEW HAMPSHIRE

7.4 ± ACRES



## LEGEND

- oooo STONEWALL
- PROPERTY LINE
- ~> STREAM
- - - WETLAND EDGE
- WETLAND-WOODED
- ▣ GRANITE STRUCTURE
- SAMPLE PLOT LOCATION

MAP DRAWN BY:  
CHARLES A. MORENO  
CONSULTING FORESTER  
CENTER STRAFFORD, NH  
603 335-1961 AUG 1989

- SOURCES:
- \* REGISTERED SURVEYS BY: V. W. DINGMAN, III  
HAMPSTEAD, NH 6/75 #C6060 & 12/75 #B6691
  - \* ATKINSON TAX MAP 19, LOT 61
  - \* AERIAL PHOTO: ASCS #33015-174-243A
  - \* FOREST CRUISE: C. MORENO, AUG '89

FOREST ANALYSIS - DATA

### INVENTORY METHODS

The woodlands were cruised with a 20-factor prism using the variable-plot sampling technique. A total of 108 plots were taken, spaced on a 325' x 325' grid.

DBH was measured to the nearest inch using a Biltmore Stick. Merchantable height was estimated in logs (16-foot section), with softwood sawtimber measured to the nearest half log and hardwood sawtimber measured to the nearest quarter log. Merchantable height for firewood was estimated to the nearest five-foot section.

The minimum small-end diameters for determining the merchantable height of sawlog trees were as follows: hardwoods and hemlock - 10"; white pine - 8". Firewood was scaled to a 3" top diameter.

At each plot, data was taken for total volume, and volume prescribed for harvest. Also recorded were basal area/acre, average tree grade, soil and site conditions, silvicultural stage, relative stocking, understory species, and recommended treatments.

Cruise data was divided into nine strata, corresponding to each parcel. In addition, substrata were created for the Sawyer Lot data, as this is a relatively large property with heterogeneous forest types. Data was stratified by the seven forest types identified in this parcel.

Cruise error on a 90% confidence level was  $\pm 21.4\%$  for the total sawtimber volume estimate and  $\pm 9.9\%$  for the total firewood estimate. These error levels reflect a high degree of variability in the sawtimber composition of the properties, while firewood stocking was relatively more consistent from parcel to parcel. This condition is a result of the forest's young age in several of the properties inventoried.

TOTAL VOLUME AND VALUATION

The Atkinson Town Forestlands - All Parcels

<u>SPECIES</u>	<u>TOTAL VOLUME</u>	<u>PRICE/ MBF</u>	<u>TOTAL VALUE</u>
WP	945.9 MBF	\$ 95/MBF	\$ 89,861
HM	89.5	\$ 30	2,685
RO	117.8	\$280	32,984
BO	36.9	\$150	5,535
WD	21.3	\$100	2,130
SWD	13.9	\$100	1,390
WB	13.5	\$ 50	675
BB	7.7	\$ 45	347
WA	7.0	\$125	875
SM	4.2	\$ 50	210
HI	35.2	\$ 30	1056
TOTALS	1,292.9± MBF		\$137,748
Firewood	5,509 ± cords	@ \$ 11/Cord	\$ 60,599
		GRAND TOTAL	\$198,347
		ROUNDED	<u>\$198,500</u>

August 1989

Valuation is based on competitive market prices for stumpage in Rockingham County, NH, in August 1989. Stumpage prices have been adjusted for overall timber grade and various logging factors. Stumpage prices are constantly subject to change according to market trends.

TIMBER VOLUME TOTALS

by Parcel

LOT	WP	HM	RO	Bir	Other Hdwd	Pal	Total Sawtim.	FWD
Stickney		11.3	16.8		11.3		39.4	600
Marshall	400.5	73.5	4.7	4.8	16.8	8.9	509.2	416
Chadwick	2.0		2.4				4.4	462
Slade	3.9		28.8	1.7		5.7	40.1	301
Sawyer	439.2		5.8	7.5	40.5	7.2	486.3	2297
Sawmill	55.5						55.5	206
Feuer	9.7		25.4	4.4		5.6	45.1	572
Ch-Fila	25.0	4.7	30.0	2.8	14.7	7.8	85.0	459
Noyes	10.1		3.9				14.0	196
TOTALS	945.9	89.5	117.8	21.2	83.3	35.2	1292.9	5509

\* Total Sawtimber: 1,292,900 ± Board Feet

\* Total Firewood: 5,509 ± Cords

## NOTES:

- First seven columns are sawtimber estimates. Last column, "FWD", is firewood estimates.
- All sawtimber figures in table are by thousand board feet (MBF). One must multiply numbers by 1,000 to get board foot figures.
- Firewood estimate is measured by cord units.
- Tree species key: WP = White Pine; HM = Hemlock; RO = Red Oak; Bir = Birch (white, black, and yellow); Other Hdwd (Hardwood) includes black, white and swamp white oaks, white ash, and sugar maple; Pal (Pallet) = Hickory (shagbark and pignut).



TIMBER VOLUME PRESCRIBED FOR HARVEST: 1989 - 1994

by Parcel

LOT	WP	HM	RO	Bir	Other Hdwd	Pal	Total Sawtim.	FWD
Stickney								(110)
Marshall	139.9	13.5		4.8		3.4	161.6	189
Chadwick								( 68)
Slade			(2.2)					( 14)
Sawyer	51.7			1.0				753
Sawmill	(6.0)							( 69)
Feuer								204
Ch-Fila	(5.7)							( 26)
Noyes								91
TOTALS	191.6	13.5		5.8		3.4	214.3	1237

\* Harvestable Sawtimbers: 214,300 ± Board Feet

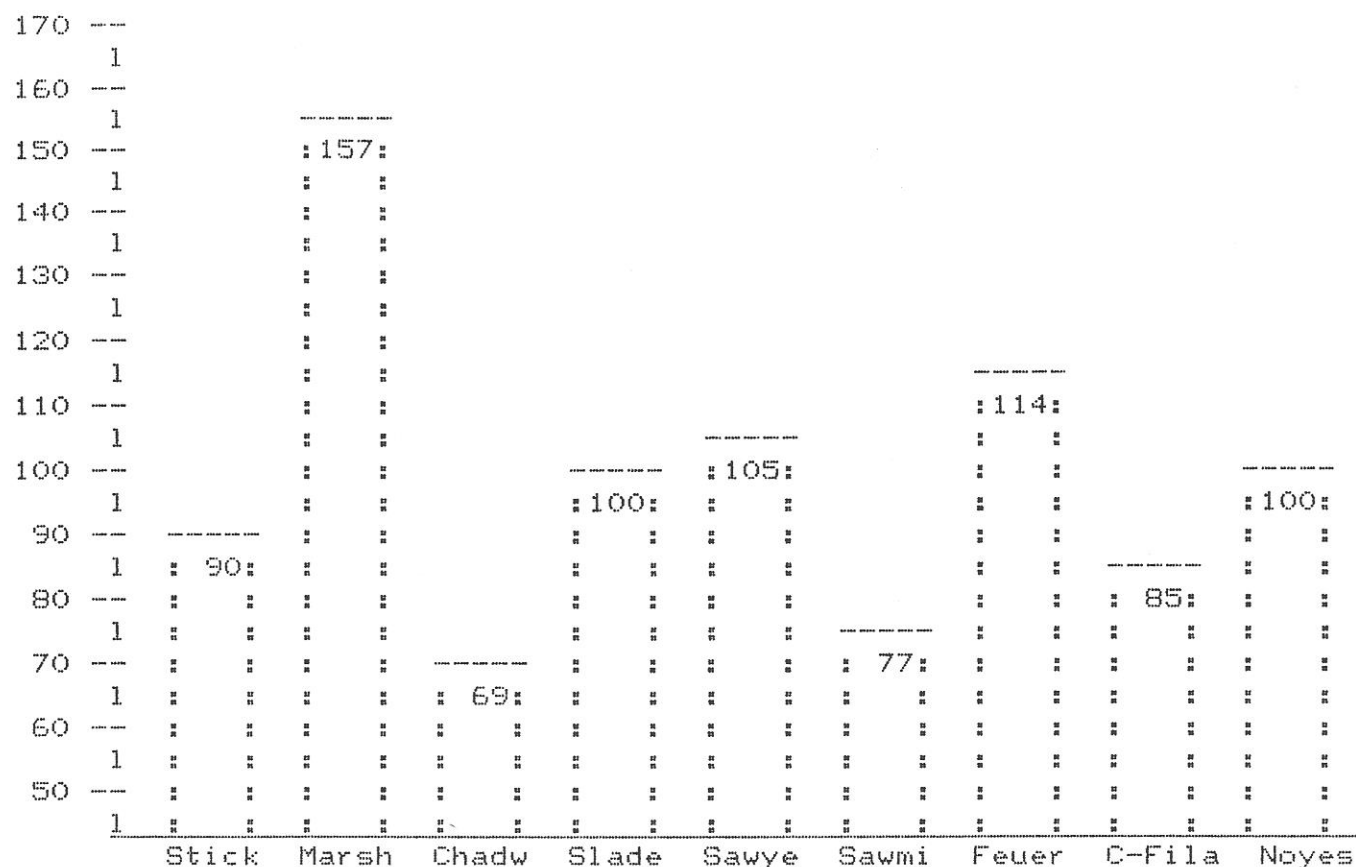
\* Harvestable Firewood: 1,237 ± Cords

## NOTES:

- First seven columns are sawtimber estimates. Last column, "FWD", is firewood estimates.
- All sawtimber figures in table are by thousand board feet (MBF). One must multiply numbers by 1,000 to get board foot figures.
- Firewood estimate is measured by cord units.
- Tree species key: WP = White Pine; HM = Hemlock; RO = Red Oak; Bir = Birch (white, black, and yellow); Other Hdwd (Hardwood) includes black, white and swamp white oaks, white ash, and sugar maple; Pal (Pallet) = Hickory (shagbark and pignut).
- Figures in parenthesis are excess stocking currently available for thinning, however, unfeasible for commercial harvest because of relatively small volume involved.

HISTOGRAM: Basal Area per Acre  
by Parcel

Ft<sup>2</sup>/Acre



Discussion

To explain what basal area is, first envision a tree's trunk being cut horizontally 4.5 feet above the ground. The area of the exposed surface is the basal area of the tree, here expressed in square feet. A 14-inch diameter tree has approximately 1 square foot of basal area.

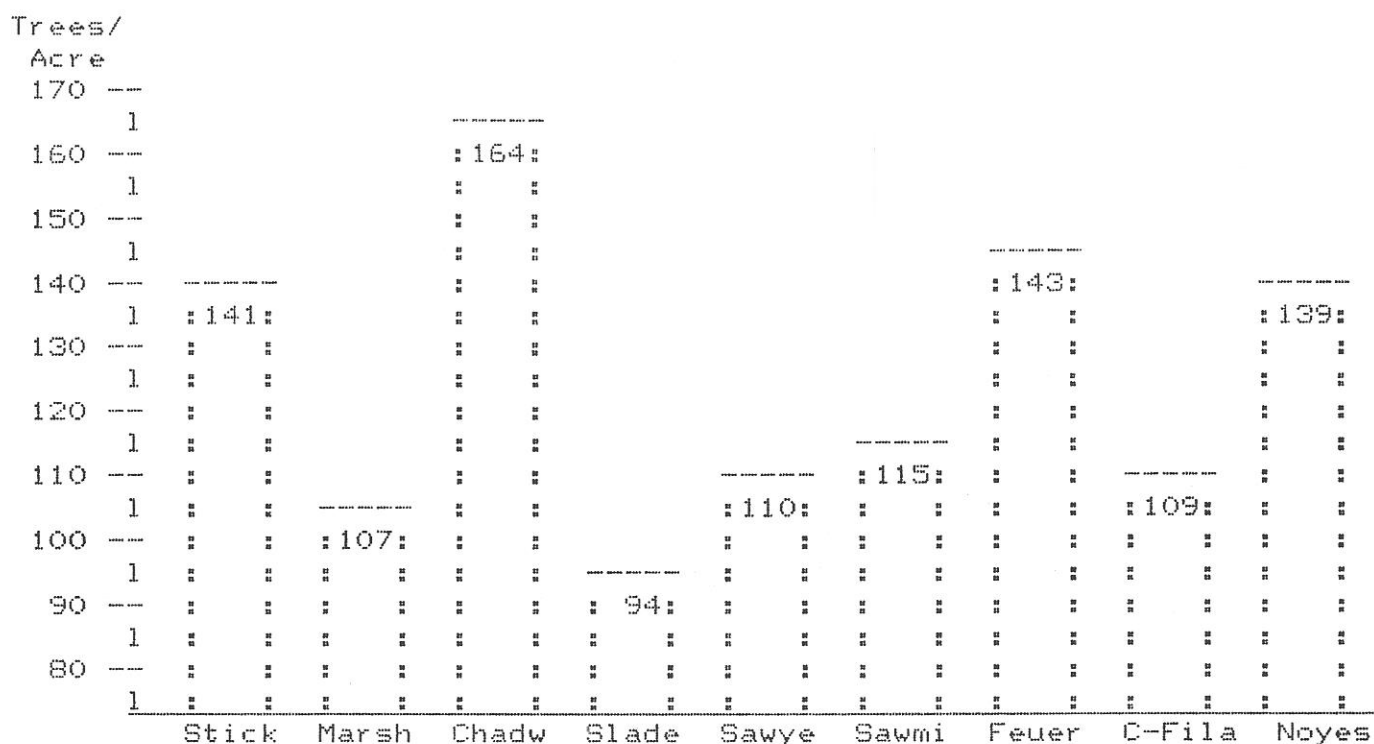
Basal area per acre (BA/AC) is a measure of the stocking or density of a forest. It is the cumulative basal area of the trees in an acre, averaged throughout the stand. Two variables affect basal area per acre: the average size of the trees, and the numbers of trees.

The above histogram shows that the Marshall Lot is very heavily

stocked; though this is partly a function of the pine-hemlock type that covers much of the parcel, the lot is in need of thinning. Though less recognizable from this table, the Feuer Lot is also heavily stocked. A BA/AC reading of over 100 square feet for a hardwood stand indicates heavily-stocked conditions. The Sawyer Lot is variably stocked; some areas are overstocked, while other areas have been thinned to a desirable stocking level. Furthermore, some areas are stocked with white pine, which generally tolerates higher stocking levels than hardwoods. The Noyes Lot, primarily hardwood, is also in a fully stocked condition.

Several of the parcels, including the Stickney, Slade, and Chambers-Fila, have been recently thinned and are a desirable stocking levels. The Chadwick and Sawmill Swamp Lots have received little or no silvicultural treatment, and have naturally developed in an understocked condition. Treatment should be delayed until adequate stocking levels are reached, unless work towards stand conversion is planned.

HISTOGRAM: Trees per Acre  
by Parcel



Discussion

The number of trees per acre in a forest is affected by both the relative size of the trees and the density of those trees. Though two forests may have equal numbers of trees per acre, the forest with the larger trees will appear far denser.

In the histogram, the two lots with the greatest numbers of trees per acre, the Stickney and Chadwick Lots, also have relatively small trees, and therefore are not overstocked. The measure of numbers of trees per acre helps indicate how many thinnings may be feasibly scheduled in the time before a particular stand reaches maturity. Thus, the Marshall and Slade Lots, with the assumption that neither stand is already mature, may only see one more thinning before regeneration harvests must begin.

HISTOGRAM: Mean Stand Diameter  
by Parcel

DBH Inches	Stick	Marsh	Chadw	Slade	Sawye	Sawmi	Feuer	C-Fila	Noyes
17	---	-----							
16	1	:16.4							
15	1	:							
14	1	:		-----					
13	1	:		:14.0	-----				
12	1	:		:	:13.2		-----	-----	
11	1	:		:	:	-----	:12.1	:12.0	-----
10	1	:10.8	:	:	:	:11.1	:	:	:11.5
9	1	:							
8	1	:	:8.8	:	:	:	:	:	:
7	1	:	:	:	:	:	:	:	:

### Discussion

Mean Stand Diameter (MSD) is the average diameter at breast height (DBH, at 4.5 feet above the ground) of the trees in a forest. Several factors influence MSD, including: species composition, site and soil quality, forest stocking, aspect, insect and disease problems, climate, and harvest history, among other factors. However, the relative age of the stand, in the context of species composition, is usually the most important factor determining MSD.

The high MSD for the Marshall Lot shows the great difference in age of this forest when compared to the much younger Chadwick Lot. Conversely, the Marshall Lot is fairly close in age to the Slade Lot and parts of the Sawyer Lot. This difference in MSD can be mostly attributed to the softwood composition of the Marshall Lot versus the greater hardwood

composition of the latter lots.

The combination of low stocking and relatively small-sized trees, render both the Chadwick and Sawmill Swamp Lots unfeasible presently for forest improvement work such as a commercial thinning.

100-10000-10000

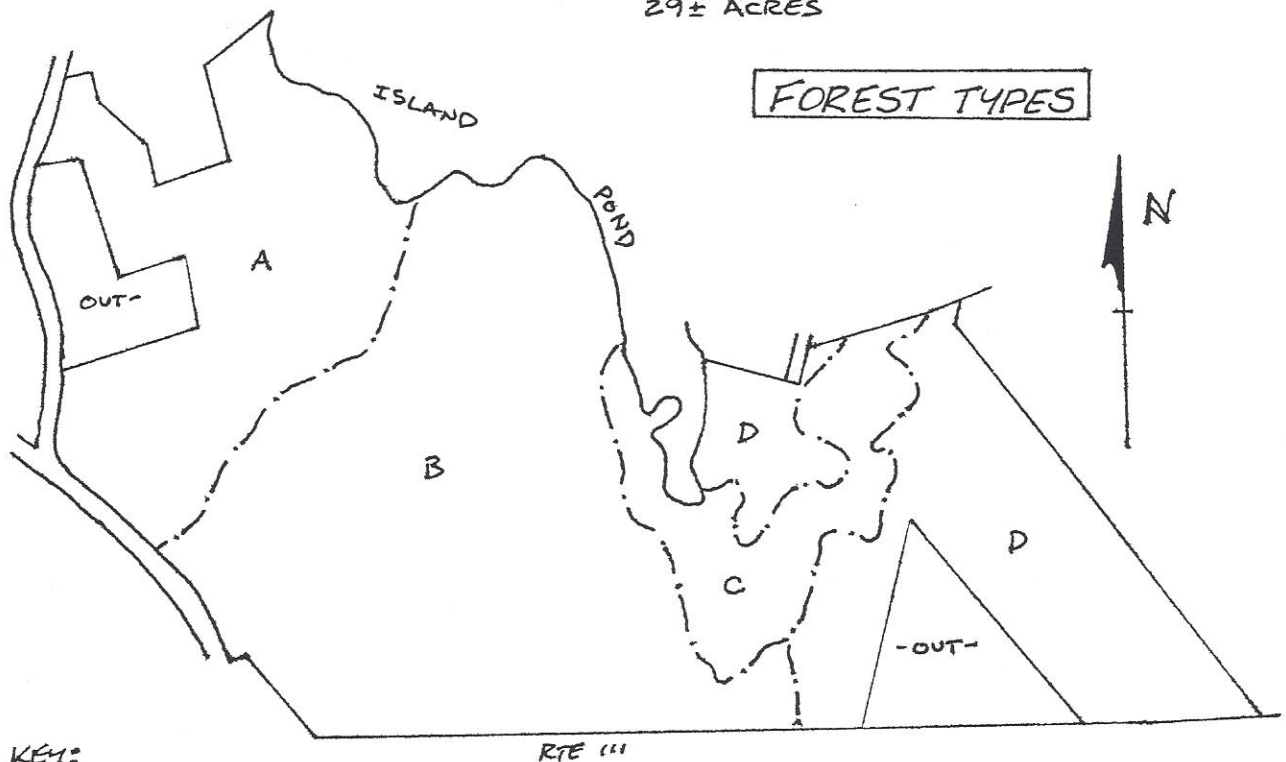
FOREST DESCRIPTION AND RECOMMENDATIONS

THE STICKNEY LOT



# THE STICKNEY LOT

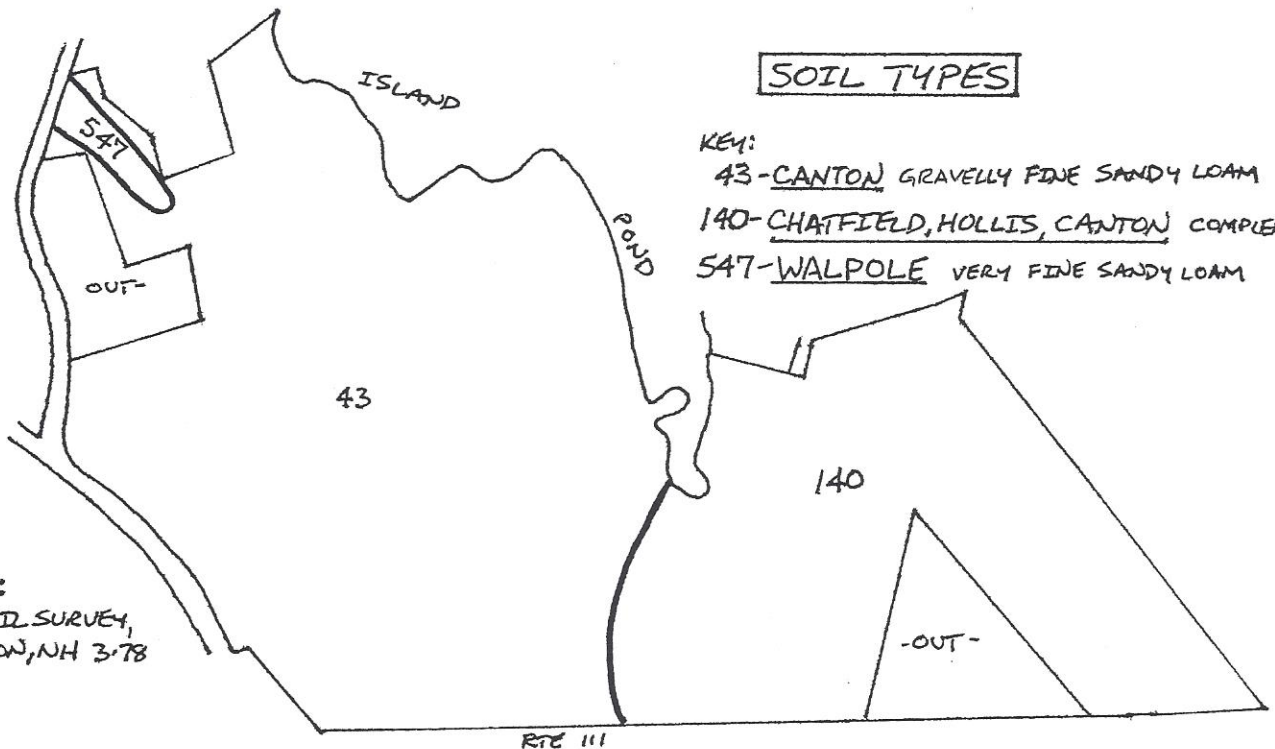
29± ACRES



## FOREST TYPES

KEY:

- A - UPLAND HARDWOOD, UNEVENAGED (J 5 B/C) - 6.2± ACRES
- B - UPLAND HARDWOOD, INTERMEDIATE-AGED (J 3 B) - 13± ACRES
- C - HARDWOOD/WHITE PINE/HEMLOCK (T 3 B) - 2.8± ACRES
- D - UPLAND HARDWOOD, UNDERSTOCKED (J 2 C) - 7± ACRES



## SOIL TYPES

KEY:

- 43 - CANTON GRAVELLY FINE SANDY LOAM
- 140 - CHATFIELD, HOLLIS, CANTON COMPLEX
- 547 - WALPOLE VERY FINE SANDY LOAM

SOURCE:  
SCS SOIL SURVEY,  
ATKINSON, NH 3-78

SCALE:



MAPS BY: CHARLES A. MORENO, CONSULTING FORESTER  
CTR. STRAFFORD, NH AUG. 1989

THE STICKNEY LOT

Total Area: 29+Acres  
 Wooded Area: 29+Acres

TECHNICAL DATA

Basal Area/Acre	90.0 Sq. Ft.
Trees/Acre	141.5 Trees
Mean Stand Diameter	10.8 Inches
Growth Rates	2.0 - 2.5%
Site Index	60 - 65 (WP)
Softwood Sawtimber	11.3± MBF
Hardwood Sawtimber	28.1± MBF
Firewood Volume	600± CORDS

WOODLAND CHARACTERISTICS

Location: Northeast of the intersection of Route 111 and Conley's Grove Road.

Access: Good to excellent. Road frontage in various locations. Interior trail system. Distances for logging: 0 to 770 feet. Substantial water frontage (marshy) on Island Pond.

Soils: Canton gravelly fine sandy loam, (especially productive for pine growth, fair to good for oak; 63% of the area). Chatfield/Hollis/Canton soil complex, (fair to good productivity for oak and pine growth; 35% of the area). Walpole very fine sandy loam, very stony (poorly drained soil in northwest corner of lot, poor for pine/oak growth; 2% of the parcel).

Topography: Light to steeply sloping (3 to 25% slopes). Terrain somewhat rocky. Mostly well-drained soils.

SPECIES COMPOSITION

Species	% of Basal Area	% of Timber Volume
Red Oak	40%	43%
Black Oak	15	17
Hemlock	10	26
Black Birch	9	
Red Maple	6	
Beech	5	
Pignut Hickory	5	
White Pine	5	8
White Oak	3	6
Shagbark Hickory	2	

SILVICULTURAL RECOMMENDATIONS

DESCRIPTION: The Stickney Lot has seen several "high-grade" harvests in its history, where cutting concentrated on the removal of the more valuable trees, primarily white pine. As a result, species composition is now mostly hardwoods. Generally, white pine would fair better than oak on the well-drained, gravelly soils of the lot. A long-term management goal, then, is to increase the white pine component on the lot.

Four forest types were identified on the property. Trees range in age from 60 to 80 years. Stand D has younger growth of about 50 years. Stand A was high-graded as recently as 10 years ago, though some older oak sawtimber trees were retained.

The Stickney Lot remains highly susceptible to gypsy moth attack due to the great concentration of oak and dry site conditions. Maintaining

a mix of tree species, with emphasis on the hickories, will mitigate the effects of the gypsy moth.

In 1985, an improvement cutting/thinning was done on 25 acres of the property. The aims of this cutting were to: 1) remove poorly formed, weak, and diseased trees, thereby upgrading stand quality; and 2) thin around the crowns of promising oak crop trees to increase their growth. Over the short term, the goals of thinnings will be to develop the existing oak crop trees into valuable sawtimber, while encouraging a mix of species to lessen susceptibility to the gypsy moth.

REGENERATION: Red maple, black birch, beech, and white pine.

SILVICULTURAL STAGE: Intermediate, mostly commercial.

PRESCRIPTIONS:

7 - 10 Years Improvement Cut/Thinning. Once stands have regained heavy stocking, follow-up treatment similar to 1985 cut. Retain any and all white pine as seed trees.

20 -25 Years Crown Thinning. Last thinning before regeneration cuttings. Time harvest for good pine seed year, to encourage advance pine regeneration.

MULTIPLE-USE RECOMMENDATIONS

RECREATION: A well-maintained trail bisects the property from the main access point on Route 111 to Island Pond. The trail network may be expanded to link a series of smaller footpaths on the east side of the property. The best route perhaps would be to follow along the shore of Island Pond, as this affords scenic views, and skirts most of the steep ridge in the central part of the property. A spur trail may also be considered to the west of the property, following an old skid path, to Stickney Road.

Water-related recreation includes access to Island Pond via a canoe ramp on a 1/4 acre town-owned lot abutting the Stickney Lot. Boating access directly from the Stickney Lot is not feasible due to a marshy shoreline, and the long walk to reach the shore.

**WILDLIFE:** Over 50% of forest composition is oak, representing an abundant supply of mast (acorns) for wildlife, at least on good acorn years. A great variety of mammals and birds utilize acorns as a staple food, including deer, raccoon, fox, squirrels, turkey, and grouse. The supply of mast and presence of hemlock cover on this and abutting properties, provide both food and winter habitat for deer. Favoring oak for wildlife is consistent with silvicultural recommendations to grow oak crop trees to maturity, well into prime nut-bearing age. White oak, shagbark and pignut hickory, and to an extent beech, should also all be favored as alternative mast sources.

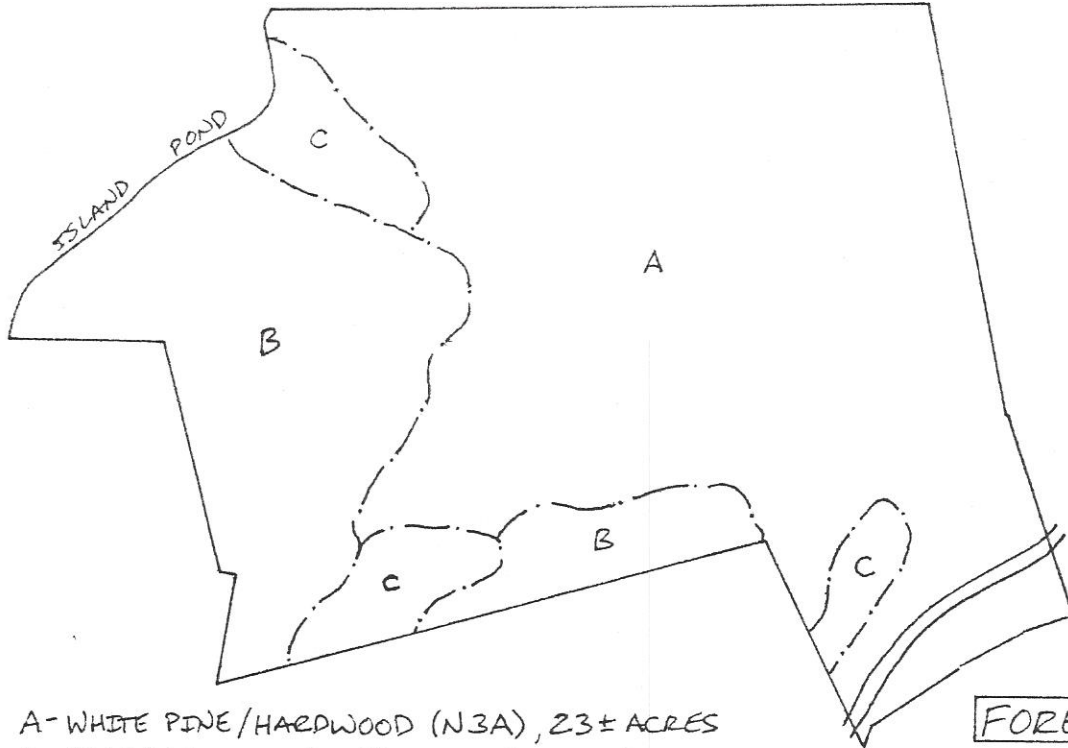
The shrubby edge along parts of the Island Pond shore afford cover and food for small birds. Dead trees along the shore edge and scattered about the property should be retained as potential cavity trees.

**AESTHETICS:** Forest management activity on the lot was carried-out in 1985 under strict harvest specifications, including: well-utilized trees, lopped slash, minimal damaged trees, small landings, and an evenly distributed residual stand. The intent is for forest management to remain compatible with public use and enjoyment of the land.

THE MARSHALL LOT

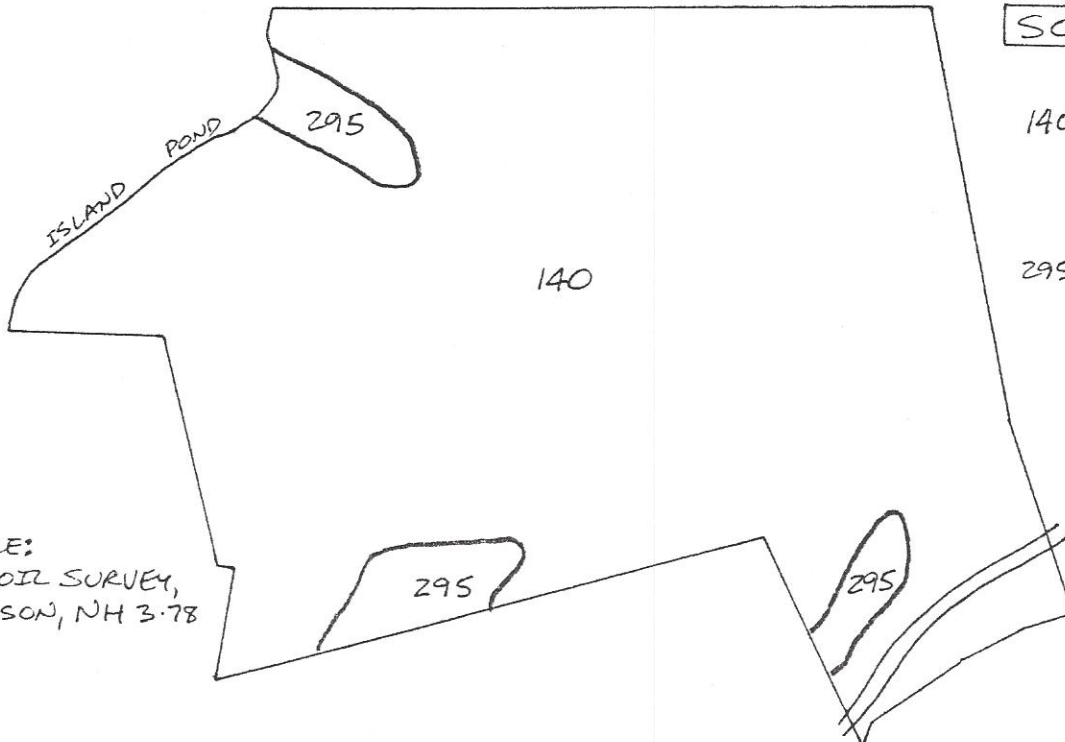
# THE MARSHALL LOT

35± ACRES



- A- WHITE PINE/HARDWOOD (N3A), 23± ACRES
- B- PINE/HEMLOCK/HARDWOOD (T3/4A), 9± ACRES
- C- WETLAND HARDWOODS (Q3B), 3± ACRES

FOREST TYPES



SOIL TYPES

- 140-CHATFIELD/  
HOLLIS/CANTON  
COMPLEX
- 295-GREENWOOD  
MUCKY PEAT

SOURCE:  
SCS SOIL SURVEY,  
ATKINSON, NH 3-78

MAPS BY: CHARLES A. MORENO, CONSULTING FORESTER  
CTR. STRAFFORD, NH AUGUST 1989

THE MARSHALL LOT

Total Area: 35+Acres  
 Wooded Area: 35+Acres

TECHNICAL DATA

Basal Area/Acre	156.7 Sq. Ft.
Trees/Acre	106.8 Trees
Mean Stand Diameter	16.4 Inches
Growth Rates	2.0 - 2.5%
Site Index	60 - 65 (WP)
Softwood Sawtimber	476.0± MBF
Hardwood Sawtimber	35.2± MBF
Firewood Volume	416± CORDS

WOODLAND CHARACTERISTICS

Location: In northwest section of Atkinson, of Houles Grove Road. Abuts Hampstead town-line.

Access: Fair to good. 350' of road frontage. Good interior trail system. Long skids. Distances for logging: 0 to 1800 feet. Water frontage (800 feet) on Island Pond.

Soils: Chatfield/Hollis/Canton soil complex, (fair to good productivity for oak and pine growth; 95% of the area); Greenwood mucky peat, (poor productivity, wetland areas; 5% of the parcel).

Topography: Level to moderately sloping (0 to 15% slopes). Terrain fairly free of rocks.



SPECIES COMPOSITION

<u>Species</u>	<u>% of Basal Area</u>	<u>% of Timber Volume</u>
White Pine	56%	79%
Hemlock	13	14
Black Birch	7	<1
Red Oak	5	1
Red Maple	5	
White Ash	4	<1
Black Oak	2	1
Sugar Maple	2	<1
White Oak	1	<1
White Birch	1	<1
Pignut Hickory	1	1
Shagbark Hickory	1	<1
Beech	1	

SILVICULTURAL RECOMMENDATIONS

DESCRIPTION: The Marshall Lot's farming past is reflected in its numerous stonewalls and its heavy white pine component. The forest has not been cut in a long-time; trees range from 75 to over 100 years of age. Additional features such as extensive water frontage on Island Pond and a fine trail loop, serve to make the Marshall Lot one of the most scenic of all the Town Forest properties.

Three forest types compose this parcel, summarized as follows:

- A) Pine and upland hardwood mix in the eastern two thirds of the lot. Some variation in the proportion of hardwood to softwood, as well as age.

This stand type includes a two+ acre white pine plantation area planted some 70 years ago. B) Pine-hardwood mix to the west with the addition of hemlock. Ravine along southerly bound of property, as well as shoreline contain this type. Larger hemlock are especially abundant in the north-facing slopes that drop towards Island Pond. C) Wetland areas consisting primarily of red maple.

Presently, most areas are in a heavily-stocked condition. Initial forest improvement work should focus on improving stand quality and working with the species mix, to insure that desirable species regenerate, particularly in the pine-hardwood type. An even-aged management system will be followed for the pine-hardwood type, leading to regeneration cuttings using the shelterwood technique. Conversely, as hemlock is well established in the latter type, and is important aesthetically, an uneven-aged management system will be employed in this area. The selective cutting technique will favor the regeneration and development of shade tolerant species such as hemlock, sugar maple (in vicinity of seed trees), and beech.

REGENERATION: Hemlock and shade-tolerant hardwoods; white pine pockets.

SILVICULTURAL STAGE: Intermediate to mature.

PRESCRIPTIONS:

1 - 5 Years Improvement Cut/Thinning. Initial treatment in all areas except wetlands. Remove diseased, weak, poorly-formed trees; thin around crowns of more desirable trees. Favor white pine, red and white oak, sugar maple, the hickories, and white ash as future seed trees. Retain hemlock cover in vicinity of pond.

Patch Cutting in maple swamp areas. Increased light in small 1/10 acre openings will spur growth

of shrubby vegetation beneficial to wildlife.

Stocking: Original -- 157 Sq. Ft./Acre

Residual -- 115 Sq. Ft./Acre

10 -15 Years Shelterwood Cut, 1st stage. In Stand A, remove 25 -30% of canopy, leaving a well-distributed stand of pine and oak seed trees. Time harvest for late fall or spring following pine cone year.

Selective Cut. Stand B, hemlocks. Thin stand, removing 25 - 30% of stocking, variously-sized trees, to inspire regeneration of shade tolerant species.

15 -20 Years Hardwood sapling control. Brushcutter work on young hardwoods competing with pine regeneration.

20 -25 Years Shelterwood Cut, 2nd stage. Four stage "shelterwood" recommended over 30 to 35 year span, to address aesthetics. Time for pine seed year.

#### MULTIPLE-USE RECOMMENDATIONS

RECREATION: An excellent loop trail and self-guiding nature walk was created in 1985 by Chet Ladd of the Atkinson Conservation Commission and Les Clark of SPNHF. The trail is well-travelled, primarily by hikers, horseback riders, and skiers.

The trail guide, informative and interesting for persons of all ages, describes natural and historical features at 26 stations. Occasional updating of the guide may be necessary. More importantly, good access to guides through distribution at Town Meeting, the schools, library, and Town Hall will inform others of the trail's presence.

Care must be taken during silvicultural activity not to disturb the stations, and minimize impact on the trail. Aesthetics will be an impor-

tant consideration. Silvicultural activity can be incorporated as part of the educational nature trail through the parcel.

**WILDLIFE:** The Marshall Lot represents a significant area of older-growth forest which is attractive to certain wildlife. Among these is the spectacular pileated woodpecker, which prefers larger trees (12"+) to feed and nest in. Mammals such as raccoon, porcupine, and fisher, are also apt to den in large, hollow trees; good den tree candidates were noted on the lot.

A 1 to 2 acre area of older growth forest should be left undisturbed to provide for this type of habitat. A good potential area for this is a small grove of old hardwood and hemlock in the center of the lot, just to the north of the loop trail.

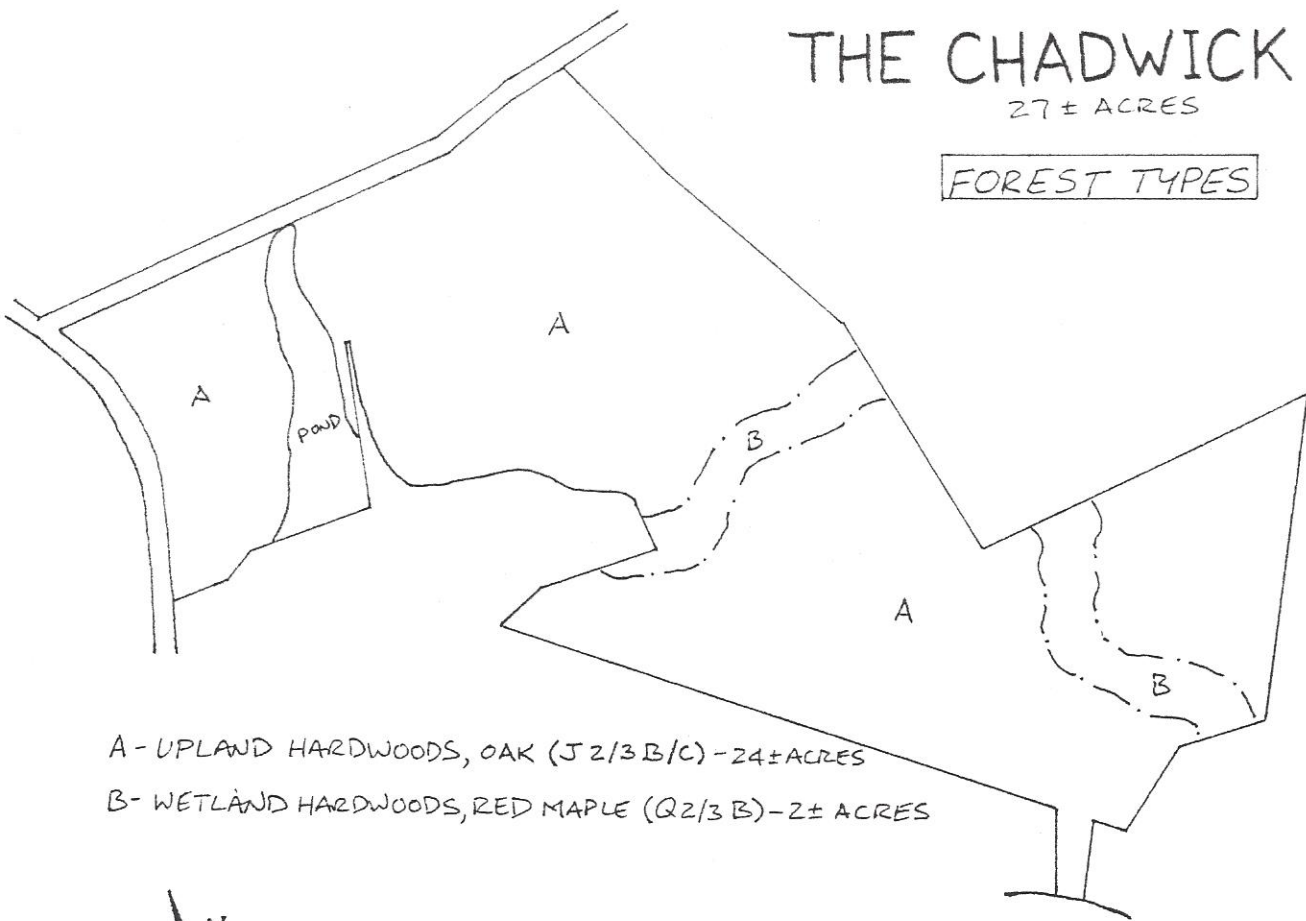
The hemlock cover, particularly near wetlands, and scattered oak, provide good habitat conditions for deer.

THE CHADWICK LOT

# THE CHADWICK LOT

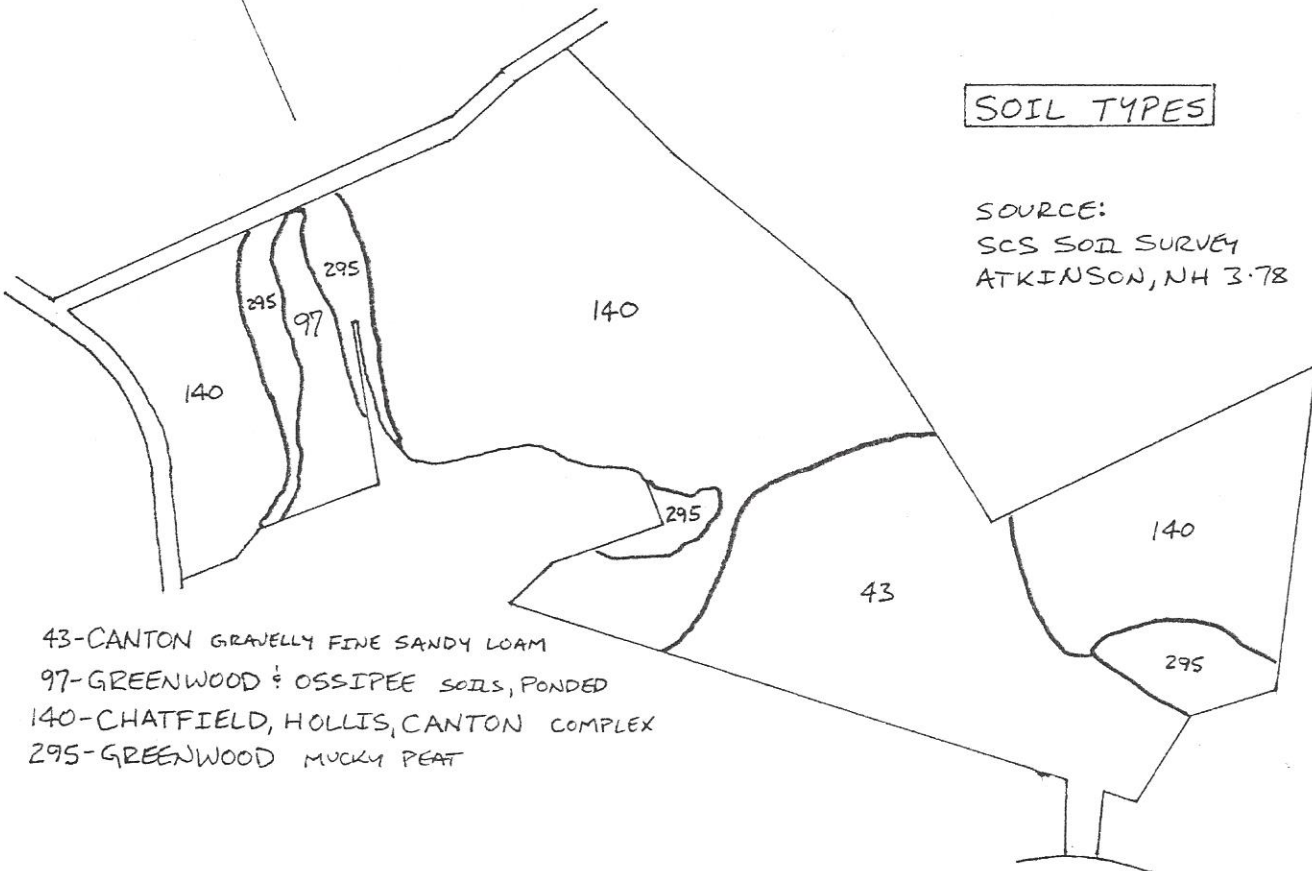
27 ± ACRES

## FOREST TYPES



## SOIL TYPES

SOURCE:  
SCS SOIL SURVEY  
ATKINSON, NH 3-78



SCALE:  
1" = 330'



MAPS BY: CHARLES A. MORENO, CONSULTING FORESTER  
CTR. STRAFFORD, NH AUG. 1989

THE CHADWICK LOT

Total Area: 27+Acres  
 Wooded Area: 26+Acres

TECHNICAL DATA

Basal Area/Acre	69.1 Sq. Ft.
Trees/Acre	163.6 Trees
Mean Stand Diameter	8.8 Inches
Growth Rates	2.0 - 2.5%
Site Index	60 - 65 (WP)
Softwood Sawtimber	5.0+ MBF
Hardwood Sawtimber	2.4+ MBF
Firewood Volume	462+ CORDS

WOODLAND CHARACTERISTICS

**Location:** Southeast of Pope Road, abutting Town Recreation Area and ballfields.

**Access:** Fair to excellent. Extensive road frontage on Pope Road (1000'+) providing good access to northern section of parcel. Good trail system as well in this section. Southern section of lot is has poor access, presently, with no road access or trails. Stream crossing is probably necessary. Logging distances: 0 to 1500'.

**Soils:** Chatfield/Hollis/Canton soil complex, (fair to good productivity for oak and pine growth; 65% of the area). Canton gravelly fine sandy loam, (good productivity for pine, fair for oak; 26% of the parcel). Greenwood mucky peat, (red maple swamp, poor productivity for oak or pine; 7% of the parcel). Greenwood and Ossipee soils (ponded areas, no forest growth; 4% of the area).

Topography: Level to moderately sloping, knolls (0 to 15% slopes).

Exposed ledge; shallow soils, often close to bedrock. Soils mostly well-drained.

#### SPECIES COMPOSITION

<u>Species</u>	<u>% of Basal Area</u>	<u>% of Timber Volume</u>
Red Oak	51%	55%
Black Oak	20	
Red Maple	15	
White Oak	8	
White Birch	2	
Black Birch	1	
White Pine	1	44%
Pignut Hickory	1	
Beech	<1	
Hemlock	<1	

#### SILVICULTURAL RECOMMENDATIONS

DESCRIPTION: One the dominant characteristics of the Chadwick Lot's forest is that oak--red, black, and white--represents nearly 80% of the species composition. Historically, the property was pastureland, as indicated by the stonewalls. After abandonment, cuttings of pine nearly eliminated this species from the property. In the early 1940's, a fire swept through much of the forestland in the Pope Road area, a factor which undoubtedly contributed to the high oak component. Much of the forest is relatively young, ranging from 35 to 60 years in age.



The soil on the Chadwick Lot is mostly well-drained. In some areas, ledge is exposed or close to the surface. The dry, shallow soils are not especially favorable for the growth of hardwood. Though oak is often found growing on this type of site, slow growth, short tree heights, and mediocre sawlog quality are characteristic results. The site is far better suited for the growth of white pine, which usually grows well on dry, sterile sites.

Presently the stand is recovering stocking from a light cordwood thinning in the early 1980's. Due to slow growth on this site and the forest's young age, a thinning will not be necessary or feasible until the mid to late 1990's.

Over the long-run, the objective of management will be to encourage species conversion to a pine-hardwood mix. The presence of pine will improve the site's yield, while a hardwood mix will reduce the site's susceptibility to heavy defoliation and mortality from gypsy moth attacks, since oak is their preferred food. The development of the existing oak forest on an even-aged system will be the short-term aim.

REGENERATION: Upland hardwoods and scattered pine.

SILVICULTURAL STAGE: Young intermediate.

PRESCRIPTIONS:

- 5 - 10 Years Improvement Cut/Thinning. Remove diseased, weak, poorly-formed trees, while releasing the crowns of desirable oak crop trees. Retain all pine for use as seed source. Harvest should be timed 3 or more years after next gypsy moth attack.
- 18 -25 Years Crown Thinning. Follow-up treatment; continue to develop oak crop trees. Release advance white pine regeneration

from overstory shade. Two more thinnings before regeneration harvests begin.

#### MULTIPLE-USE RECOMMENDATIONS

**RECREATION:** Adjoining the town recreation area and ballfield, the Chadwick Lot is used by townspeople mainly for short walks on the trail loop. Benches and a footbridge were improvements added to the trail loop by Scouts in 1985. The Chadwick Lot also encompasses part of a small pond which provides a scenic overlook from the trail, and a place for fishing.

The trail loop is well-travelled, but does not enter the southern portion of the lot. A small stream must be forded to reach this area. In time, when the forest is older and more adequately stocked for a thinning, a small ford and trail can be constructed into this area in conjunction with logging work. A small water impoundment and scenic stretch of stream surrounded by larger trees is the major feature of the southern area. Increasing the length of the trail and creating a larger loop may create a trail more conducive to jogging, a use which would compliment the nearby athletic fields.

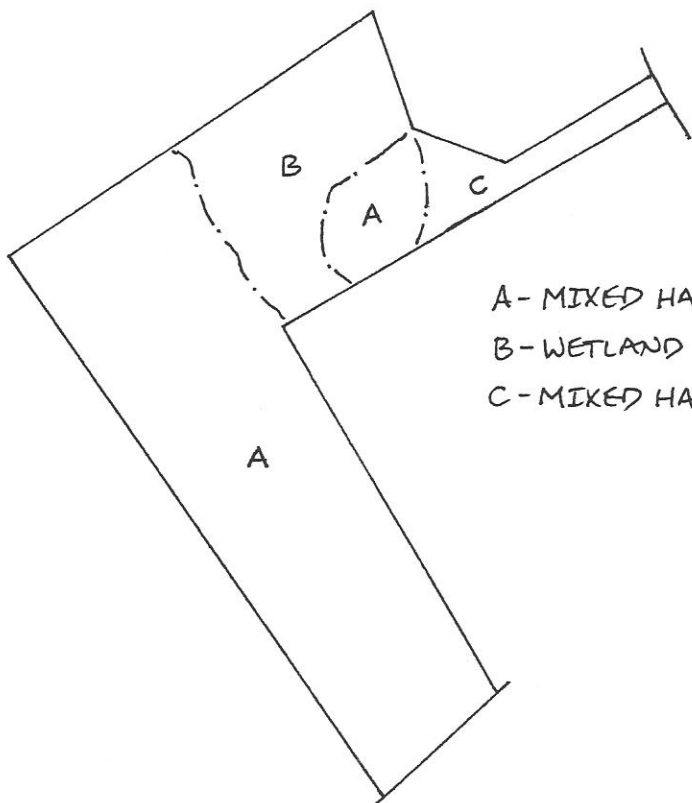
**WILDLIFE:** The abundance of acorns on the Chadwick Lot is attractive to wildlife, similar to the situation on the Stickney Lot. Developing and retaining oak crop trees well into maturity will maximize the amount of mast available to birds and mammals.

The pond and wetland area add variety to the habitat offered by the oak forest. The pond and its edges provide good feeding habitat for raptors, heron, waterfowl, and songbirds. Shrubby edges which provide food and cover for birds and mammals can be encouraged by thinning along the pond edges.

THE SLADE LOT

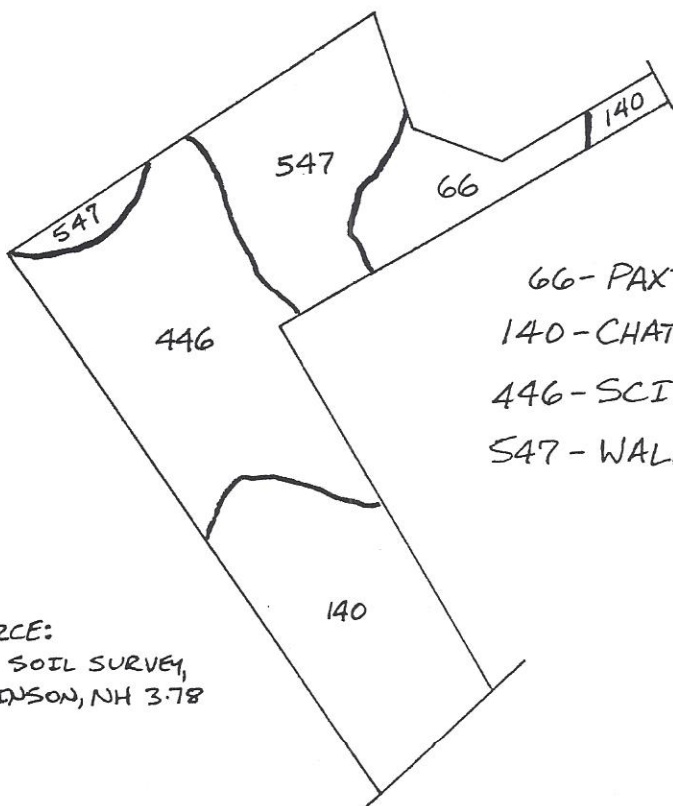
# THE SLADE LOT

11.7 ± ACRES



## FOREST TYPES

- A - MIXED HARDWOODS (M3B), 7 ± ACRES
- B - WETLAND HARDWOODS (Q3A), 2.7 ± ACRES
- C - MIXED HARDWOODS, YOUNG (M2B), 1 ± ACRES



## SOIL TYPES

- 66 - PAXTON FINE SANDY LOAM
- 140 - CHATFIELD, HOLLIS, CANTON COMPLEX
- 446 - SCITUATE-NEWFIELDS COMPLEX
- 547 - WALPOLE VERY FINE SANDY LOAM

SOURCE:  
SCS SOIL SURVEY,  
ATKINSON, NH 3-78

SCALE:  
1" = 330'



MAPS BY: CHARLES A. MORENO CONSULTING FORESTER  
CENTER STRAFFORD, NH AUGUST 1989

THE SLADE LOT

Total Area: 11.7± Acres  
 Wooded Area: 11.7± Acres

TECHNICAL DATA

Basal Area/Acre	100.0 Sq. Ft.
Trees/Acre	93.5 Trees
Mean Stand Diameter	14.0 Inches
Growth Rates	2.0 - 3.0%
Site Index	60 - 70 (WP)
Softwood Sawtimber	3.9± MBF
Hardwood Sawtimber	36.2± MBF
Firewood Volume	301± CORDS

WOODLAND CHARACTERISTICS

**Location:** Located near center of town, northwest of Route 121 and Pope Road intersection.

**Access:** Fair to good. 1100' road access down unimproved section of Pope Road necessary. Access would improve substantially if/when Pope Road is upgraded. Potential, but difficult access directly from Route 121, as well. Good internal access. Logging path is now central trail. Distances for logging: 0 to 1200 feet.

**Soils:** Scituate-Newfields soil complex (good productivity for oak and pine growth, prone to wetness in spring and late fall; 36% of parcel). Chatfield/Hollis/Canton soil complex, (fair to good productivity for oak and pine growth; 30% of the area). Walpole very fine sandy loam (a poorly drained soil, fair for

the growth of pine, poor for oak; 16% of parcel). Paxton fine sandy loam (a moist, rich soil, excellent for the growth of hardwoods; pine is difficult to regenerate on this soil; 12% of the parcel).

Topography: Mostly gently sloping, though moderate slope up to Route 121 (0 to 15% slopes). Terrain mostly rock-free. Prone to wetness in spring and fall.

#### SPECIES COMPOSITION

Species	% of Basal Area	% of Timber Volume
Red Oak	27	72%
Red Maple	24	
Yellow Birch	9	2
White Ash	9	4
Shagbark Hickory	8	5
White Oak	5	2
White Pine	5	10
White Birch	4	
Black Birch	4	
Black Oak	2	1
Beech	2	
Hemlock	<1	

SILVICULTURAL RECOMMENDATIONS

DESCRIPTION: The Slade Lot contains a fine mixed-hardwood stand, with trees averaging 75 to 90 years of age. Along with the Marshall Lot, this parcel contains some of the oldest, undisturbed forest of the town forestlands. Large oaks, hickories, and maples make for a scenic walk through the woods. Moist and productive hardwood soils have resulted in a well-stocked stand of quality sawtimber. Despite the relatively small size of the parcel, the growth and quality of the stand make it feasible to manage from a silvicultural standpoint.

Of interest in this parcel is a one-acre maple wetland area which contains a dense stocking of wood horsetail (*Equisetum sylvaticum*). This interesting plant descends from an ancient and primitive subdivision of plants, today represented worldwide by only 15 species. Care was taken during a recent improvement harvest on the property not to disturb this unique area.

An improvement cut/thinning was made on approximately 10 acres of the Slade Lot in the summer of 1988. The purpose of the harvest was to remove dying, weak, or diseased trees, while providing more growing space to the crowns of some of the large trees on the lot. In addition, the main access path for logging was laid-out to now serve as a trail for the public to enjoy the property. Logging specifications were carefully controlled so as not disturb the aesthetics of the lot; the thinning was light, tree utilization excellent, and slash minimal.

The property will not be due for another thinning until the late 1990's. That thinning will be the last before a modified shelterwood cutting is employed to regenerate this hardwood stand.

REGENERATION: Mixed hardwoods.

SILVICULTURAL STAGE: Intermediate, approaching maturity.

## PRESCRIPTIONS:

- 8 - 12 Years Crown Thinning. Follow-up thinning to continue providing growing space around tops of crop trees. Release crowns on at least two sides, allowing 5 to 8 feet of growing space between crowns. Favored species: red and white oak, white ash, yellow birch and the hickories. Do not disturb horsetail area.
- 20 -25 Years Shelterwood Cut, 1st stage. Remove 25% of overstory, with aim of regenerating mid-tolerant species such as oak, ash and hickory. Harvest on or after a good acorn year. Retain large-crowned crop trees as seed source and for aesthetics.

MULTIPLE-USE RECOMMENDATIONS

RECREATION: Though the Slade Lot contains direct access to Main Street, parking is limited from this route. Parking is available off Main Street at the top of Pope Road. Access to the property then requires an 1100' walk down the Pope Road (which was recently clearcut and is not pleasing to the eye) until the woodlot is reached. The trail then leads through the heart of the lot towards the vicinity of the horsetails.

The Slade Lot, though both interesting and scenic, is lightly used by the public. The reasons for this is the more difficult access to the lot, and little awareness of the lot's availability. The horsetail area may make an interesting study area for the schools.

WILDLIFE: Examining the wildlife potential in an area as small as the Slade Lot is most enlightening when taken in the context of the surrounding area. The oak/hickory forest area on the Slade Lot provides abundant



mast for wildlife. A large parcel to the west of the lot was clearcut in recent years, and now is thickly stocked with young hardwood sprouts. The area to the east of the lot was heavily cut in 1988, and as this is a wet site, is filling in with wetland-type shrubs. In addition, areas of oak and oak/pine forest lie to the north and south of the lot. This diversity of vegetation and cover is attractive to a greater variety of wildlife than an unbroken stretch of forest.

On the Slade Lot itself, care has been taken to retain cavity trees which are utilized by a number of bird (and mammal) species for feeding on insects and nesting. Large hollow hardwoods may prove to be good den trees.

THE SAWYER LOT

# FOREST TYPE MAP

of the

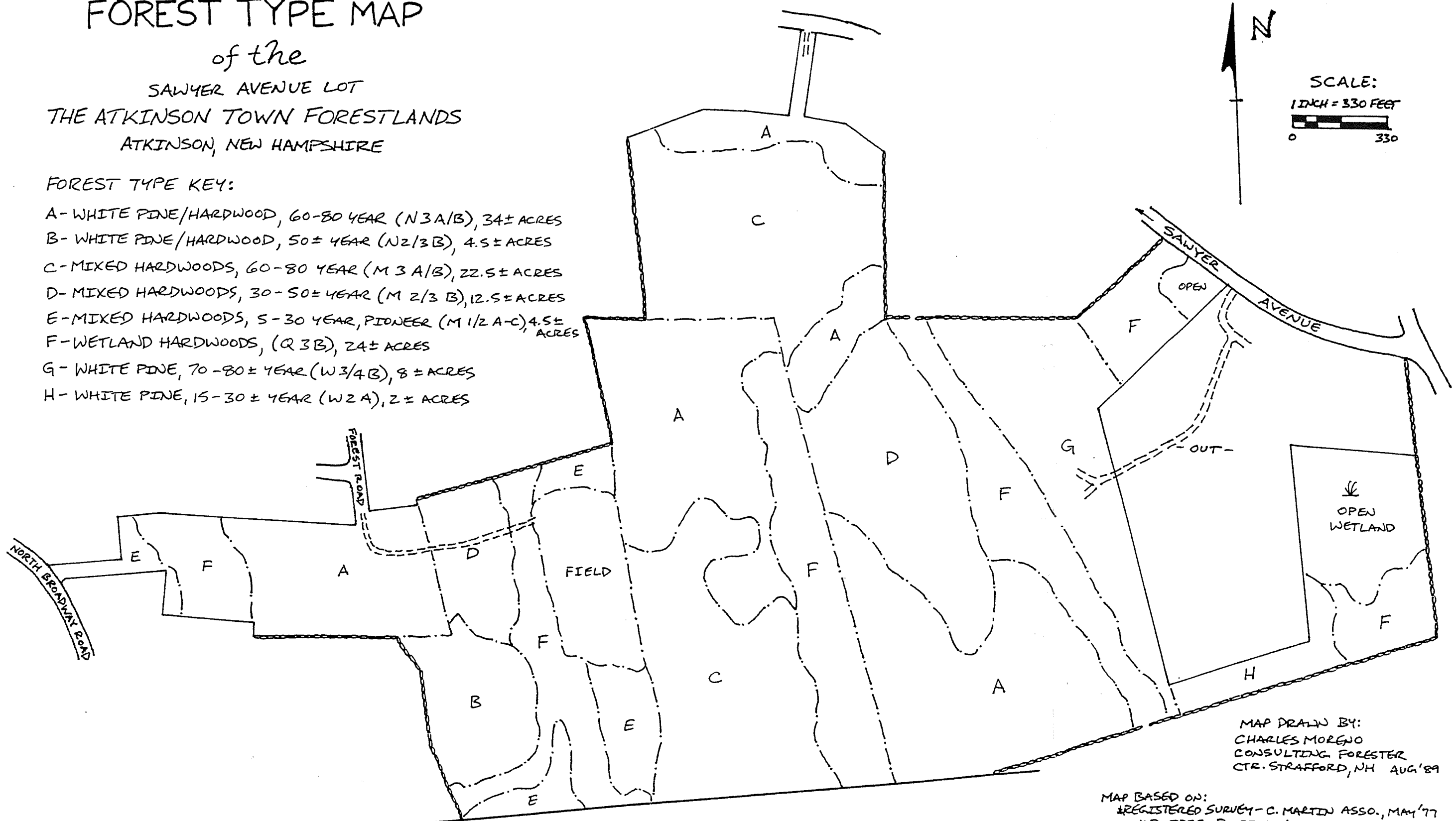
SAWYER AVENUE LOT

THE ATKINSON TOWN FORESTLANDS

ATKINSON, NEW HAMPSHIRE

### FOREST TYPE KEY:

- A- WHITE PINE/HARDWOOD, 60-80 YEAR (N3A/B), 34± ACRES
- B- WHITE PINE/HARDWOOD, 50± YEAR (N2/3B), 4.5± ACRES
- C- MIXED HARDWOODS, 60-80 YEAR (M3A/B), 22.5± ACRES
- D- MIXED HARDWOODS, 30-50± YEAR (M2/3B), 12.5± ACRES
- E- MIXED HARDWOODS, 5-30 YEAR, PIONEER (M1/2A-C), 4.5± ACRES
- F- WETLAND HARDWOODS, (Q3B), 24± ACRES
- G- WHITE PINE, 70-80± YEAR (W3/4B), 8± ACRES
- H- WHITE PINE, 15-30± YEAR (W2A), 2± ACRES



MAP DRAWN BY:  
 CHARLES MORENO  
 CONSULTING FORESTER  
 CTR. STRAFFORD, NH AUG '89

MAP BASED ON:  
 \*REGISTERED SURVEY - C. MARTIN ASSO., MAY '77  
 #D-7375, D-9716, & D-11188  
 \*ATKINSON TAX MAPS: 3-19, 3-108, 4-11  
 \*TRAIL MAP - C. LAOD, 1985  
 \*AERIAL PHOTO - ASCS #33015-174-245A (1974)  
 \*FIELD CRUISE - C. MORENO, AUG 89

# SOIL TYPE MAP

of the

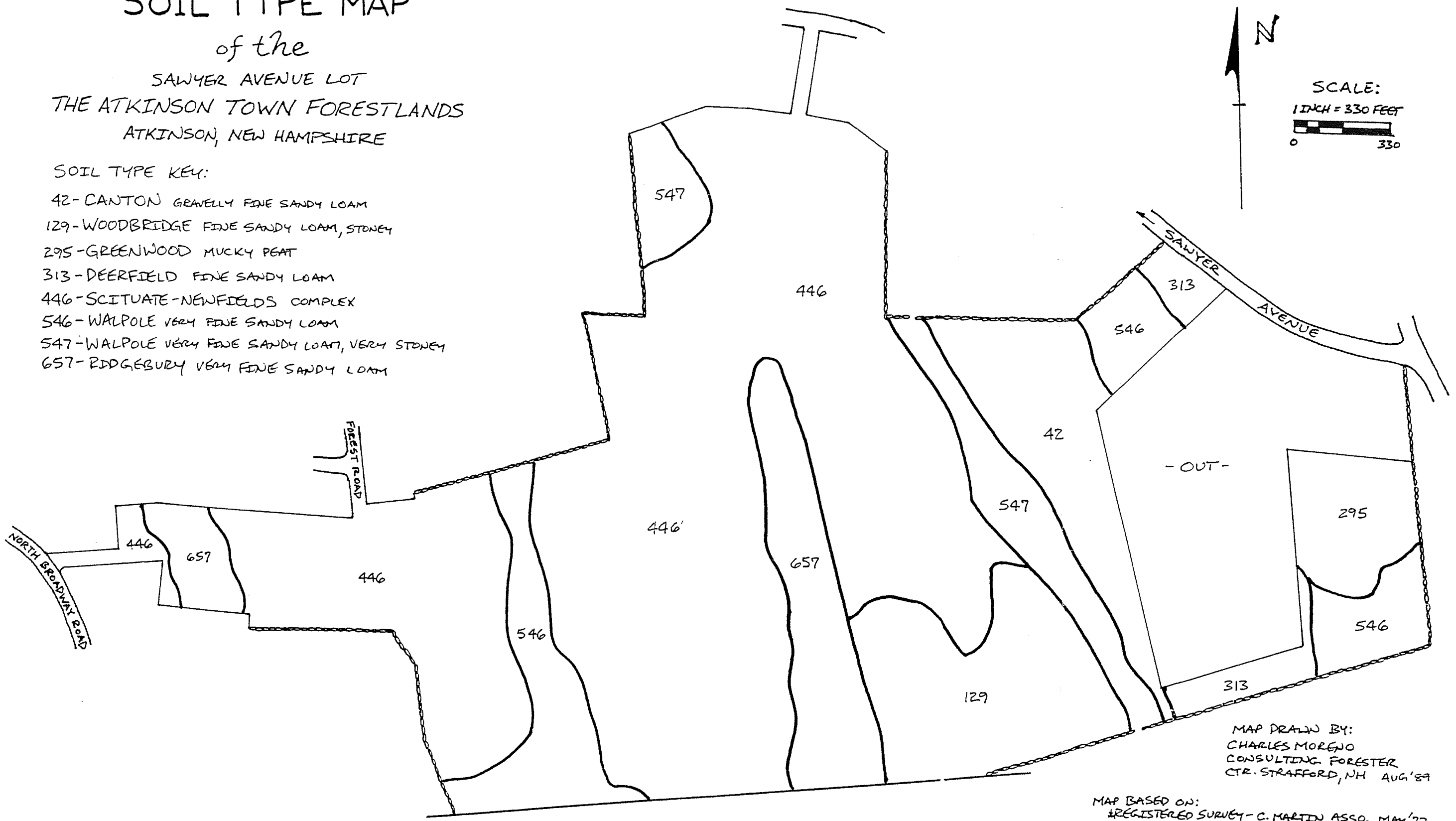
SAWYER AVENUE LOT  
THE ATKINSON TOWN FORESTLANDS  
ATKINSON, NEW HAMPSHIRE

### SOIL TYPE KEY:

- 42 - CANTON GRAVELLY FINE SANDY LOAM
- 129 - WOODBRIDGE FINE SANDY LOAM, STONEY
- 295 - GREENWOOD MUCKY PEAT
- 313 - DEERFIELD FINE SANDY LOAM
- 446 - SCITUATE-NEWFIELDS COMPLEX
- 546 - WALPOLE VERY FINE SANDY LOAM
- 547 - WALPOLE VERY FINE SANDY LOAM, VERY STONEY
- 657 - RIDGEBURY VERY FINE SANDY LOAM



SCALE:  
1 INCH = 330 FEET  
0 330



MAP DRAWN BY:  
CHARLES MORENO  
CONSULTING FORESTER  
CTR. STRAFFORD, NH AUG '89

MAP BASED ON:  
\*REGISTERED SURVEY - C. MARTIN ASSO., MAY '77  
#D-7375, D-9716, & D-11188  
\*ATKINSON TAX MAPS: 3-19, 3-10B, 4-11  
\*TRAIL MAP - C. LAOD, 1985  
\*AERIAL PHOTO - ASCS #33015-174-245A (1979)  
\*FIELD CRUISE - C. MORENO, AUG 89  
\*ROCKINGHAM COUNTY SOIL SURVEY (SCS) 1978

THE SAWYER LOT

Total Area: 120.2±Acres  
 Wooded Area: 112±Acres

TECHNICAL DATA

Basal Area/Acre	104.6 Sq. Ft.
Trees/Acre	110.1 Trees
Mean Stand Diameter	13.2 Inches
Growth Rates	1.5 - 3.0%
Site Index	55 - 70 (WP)
Softwood Sawtimber	439.2± MBF
Hardwood Sawtimber	47.1± MBF
Firewood Volume	2297± CORDS

WOODLAND CHARACTERISTICS

Location: Large-sized parcel in southern section of Atkinson; in area south of Sawyer Avenue and north of Massachusetts border.

Access: Fair to excellent. Three-season woods roads off Forest Road and Sawyer Avenue provide good to excellent access into most of interior. New road access from Sawyer Avenue would improve access to former Cirome parcel. Excellent trail network.

Logging distances: 0 to 1500'.

Soils: Scituate-Newfields soil complex (good productivity for oak and pine growth, a moist soil complex prone to wetness in spring and late fall; 58% of parcel area). Woodbridge fine sandy loam (a moist, rich soil, good to excellent for the growth of hardwoods; excellent pine growth as well, though difficult to regenerate; 8% of the parcel). Walpole very fine sandy loam (a poorly

drained soil, surrounding intermittent streams and drainages; fair for the growth of pine, poor for oak; 8% of parcel).

Canton gravelly fine sandy loam, (a well-drained soil, particularly suited for the growth of pine; 7% of the area).

Ridgebury very fine sandy loam (poorly drained, usually associated with maple swamp areas; 7% of area). Walpole very fine sandy loam, very stony (poorly drained, rocky soil following stream drainage in cmpt. 3, poor for pine/oak growth; 2% of the parcel). Greenwood mucky peat (very-poorly drained area, presently meadow and unsuitable for commercial forest growth; 3% of area). Deerfield fine sandy loam (moderately well-drained sandy soil, well-suited for pine growth; 2% of parcel).

Topography: Level to lightly sloping (0 to 8% slopes). Mostly moist soils.

SPECIES COMPOSITION

<u>Species</u>	<u>% of Basal Area</u>	<u>% of Timber Volume</u>
Red Maple	32%	
White Pine	25	90%
Black Birch	9	<1
Red Oak	7	2
White Ash	4	<1
Black Oak	4	2
White Oak	2.5	1
Shagbark Hickory	2.5	1
Popple	2	
White Birch	2	1
Yellow Birch	2	<1
Swamp White Oak	1.5	<1
Pignut Hickory	1	<1
Beech	1	
Elm	1	
Hemlock	1	
Black Cherry	1	
Mockernut Hickory	<1	
Sugar Maple	<1	
Black Gum	<1	
Butternut	<1	

SILVICULTURAL RECOMMENDATIONS

DESCRIPTION: The Sawyer Lot is by far the largest of the Town Forest lots. It was acquired by the town in three sections, the areas of which will now be used to delineate management areas or compartments. The compartments are itemized as follows: Cmpt. 1) the former Bonin parcel; Cmpt. 2) the former Cirome parcel; and Cmpt. 3) the former Sawyer parcel. The areas are variable in size, roughly from 20 to 50 acres. However, these units are of manageable size to complete all silvicultural work in a unit in one year.

Much of the Sawyer Lot contains moist, fertile soils capable of substantial forest production. The farming history of much of this forest is reflected in the white pine stocking of certain stands. In other areas, pine was harvested in the past. Stands in the forest vary greatly in age. Some areas have only recently been abandoned as fieldland. A four-acre field is still mowed and maintained open by the Conservation Commission in Compartment 1. Forest description will proceed on a stand by stand basis, with reference to The Sawyer Lot Forest Type Map.

Stand type A includes a number of pockets in all three compartments. Trees in these areas range from 60 to 80 years of age, usually with good quality pine. Hardwoods include red maple, the oaks, black birch, and the hickories. The western-most stand in Cmpt. 1 is most urgently in need of thinning. The other two major areas of this stand type were treated in 1981 and 1988. All areas are in an intermediate stage, developing into fine stands of sawtimber trees. The silvicultural approach for this stand type will be improvement cut/thinnings until maturity, at which time a shelterwood system will be used to regenerate the pine/hardwood mix.

Stand Type B includes only a small section of pine/hardwood mix in



Cmpt. 1. This stand differs from A in age, as this area was a field abandoned in the 1930's. Stocking is full, though a thinning at this stage would fall in the gray area between precommercial and commercial work. A biomass harvest would be ideal; however additional biomass areas would have to be included to make this operation feasible.

Stand Type C includes two areas of older (60 - 80 year) hardwood. Species included are similar to those in stand A, minus pine. The area in Cmpt. 1 was thinned in 1988, and is presently up-to-date silviculturally. The area in Cmpt. 2 is heavily stocked and would benefit from a thinning.

Stand Type D includes two areas of younger mixed hardwoods than C. The section in Cmpt.1 was thinned in 1988 (young pine regeneration was also released), however, a few stray popples were missed in the harvest which could be included in biomass work for Stand 1B. Stand D in Cmpt. 3 was thinned in 1983 with excellent results, and will be due for a follow-up thinning in the near future. This stand would be a good candidate to combine with biomass harvesting in Stand 1B, since trees to be thinned in this area are somewhat small for a conventional firewood operation.

Stand Type E is represented by a number of pockets in Cmpt. 1. Young mixed hardwoods characterize these areas, several of which are too difficult to access or too wet to be worth thinning, presently. One exception is the area just south of the Bonin field, which contains pine regeneration among popple and gray birch saplings. Liberation of the pine from hardwood competition should favor its growth.

Stand Type F includes all the wetland hardwood areas in the property. The major species in these areas is red maple; other species include yellow birch, elm, swamp white oak, white ash, and a few pine. Though forest productivity in these wet areas is mostly limited to cordwood,

stocking tends to be quite high. Harvesting in these areas will be geared towards wildlife management, and regeneration mostly as coppice.

Stand Type G, located in Cmpt. 3 and situated on a gravelly Canton soil, is almost entirely white pine. This stand has good potential to be regenerated into white pine. Presently, trees are in a late intermediate stage and of sawtimber-size. An improvement cutting of pine, only, was done in this stand in 1981, with a follow-up removal of most hardwood in 1983. The overstory presently is fairly open, and in good position to be managed as the stage after an initial shelterwood cutting. Though pine has seeded in some areas, black birch regeneration has taken hold on much of the site. Before anymore of the overstory seed trees are removed, it is strongly recommended that the black birch understory be eliminated with a brushcutter. Thereafter, soil scarification on a good pine seed year should have the effect of encouraging pine regeneration.

Stand Type H is a small area of white pine in Cmpt. 3. Trees range from 15 to 30 years of age and are very densely stocked. Removal of overtopping seed trees and TSI (precommercial thinning) in the pine are suggested.

SILVICULTURAL STAGE: Various stages, depending on stand.

PRESCRIPTIONS:

- 1 - 5 Years Improvement Cut/Thinning. Stands 1A and 1F (west), in conjunction with all areas in Cmpt. 2, and Stand 3A.  
Biomass--Improvement Cut/Thinning. Stands 1B and 3D.  
TSI--Weeding and Thinning. Stands 1E and 3H.  
Patch cutting. Stand 3F.  
Understory Removal. Stand 3G. Removal of black birch and scarification of soil on good pine cone year.

10 -15 Years Improvement Cut/Thinning. Follow-up on 1988 harvest areas, Stands 1A, 1C, and 1F. Also, Compt. 2 areas and Stand 3A.

Shelterwood, second stage. Stand G. On good seed year. also hardwood control as necessary.

18 -25 Years Crown Thinning. All previously thinned areas, including biomass harvest areas: Stands 1A, B, C, D, and F; Stands 2A and C; and Stands 3A and 3D.

Shelterwood, third stage. Stand G. Continue overstory removal if regeneration of pine has been successful, and by now, well-established.

#### MULTIPLE-USE RECOMMENDATIONS

RECREATION: An extensive trail network lies on the Sawyer Lot. Trails were laid-out in conjunction with harvest operations in the early 1980's, and mapped. A mile-long loop trail meanders through the parcel and then through the forest just south of the state-line, to rejoin at the Bonin Field. Trails are accessed by way of all compartments in the property.

Because of the forest's variety and length of the trails, the potential for a self-guiding nature walk similar to the Marshall Lot's is present. An example of a natural point of interest is the county champion white ash located in compartment 2. An annual trails "tour" may interest more townspeople in the trails availability.

There appears to be no need to expand the present trail system. Current uses include: hiking, birdwatching, jogging, skiing, horseback riding, and, possibly, mountain biking (non-motorized). As with most town trails, dirtbikes and ATV's also use the trails. Erosion problems

were not apparent, due to level ground. However, crossings of streams and wet ground by ATV's causes sedimentation and rutting.

**WILDLIFE:** The Sawyer Lot contains excellent variety of wildlife habitat as follows: two small ponds, interspersed wooded wetlands, a large open wetland (western-most area), open field, early successional forest, mixed hardwood forest and pine/hardwood forest, both with abundant mast. In addition, fruit-bearing shrubs and vines were noted in areas throughout the lot including hawthorn, winterberry holly, highbush blueberry, multi-flora rose, blackberry, barberry, bittersweet, and grapevine.

A great variety of birds including raptors, woodpeckers, grouse, woodcock, waterfowl, and songbirds are attracted to these habitat types, and food and cover sources. For example, in one small area, birds as diverse as a veery, warbler, nuthatch, vireo, and broad-winged hawk were noted. Mammals attracted to the field and forest areas include fox, deer, and possibly, cottontail rabbit, among others. Wetland areas would include mink.

Wildlife management and habitat improvement measures include: the retention of the open field and areas of early successional forest; the continued planting of wildlife shrubs on field edges (this was done in the early 1980's); in wetland areas, the creation of small openings to encourage the growth of wetland shrubs; the growth of mast-bearing trees into full-maturity; and the retention of cavity and den trees.

THE SAWMILL SWAMP LOT

# THE SAWMILL SWAMP LOT

49.6 ± ACRES

## FOREST TYPES



### KEY:

A - UPLAND HARDWOOD, OAK  
(J 2/3 C), 12 ± ACRES

B - WHITE PINE/HARDWOOD  
(N 3 B), 2 ± ACRES

C - WETLAND HARDWOOD, RED  
MAPLE (Q 3 B), 1 ± ACRES



MAP SCALE  
0' 330'  
1 INCH = 330 FEET

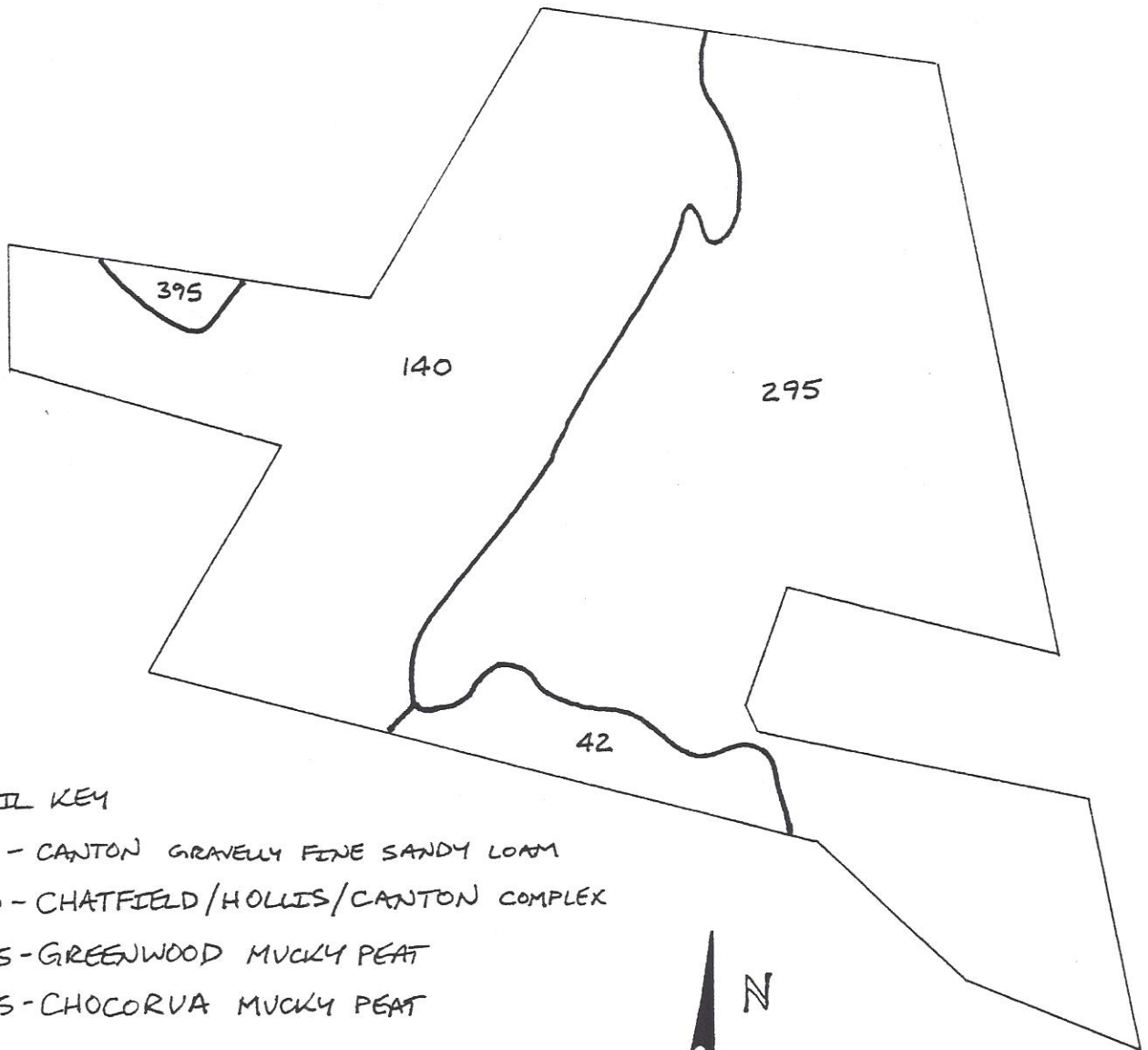
MAP DRAWN BY: CHARLES A. MORENO  
CONSULTING FORESTER, AUG 1989

SOURCE: FOREST CRUISE BY  
C. MORENO (8/89)

# THE SAWMILL SWAMP LOT

49.6 ± ACRES

## SOIL TYPES



### SOIL KEY

- 42 - CANTON GRAVELLY FINE SANDY LOAM
- 140 - CHATFIELD/HOLLIS/CANTON COMPLEX
- 295 - GREENWOOD MUCKY PEAT
- 395 - CHOCORVA MUCKY PEAT

MAP DRAWN BY: CHARLES A. MORENO  
CONSULTING FORESTER, AUG 1989

SOURCE: SCS SOIL SURVEY  
ATKINSON, NH 3/78



MAP SCALE  
0' 330'  
1 INCH = 330 FEET

THE SAWMILL SWAMP LOT

Total Area: 49.6±Acres  
 Wooded Area: 15±Acres

TECHNICAL DATA

Basal Area/Acre	77.1 Sq. Ft.
Trees/Acre	114.7 Trees
Mean Stand Diameter	11.1 Inches
Growth Rates	2.0 - 2.5%
Site Index	60 - 65 (WF)
Softwood Sawtimber	55.5± MBF
Hardwood Sawtimber	--- MBF
Firewood Volume	206± CORDS

WOODLAND CHARACTERISTICS

Location: In north-central part of Atkinson, off Knightland Road.

Encompasses part of Sawmill Swamp.

Access: Fair to poor. From end of Knightland Road, must cross adjoining parcel to reach property. Good footpath leads through adjoining parcel for 600 feet, then enters lot and winds along swamp edge. No woods roads, presently. Logging distances: 600 to 2000 feet.

Soils: Greenwood mucky peat, (Sawmill Swamp meadow area; 69% of parcel area). Chatfield/Hollis/Canton soil complex, (in this area, because of well-drained conditions, productivity for pine growth better than for oak; 28% of parcel). Canton gravelly fine sandy loam, (especially favorable for pine growth, 2% of parcel). Chocorua mucky peat, (poorly-drained, maple swamp; 1% of area).

Topography: Level to lightly sloping (0 to 8% slopes). Dry terrain.



SPECIES COMPOSITION

<u>Species</u>	<u>% of Basal Area</u>	<u>% of Timber Volume</u>
Red Oak	33%	
White Pine	30	99%
Black Oak	15	
Red Maple	11	
White Oak	4	
Black Birch	4	
White Birch	3	

SILVICULTURAL RECOMMENDATIONS

DESCRIPTION: The Sawmill Swamp Lot is actually one of two adjoining properties acquired from the Feuer Family in 1985. A large wetland meadow, known as Sawmill Swamp, encompasses roughly 2/3 of the parcel. Historically, this meadow was seasonally cut by farmers for straw. Today, the wildlife, water recharge, and flood control qualities of the wetland deem it worthy of preservation.

Three forest types represent the remaining third of the property. The major stand contains upland oak similar in composition to areas of the Stickney and Chadwick Lots. Over 50% of stocking is oak, while growth is slow, and trees are of a relatively young age (50 - 65 years). Oak is somewhat off-site on the well-drained soils of the parcel; the scattered pine demonstrates much better growth. In addition, the high proportion of oak and dry site conditions make this stand highly susceptible to gypsy moth attacks. Other forest types in the parcel include

a slightly older pine/hardwood area along the southern border, and two small wetland areas stocked with red maple.

Over the long-term, conversion of the upland areas to a greater pine composition is recommended. The existing stocking of scattered pine and pine pockets, greatly enhances the chances of successfully regenerating white pine. However, poor access in combination with low stocking and relatively small trees renders commercial treatment of this stand unfeasible, presently. With improved access, the conversion process towards increased pine component should be initiated. A biomass operation is probably most practical, especially for harvesting small hardwood around pine seed trees.

REGENERATION: Sparse, red maple and white pine.

SILVICULTURAL STAGE: Intermediate, pre-commercial to commercial.

PRESCRIPTIONS:

1 - 10 Years After access is improved to proerpty:

Thinning. In areas of pure oak, thin around the crowns of best trees.

Conversion harvest. For areas containing or downwind from pine seed trees. Retain all pines, remove some of hardwood understory, and scarify openings. Harvest on or after good cone year.

20 -25 Years Similar treatments. Check success rate of pine regeneration.

MULTIPLE-USE RECOMMENDATIONS

RECREATION: An excellent trail, entering from Knightland Road, follows the edge of the Sawmill Swamp across the entire property. The trail is

part of a widespread network of trails in this part of Atkinson and Hampstead. It is kept well-open by ATV and snowmobile traffic. With excellent views of the meadow, the trail offers a good vantage point for birdwatching. Furthermore, the trail holds potential as an educational area for school children. As with the Marshall Lot (and Sawyer Lot recommendations), a self-guiding nature walk concentrating on wetland ecology would be of interest.

**WILDLIFE:** The Sawmill Swamp wetland is an excellent wildlife area, attracting a great variety of birdlife and mammals. Though presently in an open-meadow state, trees will slowly fill into the area. In time, beaver will revitalize their dams, and the area will be flooded again, creating snags out of the dying trees. As the trees die and fall, the meadow will flourish once again. This simple description of the Swamp's cycle, serves to illustrate the variety of habitat in this area over time. Each stage of the wetlands cycle attracts different and abundant wildlife species.

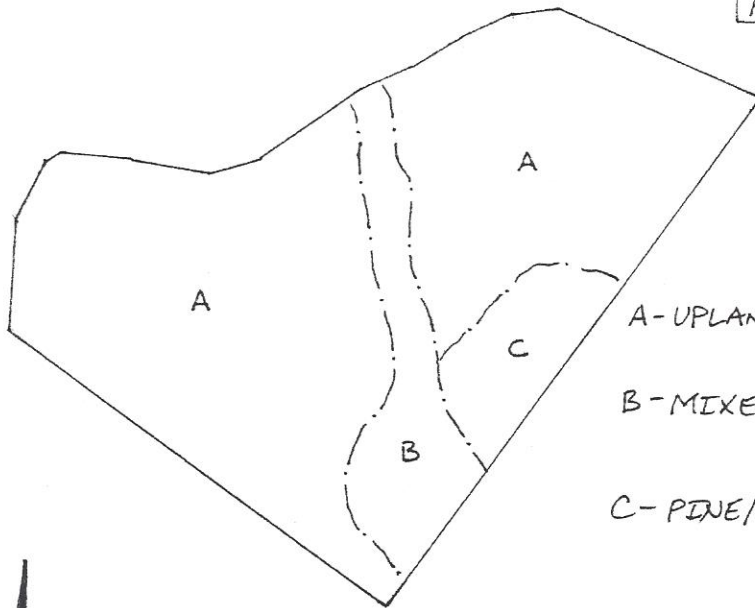
The wetland edge is also significant. Edges are dense thickets of buckthorn, alder, highbush blueberry, and popple. Good cover and food is provided by this edge, as evidenced by a covey of ruffed grouse flushed from this edge. Finally, the oak stand supplies abundant amounts of the all-important acorn. 1989, incidently, is an excellent acorn year in Rockingham County.

THE FEUER LOT

# THE FEUER LOT

17.4 ± ACRES

## FOREST TYPES

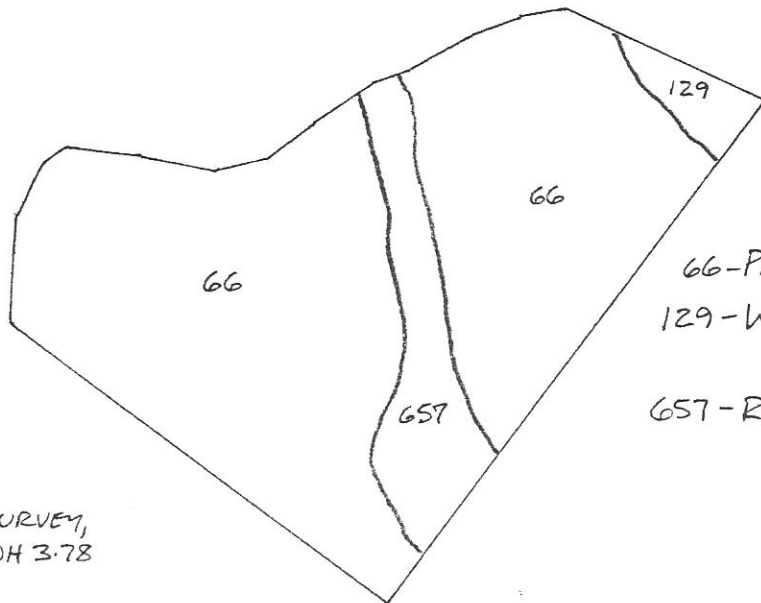


A - UPLAND HARDWOODS (J3A),  
14.4 ± ACRES

B - MIXED HARDWOODS (M3A),  
2 ± ACRES

C - PINE/HARDWOOD (N3A),  
1 ± ACRE

## SOIL TYPES



66 - PAXTON FINE SANDY LOAM

129 - WOODBRIDGE FINE  
SANDY LOAM

657 - RIDGEBURY VERY FINE  
SANDY LOAM

SOURCE:  
SCS SOIL SURVEY,  
ATKINSON, NH 3.78

SCALE:  
1" = 330'



MAPS BY: CHARLES A. MORENO, CONSULTING FORESTER  
CENTER STRAFFORD, NH AUGUST 1989

THE FEUER LOT

Total Area: 17.4<sup>±</sup> Acres  
 Wooded Area: 17.4<sup>±</sup> Acres

TECHNICAL DATA

Basal Area/Acre	114.3 Sq. Ft.
Trees/Acre	143.1 Trees
Mean Stand Diameter	12.1 Inches
Growth Rates	2.0 - 3.0%
Site Index	60 - 75 (WP)
Softwood Sawtimber	9.7 <sup>±</sup> MBF
Hardwood Sawtimber	35.4 <sup>±</sup> MBF
Firewood Volume	572 <sup>±</sup> CORDS

WOODLAND CHARACTERISTICS

**Location:** In north-central part of town, abutting the Sawmill Swamp Lot and just south of the swamp.

**Access:** Poor. Landlocked parcel; access must be negotiated through an adjoining property. 1200 feet through forest and across streams to nearest town roads (Knightland Road or Maple Avenue). No internal trails. Logging distances: 1200 to 2400 feet.

**Soils:** Paxton fine sandy loam (moist, rich soil, excellent for the growth of mixed hardwoods, including oak; pine growth also good, though difficult to regenerate; 86% of the area). Ridgebury very fine sandy loam (poorly drained soil at headwaters of stream crossing parcel; also along stream; suited for the growth of wetland hardwoods such as red maple; 11% of parcel area). Woodbridge fine sandy loam (similar to Paxton soil, though at

base of slope, less well-drained; excellent hardwood soil; 3% of parcel area).

Topography: Moderate slopes (8 to 15% slopes). Soils retain moisture in spring.

#### SPECIES COMPOSITION

<u>Species</u>	<u>% of Basal Area</u>	<u>% of Timber Volume</u>
Red Maple	31%	
Red Oak	29	56%
Black Birch	12	4
White Pine	7	22
White Ash	5	3
White Oak	3	3
Pignut Hickory	3	4
Shagbark Hickory	2	3
Black Oak	2	2
Yellow Birch	1	
Sugar Maple	1	
Basswood	<1	
Beech	<1	

#### SILVICULTURAL RECOMMENDATIONS

DESCRIPTION: The Feuer Lot, abutting the Sawmill Swamp parcel and the swamp's edge, contains a fine 70-year old hardwood stand. The lot is on a northwest-facing slope running downhill towards the swamp. Faxton soils on slopes are usually some of the best hardwood sites; while this

soil retains moisture, sloping terrain appears to allow ample aeration of tree roots, as ground water is not stagnant.

Species composition is varied, including certain species requiring good-quality sites: white ash, sugar maple, and basswood. Tree height growth is excellent, while good quality hardwood sawtimber is developing. Red oak veneer in the parcel will be of substantial value in the future.

Management goals over the short-term are to upgrade stand quality and continue to develop red oak and mixed hardwood sawtimber into maturity. Over the long-run, the regeneration of a similar, stable mixed hardwood stand is the objective.

For the present time management efforts will be delayed until access can be attained to the property.

REGENERATION: Mixed hardwoods and white pine.

SILVICULTURAL STAGE: Intermediate, commercial.

PRESCRIPTIONS:

1 - 5 Years After access is improved to proerpty:

Improvement Cut/Crown Thinning. Identify and retain fine quality oak and other hardwood sawtimber, and thin around tops. Remove black birch, especially diseased trees, as this species will regenerate prolificly on this moist soil. Retain dense understory to "train" oak sawtimber; sunlight on the tree trunks will cause undesirable sprouting known as epicormic branches.

Stocking -- Original 115 Sq. Ft/Acre

Residual 80 Sq. Ft/Acre

10 -15 Years Improvement Cut/Crown Thinning. Continue to manage species mix and thin around crowns of crop trees.

20 -25 Years Crown Thinning. Follow-up treatment.



MULTIPLE-USE RECOMMENDATIONS

RECREATION: Currently, poor access to this lot has contributed to little public awareness and use. No trails cross the property. The parcel is surrounded by extensive forest under other ownership. Presently, the major recreational use of this parcel is probably hunting. If logging access is acquired to the parcel, a trail network can be developed, which may be of interest to residents in this part of town.

WILDLIFE: Like the Slade Lot, wildlife on the Feuer Lot must be viewed in the context of the surrounding parcels. The Feuer Lot, itself, contains abundant mast from its stocking of oak and hickory trees. The surrounding properties contain additional areas of mixed hardwood and pine/hardwood types. The large Sawmill Swamp to the north, as discussed, adds variety and richness to the areas wildlife habitat.

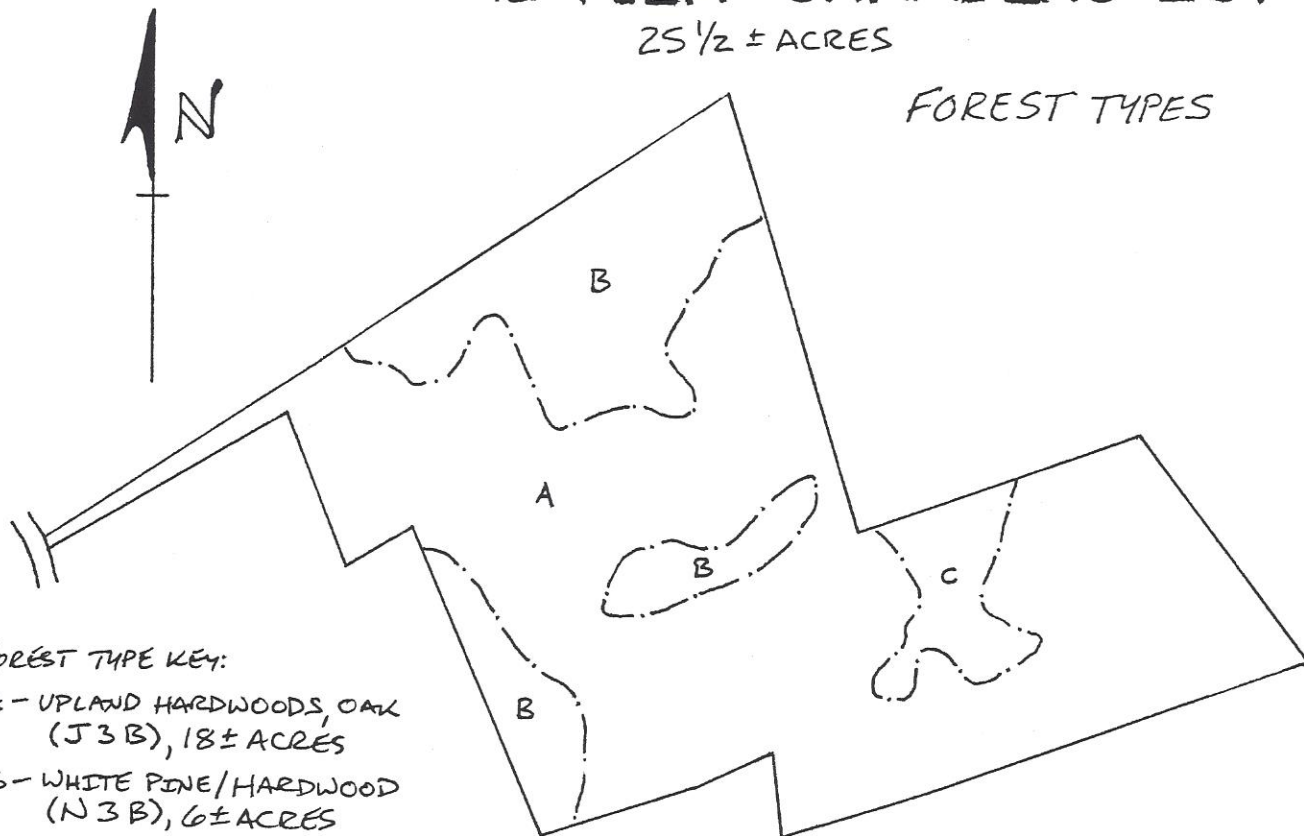
Wildlife recommendations include the creation of a small opening (1/8th acre) in the maple wetland pocket in the southeast corner of the lot, and the continued development of good mast trees into maturity.

THE CHAMBERS-FILA LOT

# THE FILA-CHAMBERS LOT

25 1/2 ± ACRES

## FOREST TYPES



### FOREST TYPE KEY:

- A - UPLAND HARDWOODS, OAK (J 3 B), 18 ± ACRES
- B - WHITE PINE/HARDWOOD (N 3 B), 6 ± ACRES
- C - PINE/HEMLOCK/HARDWOOD (T 3 B), 1 ± ACRES

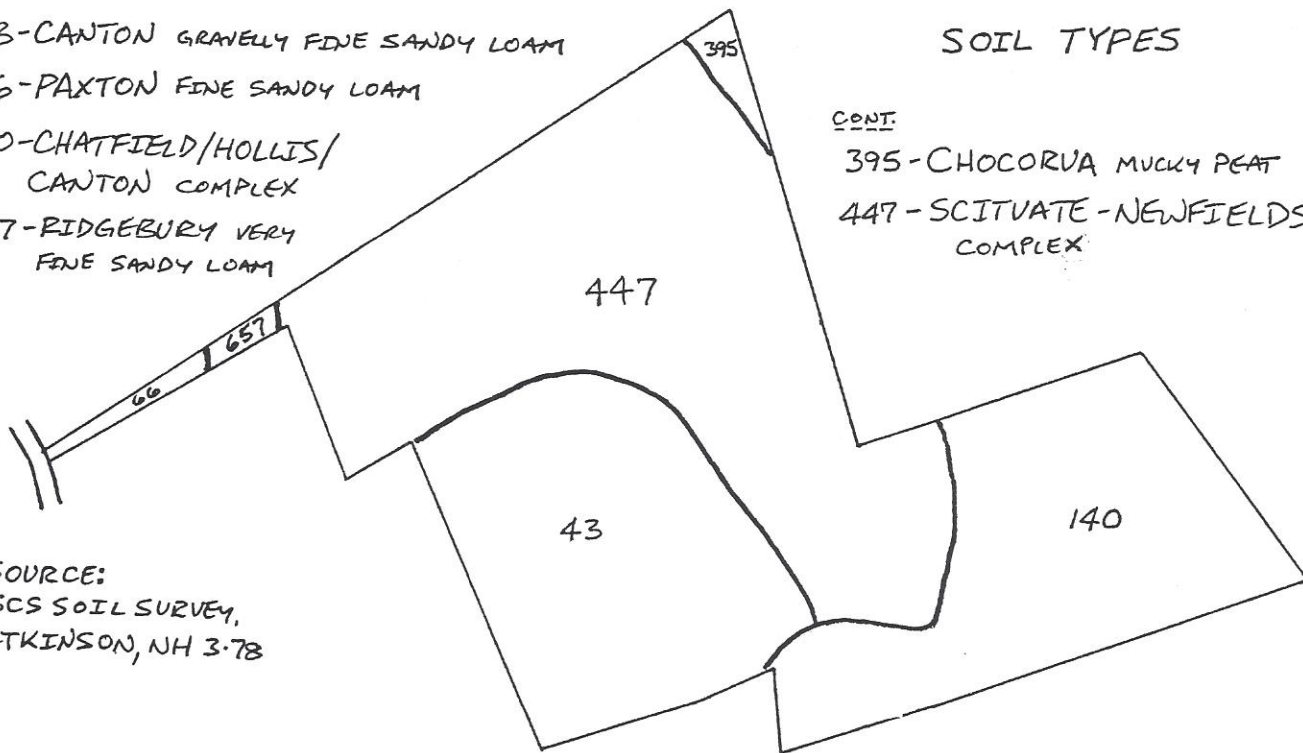
### SOIL TYPE KEY:

- 43 - CANTON GRAVELLY FINE SANDY LOAM
- 66 - PAXTON FINE SANDY LOAM
- 140 - CHATFIELD/HOLLIS/CANTON COMPLEX
- 657 - RIDGEBURY VERY FINE SANDY LOAM

## SOIL TYPES

### CONT.

- 395 - CHOCORVA MUCKY PEAT
- 447 - SCITVATE-NEWFIELDS COMPLEX



SOURCE:  
SCS SOIL SURVEY,  
ATKINSON, NH 3-78

SCALE:  
1" = 330'



MAPS BY: CHARLES A. MORENO, CONSULTING FORESTER  
CENTER STRAFFORD, NH AUGUST 1989

THE CHAMBERS-FILA LOT

Total Area: 25.5± Acres  
 Wooded Area: 25.5± Acres

TECHNICAL DATA

Basal Area/Acre	85.0 Sq. Ft.
Trees/Acre	108.2 Trees
Mean Stand Diameter	12.0 Inches
Growth Rates	2.0 - 3.0%
Site Index	60 - 70 (WP)
Softwood Sawtimber	25.0± MBF
Hardwood Sawtimber	60.0± MBF
Firewood Volume	459± CORDS

WOODLAND CHARACTERISTICS

**Location:** Located in northeast corner of town, off East Road. Borders the Towns of Hampstead and Plaistow, with 6 acres located in Plaistow.

**Access:** Good. Woods road access from East Road. Well-established internal trail. Long, uphill skid to back sections for logging. Distances for logging: 0 to 1800 feet.

**Soils:** Scituate-Newfields soil complex (good productivity for oak and pine growth, prone to wetness in spring and late fall; 46% of parcel). Chatfield/Hollis/Canton soil complex, (fair to good productivity for oak and pine growth; 26% of the area). Canton gravelly fine sandy loam (a well-drained soil, good for the growth of pine, fair for oak; 25% of parcel). Faxton fine

sandy loam (a moist, rich soil, located in access road area, which causes seasonal wetness on road; 1% of area). Ridgebury very fine sandy loam (poorly-drained soil near landing site; road may need occasional gravel application; 1% of area). Chocorua mucky peat (wetland soil, mostly red maple stocking, 1% of parcel area).

Topography: Level to steeply sloping (0 to 25% slopes). Slopes downhill towards back of lot. Rocky terrain in places.

#### SPECIES COMPOSITION

<u>Species</u>	<u>% of Basal Area</u>	<u>% of Timber Volume</u>
Red Oak	27%	35%
Black Oak	13	11
White Pine	11	29
White Oak	10	6
Pignut Hickory	10	9
Red Maple	8	
White Birch	7	3
Black Birch	6	
Hemlock	4	6
White Ash	2	<1
Beech	2	
Shagbark Hickory	<1	
Hemlock	<1	

SILVICULTURAL RECOMMENDATIONS

DESCRIPTION: Similar in history to several of the other Town Forest parcels, The Chambers-Fila Lot was once pastureland. Pine has been harvested in the past from the forest which grew-up in the abandoned fields. Most of the lot received an improvement cut/thinning in 1987.

Forest quality is variable. The best growth appears to be in the pine/hardwood pocket in the northern and central sections of the lot. To the south and east, the soil is excessively drained, rocky, and steeply sloping. The oak growing in these areas is generally not as vigorous or tall as in the areas with moister soils. Gypsy moth could be a problem in the drier sites. A small pocket of hemlock/hardwood below the main slope of the lot is a welcome change from the prevailing oak and pine/hardwood timber types in the area.

The parcel is silviculturally up-to-date, and will not require a follow-up thinning until the late 1990's. The long term objective of management is to develop oak and pine sawtimber, and to regenerate the oak areas into more of a pine mix.

REGENERATION: Sparse in areas; red maple, hickory, and white pine.  
Areas with witch hazel coverage.

SILVICULTURAL STAGE: Intermediate, commercial.

## PRESCRIPTIONS:

- 10- 15 Years Improvement Cut/Thinning. Follow-up to initial 1987 treatment. Remove weak and poorly formed trees, thin around oak, pine, and hickory crop trees. Retain white pine as a seed source.
- 20- 30 Years Crown Thinning. Last treatment before regeneration harvests using shelterwood technique. Release advance pine regeneration.

MULTIPLE-USE RECOMMENDATIONS

RECREATION: A well-travelled trail bisects the Chambers-Fila Lot and continues for a long distances through Plaistow town land, in addition to other properties. The major use of the trail presently is by ATV's. A possibility for improving trail usage would be to create a long trail loop, partly through Plaistow town land (and in conjunction with the town of Plaistow), for use by cross-country runners, skiers, and mountain bikers (a non-motorized sport gaining in popularity). While the forest in the Chambers-Fila Lot is not variable enough to make a good nature-trail (as in the Marshall, Sawyer, and Sawmill Swamp Lots), the terrain is well-suited for these exercise-oriented sports.

WILDLIFE: The major wildlife feature of the Chambers-Fila Lot is the stocking of mast-producing trees including oak and hickory. The small hemlock pocket may provide some winter cover for deer and grouse. The regeneration of hemlock in this area should be a consideration.

THE NOYES LOT



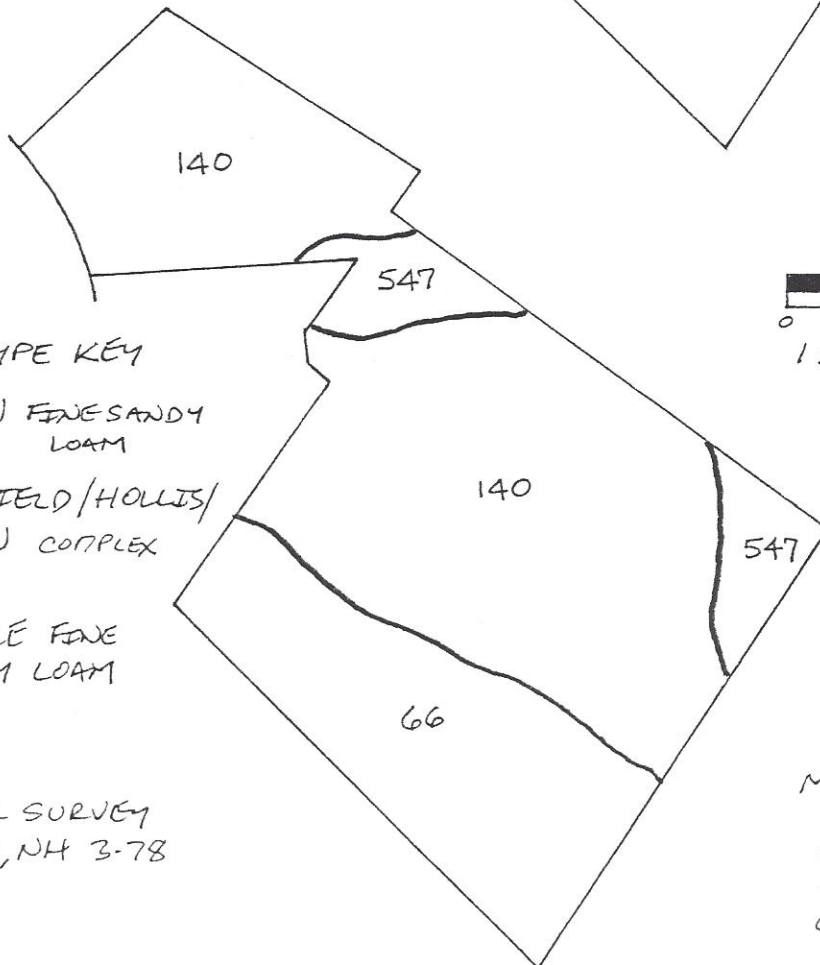
# THE NOYES LOT

7.4 ± ACRES



## FOREST TYPE KEY

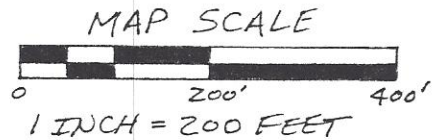
- A - MIXED HARDWOODS (M3A/B), 6.7 ± ACRES
- B - WETLAND HARDWOODS (Q3B), .7 ± ACRES



## SOIL TYPE KEY

- 66 - PAXTON FINE SANDY LOAM
- 140 - CHATFIELD/HOLLIS/CANTON COMPLEX
- 547 - WALPOLE FINE SANDY LOAM

SOURCE:  
SCS SOIL SURVEY  
ATKINSON, NH 3-78



MAPS BY:  
CHARLES A. MORENO  
CONSULTING FORESTER  
CENTER STRAFFORD, NH  
603 335-1961 AUG 1989

THE NOYES LOT

Total Area: 7.4± Acres  
 Wooded Area: 7.4± Acres

TECHNICAL DATA

Basal Area/Acre	100.0 Sq. Ft.
Trees/Acre	138.6 Trees
Mean Stand Diameter	11.5 Inches
Growth Rates	2.0 - 3.0%
Site Index	60 - 70 (WP)
Softwood Sawtimber	10.1± MBF
Hardwood Sawtimber	3.9± MBF
Firewood Volume	196± CORDS

WOODLAND CHARACTERISTICS

**Location:** In northeastern section of town, off Crown Hill Road, and abutting the Town of Plaistow.

**Access:** Fair to poor. Direct access for foot travel from Crown Hill Road. However, steep grade makes woods road construction impractical. Forestry access must be made through an adjoining parcel, a possibility being the Plaistow townlands abutting this parcel. Logging distances: Presently undetermined.

**Soils:** Chatfield/Hollis/Canton soil complex, (fair to good productivity for oak and pine growth; 65% of the area). Paxton fine sandy loam (a moist, rich soil, excellent for the growth of mixed hardwoods, including red oak; pine will grow well, though difficult to regenerate; 27% of area). Walpole very fine

sandy loam (poorly-drained soil, mostly red maple stocking, 8% of parcel area).

Topography: Moderate to steeply sloping (8 to 25% slopes). Combination of sloping terrain and wetland crossing greatly limits access from Crown Hill Road.

SPECIES COMPOSITION

<u>Species</u>	<u>% of Basal Area</u>	<u>% of Timber Volume</u>
Red Maple	26%	
Red Oak	23	27%
White Pine	11	72
Black Birch	9	
White Ash	9	
White Birch	7	
Pignut Hickory	3	
Black Oak	3	
White Oak	2	
Yellow Birch	2	
Beech	1	
Shagbark Hickory	1	
Elm	1	
Popple	<1	
Black Cherry	<1	

SILVICULTURAL RECOMMENDATIONS

DESCRIPTION: The Noyes Lot, the first parcel of the Town Forestlands to be acquired by Atkinson, is also the smallest. The impetus towards acquisition centered around the protection of a historic rock shelter on the property. Originally, plans also intended to manage the property as a wildflower preserve. However, the logistical problems of propagating and/or transplanting wildflowers, and their upkeep, especially through volunteer efforts, appear to have dampened the prospects of such a project succeeding.

A mixed hardwood forest type covers most of The Noyes Lot, with trees averaging 60 to 75 years of age. Soils are moist and productive for hardwoods (particularly on the southwestern hillside with Paxton soil), as well as pine. Though the continued development of a good-quality sawtimber forest is desirable, management efforts presently are unfeasible because of poor access and the relatively small size of the property. Management may be possible if access and logging could be coordinated in conjunction with an adjoining lot, such as the Plaistow town lands.

REGENERATION: Mixed hardwoods, sparse in areas.

SILVICULTURAL STAGE: Intermediate, commercial.

## PRESCRIPTIONS:

1 - 5 Years After access is improved to property:

Improvement Cut/Crown Thinning. Identify and retain fine quality oak and other hardwood sawtimber, and thin around tops. Remove black birch, especially diseased trees, as this species will regenerate prolificly on this moist soil. Retain large pines as a seed source and for aesthetics.

Stocking -- Original	100 Sq. Ft/Acre
Residual	70 Sq. Ft/Acre

10 -15 Years Improvement Cut/Crown Thinning. Continue to manage species mix and thin around crowns of crop trees.

20 -30 Years Crown Thinning. Follow-up treatment. Regeneration cuttings should be initiated 30 - 40 years after initial thinning.

#### MULTIPLE-USE RECOMMENDATIONS

RECREATION: The major point of interest on the Noyes Lot, as previously mentioned, is the rock shelter, located near the southern bound of the property. A trail has been laid-out by the Conservation Commission to the shelter, but is currently in need of brushing.

FOREST TREATMENT PLAN

## INTRODUCTION

A key ingredient of successful forest management is a systematic approach in applying the various recommended forest practices. In this section, all prescribed silvicultural treatments are organized chronologically, based on priority, cash flow, and access. To provide a perspective of what stage management activity on the Town Forestlands stands, projects completed in the last decade are also listed and dated.

This schedule is intended more to establish chronology for the prescribed practices than a strict timetable. A flexible timetable is recommended in order to accommodate the occurrence of good seed years, weather, markets, and the availability of reliable loggers.

Generally, management activity since 1985 has been aimed at accomplishing at least one major project per year, be it the thinning of a parcel, management planning, boundary maintenance, or the like. The goal of scheduling is that all prescribed activity is accomplished and that all the parcels are brought silviculturally up-to-date in ten years.

NOTE: BOUNDARY LINES on all properties need regular maintenance. At this point, most lines have been located and flagged by Chet Ladd of the Conservation Commission. It is recommended, however, that the investment be made to blaze and paint all lines. This will help avoid the continuous difficulty and expense of locating and reflagging lines. Blazed lines are far more permanent. The best time to blaze boundaries is on a lot by lot basis as each parcel is treated silviculturally. A note to this effect will be mentioned in the schedule of forest treatments.

I. FOREST MANAGEMENT ACCOMPLISHED: 1980 - 1989

<u>DATE</u>	<u>PROJECT</u>
1980-89	Boundary Lines - Most lines located and flagged by Chet Ladd, Atkinson Conservation Commission, on all parcels.
1980-89	Trails - Several created in Sawyer Lot; others mapped and/or maintained (C. Ladd).
1980-89	Sawyer Lot (Field) - Mowed and maintained in open condition for wildlife. Wildlife shrubs planted on field edges. (C. Ladd)
1980	Sawyer Lot (Cmpt 3) - Forest management plan. (J.B. Cullen)
1981	Sawyer Lot (Cmpt 3) - Thinning/improvement cut on 20 acres of stands A, F, and G. (J.B. Cullen) (84.5 MBF of white pine harvested)
1982	Sawyer Lot (Cmpt 3) - 700' fire access road constructed. (SCS design and cost-share).
1982	Chadwick Lot - Light cordwood thinning on 8 acres. Lot up-to-date silviculturally. (C. Ladd)
1983	Sawyer Lot (Cmpt 3) - Light firewood thinning on 20 acres, Stand A, D, F, & G; 106 cords. (C. Ladd)
1984	Chadwick Lot - Foot bridge and benches installed on recreational trails as Scout projects. (Hickson & Miller)
1985	Marshall Lot - Educational stations created on main woods trail, with map. (Ladd & Clark)
1985	Stickney Lot - Improvement cutting on 25 acres. Lot up-to-date silviculturally. (C. Moreno)
1987	Chambers-Fila Lot - Improvement cut on 23 acres. Most of lot up-to-date. (C. Moreno)
1988	Sawyer Lot (Cmpt 2) - Improvement cut/thinning on 27 acres, Stands A, C, and F. (C. Moreno) (Cmpt 1) - Improvement cut/overstory release of pine on 3 acres, Stand D. (C. Moreno)
	Slade Lot - Improvement cut/thinning on 11 acres. Lot up-to-date. (C. Moreno)
1989	Forest Management Plan - Comprehensive plan for all parcels, under SP-44 program. (C. Moreno)



II. SCHEDULE OF FOREST TREATMENTS: 1990 - 1999

1990

- Winter \* Marshall Lot - Improvement cut/thinning, 35 acres.  
- Boundary blazing and painting.
- Spring \* Marshall Lot - Update nature trail guide, distribute  
at Town Meeting.
- Summer \* Sawyer Lot - (If good cone year, otherwise postpone)  
Understory removal of black birch, 3G.  
- TSI, Stands 1E and 3H.
- Fall \* Sawmill &  
Feuer - Explore access possibilities into lots.

1991

- Winter \* Sawyer Lot - Harvest, 45 acres.  
Stands 1A, 1F, 2A, 2C, 3A, & 3F.  
- Boundary blazing & painting.
- Summer \* Sawyer Lot - Biomass harvest, 12 acres.  
Stands 1B & 3D.
- \* Sawmill Lot - Biomass harvest, 15 acres.  
If access available.  
- Boundary blazing and painting.
- Fall \* Sawyer Lot - Create nature-trail guide.
- \* Sawmill Lot - Create nature-trail guide.

1992

- Summer \* Feuer Lot - Harvest, 17 acres. If access available.  
- Boundary blazing and painting.

1993

- Summer \* Noyes Lot - Harvest, 7 acres. If access available.  
- Boundary blazing and painting.

1994

- Summer \* Chadwick Lot - Harvest, 25 acres. If stand stocking  
adequate.  
-Boundary blazing and painting.

\*\*\* All lots treated and silviculturally up-to-date \*\*\*

1995

Summer \* Stickney Lot - Harvest, 29 acres. If stand stocking adequate.  
-Boundary blazing and painting.

1996

Summer \* Slade Lot - Harvest, 10 acres. If stand stocking adequate.  
-Boundary blazing and painting.

1997

Summer \* Chambers-Fila- Harvest, 25 acres. If stand stocking adequate.  
-Boundary blazing and painting.

1998

Summer \* Sawyer Lot - Harvest, 35 acres. Compartment 1. adequate.  
-Boundary blazing and painting.

5-YEAR  
COST/REVENUE ANALYSIS

PROJECT	NET REVENUE	NET EXPENSE	YEAR'S NET GAIN
<u>1990</u>			
Marshall Lot			
- Harvest	\$10,000		
- Boundaries		\$ 250	
- Nature Guide		\$ 150 (budgeted)	
Sawyer Lot			
- TSI		\$ 500	
NET			\$ 9,100
<u>1991</u>			
Sawyer Lot			
- Harvest	\$ 5,000		
- Boundary blaze		\$1000	
- Biomass harvest	\$ 0		
- Nature Guide		\$ 500	
Sawmill Lot			
- Biomass harvest	\$ 0		
- Boundary blaze		\$ 400	
- Nature Guide		\$ 500	
NET			\$ 2,600
<u>1992</u>			
Feuer Lot			
- Harvest	\$ 1,500		
- Boundary blaze		\$ 50	
NET			\$ 1,450
<u>1993</u>			
Noyes Lot			
- Harvest	\$ 600		
- Boundary blaze		\$ 150	
NET			\$ 450
<u>1994</u>			
Chadwick Lot			
- Harvest	\$ 600		
- Boundaries		\$ 500	
NET			\$ 100
TOTALS	\$17,700	(\$4,000)	\$13,700

FINAL ESTIMATED BALANCE..... \$13,700

APPENDICIES

## APPENDIX A

## SCIENTIFIC NAMES AND ABBREVIATIONS FOR TREE SPECIES

Softwoods

White Pine	WP	<u>Pinus strobus</u>
Red (Norway) Pine	RP	<u>Pinus resinosa</u>
Pitch Pine	PP	<u>Pinus rigida</u>
Eastern Hemlock	HM	<u>Tsuga Canadensis</u>
Eastern Red Cedar	CE	<u>Juniperus virginiana</u>

Hardwoods

Northern Red Oak	RO	<u>Quercus rubra</u>
Black Oak	BO	<u>Quercus velutina</u>
Scarlet Oak	ScO	<u>Quercus coccinea</u>
White Oak	WO	<u>Quercus alba</u>
Swamp White Oak	SWO	<u>Quercus bicolor</u>
American Beech	BE	<u>Fagus grandifolia</u>
Red (White) Maple	RM	<u>Acer rubrum</u>
Sugar (Rock) Maple	SM	<u>Acer saccharum</u>
White (Paper) Birch	WB	<u>Betula papyrifera</u>
Yellow Birch	YB	<u>Betula allegheniensis</u>
Black Birch	BB	<u>Betula lenta</u>
Shagbark Hickory	SH	<u>Carya ovata</u>
Pignut Hickory	PH	<u>Carya glabra</u>
Mockernut Hickory	MH	<u>Carya Tomentosa</u>
White Ash	WA	<u>Fraxinus americana</u>

American Basswood	BA	<u>Tilia americana</u>
Black Cherry	BC	<u>Prunus serotina</u>
American Elm	EL	<u>Ulmus americana</u>
Bigtooth Aspen (Popple)	PO	<u>Populus grandidentata</u>
Black Gum (Tupelo)	BG	<u>Nyssa sylvatica</u>
Butternut	BU	<u>Juqlans Cinerea</u>
Apple	AP	<u>Malix spp.</u>
Willow	WI	<u>Salix spp.</u>

APPENDIX B  
FOREST TYPE KEY

I. FOREST TYPES

- J = Upland Hardwoods
- M = Mixed Hardwoods
- N = Pine/Hardwood
- Q = Wetland Hardwoods
- T = Pine/Hemlock/Hardwood
- W = White Pine

II. SILVICULTURAL STAGE

- 1 - Regenerating (Seedling - Sapling)
- 2 - Young Intermediate (Precommercial)
- 3 - Intermediate (Commercial)
- 4 - Mature (Regeneration Harvest Stage)
- 5 - Unevenaged (Various Stages)

III. STAND STOCKING

- A = Overstocked
- B = Fully Stocked
- C = Understocked

## APPENDIX C

## FOREST MANAGEMENT RECORDS: 1985 -1988

Parcel	Sawtimber Species Harvested			FWD	Gross Revenue
	WP	RO	WO		
1985					
Stickney				116.5 Cd	\$1,398.00
1987					
Ch.-Fila	735 BF	480 BF	75 BF	121	\$1,486.34
1988					
Sawyer	10,728	425		229	\$3,554.31
Slade				84	\$ 924.00
TOTALS	11,462 BF	905 BF	75 BF	550.5 Cd	\$7,362.65



## APPENDIX D

## TREE INSECTS AND DISEASE INFORMATION

Several pathogens were observed affecting trees in the property. No disease is widespread or cause for alarm, presently. Diseased trees should be removed in the course of thinning, thereby salvaging any merchantable wood and reducing the possibility of spreading the disease.

White pine blister rust was noted in a few pine, in the Sawyer and Marshall Lots. Affected trees should be removed during the next scheduled thinning.

A relatively low incidence rate of beech bark disease, usually a widespread disease, was noted. Heavy decay occurs over a period of five to twenty years, after which the disease is usually fatal. However, because beech usually regenerates prolificly, there is little chance that the species will be decimated to any significant degree. Many of the older beech which contracted the disease in the Stickney Lot were thinned-out in 1985.

Nectria cankers and trunk rot caused by Inonotus obliquus in white, yellow, and black birch was also noted. Black birch is most heavily afflicted and should be removed. Dieback in some white birch for unknown reasons was noted; this condition appears widespread in our region.

Other diseases of little concern because of low incidence is Strumella cankers in oak, and Nectria in red maple.

The major insect pest which will continue to affect the properties, barring the appearance of an effective biological control agent, is the gypsy moth. The gypsy moth is notoriously attracted to oak stands. Several of the parcels with high concentrations of oak are extremely

susceptible to periodic attack. These parcels include the Stickney, Chadwick, Sawmill Swamp, and Chambers-Fila lots. Also susceptible are the Slade, Feuer, and Noyes lots. Silvicultural practices will include increasing the proportion of tree species unpalatable to the gypsy moth over time, in particular hickory, ash, and maple.

## APPENDIX E

## Organization of the Properties into Management Compartments and Stands

Most of the parcels comprising the Town Forestlands were deemed small enough in size and sufficiently homogeneous in forest type to be treated individually as one compartment from a statistical standpoint. The Sawyer Lot is the exception, because of its size and variability. Eight separate forest types were identified in this parcel, each treated as a substrata in the data analysis.

Due to its size, the Sawyer Lot was also organized into three management compartments. The organization of larger land tracts into compartments and stands helps in achieving management goals. Conversely, the other parcels are treated as a single compartment or management unit each. Through this approach, inventory data is more applicable and precise, specific silvicultural recommendations are made, access planned, and timber harvests logically executed.

COMPARTMENTS are management areas, or easily defined sections of land for which: (1) forest stocking and volume data are presented, and (2) a series of silvicultural treatments are planned using similar access routes. Harvesting will usually concentrate on one lot or compartment at a time.

The parcels or compartments are further subdivided into STANDS, which constitute a more or less homogeneous forest type and often have similar harvest histories over the recent past. Though prescriptions may vary between stands, several stands within a parcel or compartment may be treated concurrently during a harvest, each to its own specifications.

APPENDIX C

GLOSSARY

Basal Area	The number of square feet contained in the cross-section of a tree at breast height.
BA/AC	<u>Basal Area per Acre</u> , given in square feet.
Board Foot	A unit of volume measurement equal to the volume in a 1" x 12" x 12" block of wood.
Commercial	Merchantable or salable timber.
Cord	Unit of volume measurement equal to the volume in a 4' x 8' x 4' space.
Crop Tree	Tree, which because of its species, growth, vigor, form, location, and/or market value is designated as a component of the final stand of timber and is favored silviculturally through its lifetime.
Cull	A tree which is unmerchantable as sawtimber due to deformities of decay in its bole.
Cutting Cycle	The period of years or the timespan established between harvests.
DBH	<u>Diameter at Breast Height</u> , or the diameter of a tree at a level 4.5 feet above the ground.
Edge	The demarcation where different habitats come together.
Even-aged	A forest stand where variation in tree age does not exceed 25 years, and no more than two age classes are present.

Intolerant Tree unable to withstand shade when at a young age.

Mature Timber A) Financially mature timber is timber which has reached its peak growth.

B) Economic maturity is the stage where a trees' grade and value will deteriorate if left until the next harvest.

C) Biological maturity is the stage where a tree will have died by the next harvest.

MBF Thousand Board Feet.

Pole A tree 4 to 10 inches in diameter (DBH).

Precommercial Unmerchantable, usually because the trees are too young and small.

Regeneration Seedlings, or a new crop of trees.

Sapling A tree 1 to 4 inches in diameter (DBH).

Sawtimber Trees of sawlog size, or above 10 inches at DBH.

Seedling A young tree less than an inch in diameter.

Silviculture The treatments applied to a forest to improve tree growth and value, and stimulate regeneration. The best long-term economics.

Site Index A ratio between tree age and total height, used to express the productivity of an area.

Site Potential The capacity of a given area of land to grow timber.

Stocking The density of trees on a given area of land.

Stumpage            Standing timber.

Sustained  
Yield                A continuous and cyclic yield of forest products from a land area over many years (usually broken into cyclic cuts during the rotation span). Maintaining forestland productive.

Tolerant            Trees able to withstand low-light conditions.

TSI                  Timber Stand Improvement, referred to here for precommercial operations.

Un-evenaged        A forest stand characterized by a variety of age classes and tree-age spread of over 25 years.

"Weed" Tree        Trees of undesirable species, form, or condition which are interfering with the growth of the crop trees.