State of Vermont

Agency of Natural Resources

Department of Forests, Parks and Recreation

ROXBURY STATE FOREST

LAND MANAGEMENT PLAN

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Forester

May 1988

Approved:

Mollie M. Beattie

Mollie Beattie, Commissioner

3 April 89

Date

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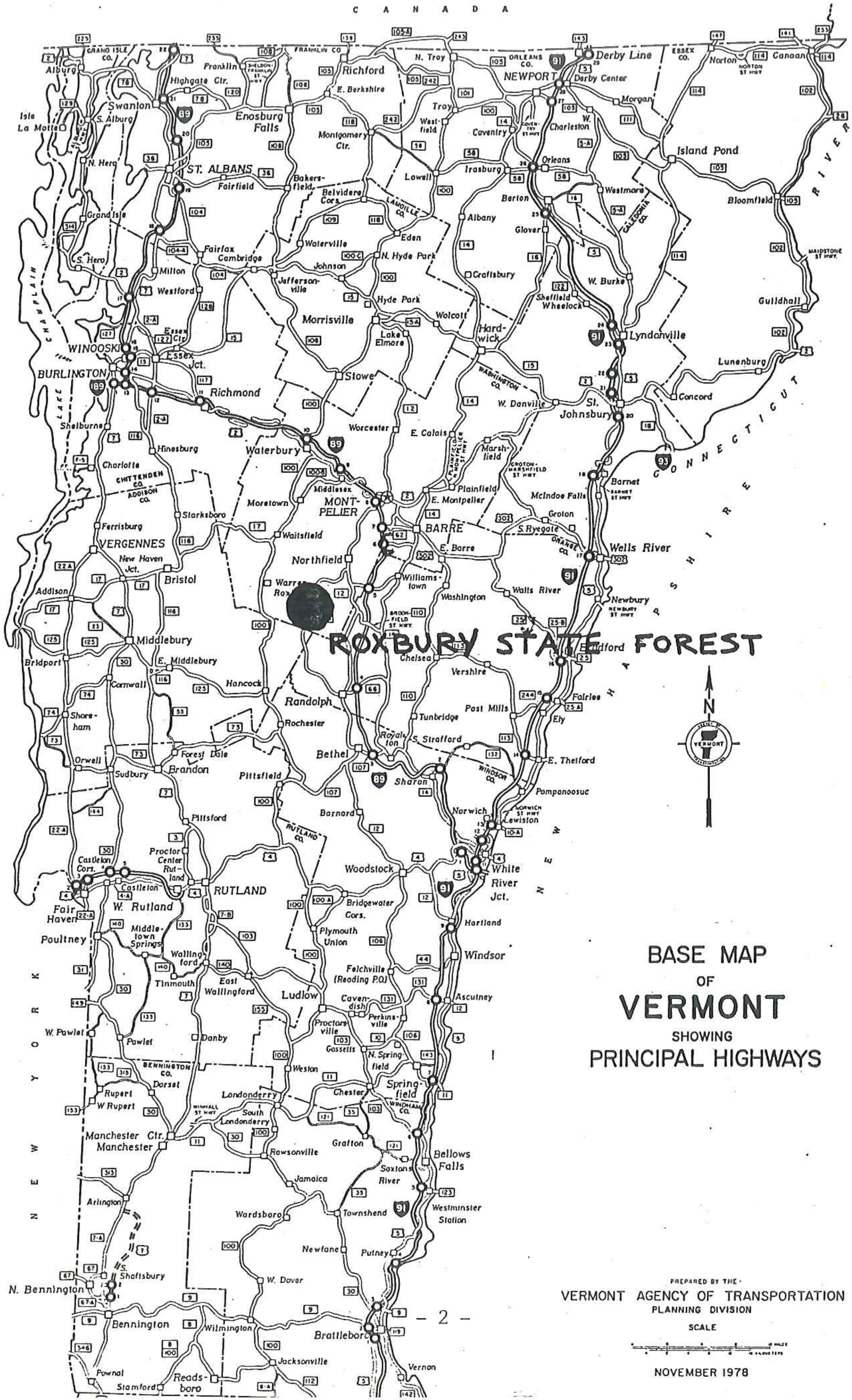
Preface

The objective of public land management by the Department of Forests, Parks and Recreation is the management of all resources on land owned or controlled by the Department for the greatest benefit for the people of Vermont consistent with the capabilities of the resources. It shall be the policy of the Department to manage these lands under the concept of integrated use, a strategy of land management which considers public need and the capabilities of the land to meet these needs, and favors the highest and best use or uses. Compatible uses shall be recognized and as conditions and needs change, uses may be changed. Properly implemented, this multiple use concept maximizes benefits and avoids environmental deterioration.

The following plan includes a description of the existing conditions within the forest, followed by proposed long range management goals and a ten year plan of activities which will be the first step toward achieving those goals.

For the reader unfamiliar with some of the terminology, a glossary is provided in the back. Whenever various interpretations may occur, the glossary definitions is the intended meaning in the plan.


CANADA
ROXBURY STATE FOREST
BASE MAP OF VERMONT SHOWING PRINCIPAL HIGHWAYS
PREPARED BY THE
VERMONT AGENCY OF TRANSPORTATION
PLANNING DIVISION
SCALE
NOVEMBER 1978
LAKE CHAMPLAIN
NEW YORK
NEW HAMPSHIRE
CONNECTICUT RIVER
GRAND ISLE CO.
FRANKLIN CO.
ORLEANS CO.
ESSEX CO.
LAMOILLE CO.
CALEDONIA CO.
WASHINGTON CO.
CHITTENDEN CO.
ADDISON CO.
ORANGE CO.
WINDSOR CO.
RUTLAND CO.
BENNINGTON CO.
WINDHAM CO.
Alburg
Isle La Motte
Swanton
S. Alburg
Highgate Ctr.
Franklin
Richford
E. Berkshire
Enosburg Falls
Montgomery Ctr.
N. Troy
Troy
Westfield
Derby Line
NEWPORT
Derby Center
Morgan
Norton
Canaan
Coventry
Charleston
W. Charleston
Island Pond
N. Hero
ST. ALBANS
Fairfield
Bakersfield
Belvidere Cors.
Lowell
Irasburg
Orleans
Barton
Westmore
Bloomfield
Grand Isle
Albany
Glover
Eden
Waterville
N. Hyde Park
Johnson
Fairfax
Cambridge
Jeffersonville
Hyde Park
Craftsbury
W. Burke
S. Hero
Milton
Westford
Sheffield
Wheelock
Guildhall
Morrisville
Wolcott
Hardwick
Lake Elmore
Lyndonville
Essex Ctr.
Essex Jct.
WINOOSKI
BURLINGTON
Richmond
Stowe
Lunenburg
Concord
Shelburne
Hinesburg
Waterbury
Worcester
E. Calais
W. Danville
St. Johnsbury
Marshfield
Charlotte
Middlesex
MONTPELIER
Moretown
Plainfield
E. Montpelier
Starksboro
Barnet
McIndoe Falls
Groton
Ferrisburg
VERGENNES
Waitsfield
BARRE
S. Ryegate
E. Barre
Wells River
New Haven Jct.
Northfield
Bristol
Williamstown
Washington
Addison
Wells River
Newbury
Middlebury
Chelsea
Bradford
Bridport
E. Middlebury
Vershire
Cornwall
Hancock
Randolph
Post Mills
Fairlee
Ely
Shoreham
Rochester
Tunbridge
S. Strafford
Royalton
Bethel
E. Thetford
Orwell
Forest Dale
Brandon
Sudbury
Pittsfield
Sharon
Pompanoosuc
Pittsford
Barnard
Norwich
Lewiston
Proctor
Center Rutland
Castleton Cors.
Castleton
Woodstock
White River Jct.
W. Rutland
RUTLAND
Fair Haven
Bridgewater Cors.
Poultney
Middletown Springs
Plymouth Union
Hartland
Wallingford
Windsor
Felchville (Reading P.O.)
Tinmouth
East Wallingford
Ludlow
Cavendish
Ascutney
Perkinsville
Proctorsville
W. Pawlet
Pawlet
Danby
Gassetts
N. Springfield
Weston
Dorset
Rupert
W. Rupert
Londonderry
Chester
Springfield
South Londonderry
Manchester Ctr.
Manchester
Grafton
Rawsonville
Bellows Falls
Saxtons River
Jamaica
Arlington
Wardsboro
Townshend
Westminster Station
Newfane
Putney
S. Shaftsbury
N. Bennington
W. Dover
Bennington
Wilmington
Brattleboro
Jacksonville
Pownal
Stamford
Readsboro
Vernon
N
STATE OF VERMONT

General Description

Roxbury State Forest is a 5,509 acre landholding located entirely within the town of Roxbury. Vermont Route 12A provides primary access to the forest, with a number of town roads entering the individual blocks. Cram Hill Block is the largest at 2,443 acres, and lies east of Route 12A. The Rice and Vogt Blocks are contiguous parcels, 1,966 and 1,100 acres respectively, and are situated west of Route 12A.

Acquisition of the forest began in 1930 when 1,950 acres were purchased from the Granville Manufacturing Company, and has continued through the years with the most recent gift/purchase in 1978 of 1,100 acres from Robert Vogt, involving Land and Water Conservation funds. The activities of the Civilian Conservation Corps in the 1930's are still evident on the forest, they include: three major access roads, timber stand improvement on over 800 acres, tree planting, and construction of a dam and leanto.

The terrain of the forest varies from the steep and ledgy ridgelines of the Braintree-Northfield mountain range, to fairly gentle and rolling topography. Although the forest contains considerable road frontage, steep slopes and rock outcrops seriously limit access. Five hundred forty-one (541) acres are over 2,500 feet in elevation, including Rice Mountain of 3,606 feet. Another familiar feature of the forest is the beaver pond on the Cram Hill Block. The state Fish Hatchery is not part of Roxbury State Forest, although the head waters of Flint Brook originate on the Rice Block and feed the facility.

Roxbury State Forest is almost entirely woodland. Northern hardwood associations dominate the forest types, occupying over 80% of the vegetative cover. With increases in elevation, red spruce and white birch become more prevalent, while above 2,500 feet in elevation, where soils are shallow, the spruce-fir type is found.

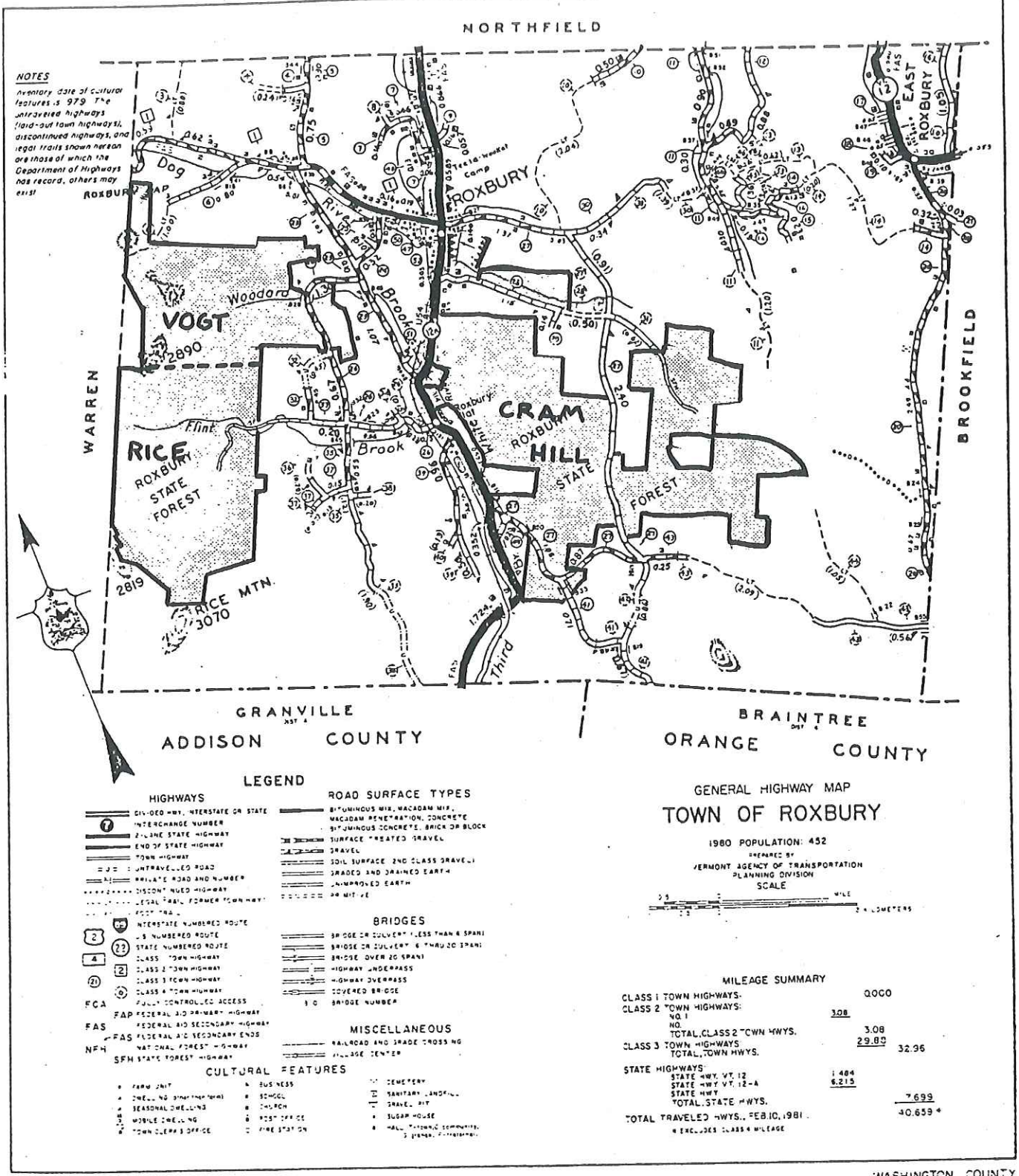
The Cram Hill Block offers favorable wildlife habitat with a diversity of vegetative types and size classes, relative remoteness of a large forested expanse and aquatic environments all suitable for a variety of game and non-game species. A small deer wintering area is located on the block, primarily in softwood stands which afford protection from winter's snow and winds. Snowshoe hare habitat is also available. The Rice and Vogt Blocks offer limited wildlife habitat because of the large expanses of uniform northern hardwood cover types with few changes in the forest canopy.

The forest also provides a variety of dispersed recreational activities. Hunting, snowmobiling and cross-country skiing are among the most common pursuits.

Purpose

Historically, Roxbury State Forest has been managed for timber production. Improved forest access, suitable soils and sites, and preferred forest species favored this management approach. However, watershed management and protection of high elevations and natural areas requires the retention of a continuous forest cover.

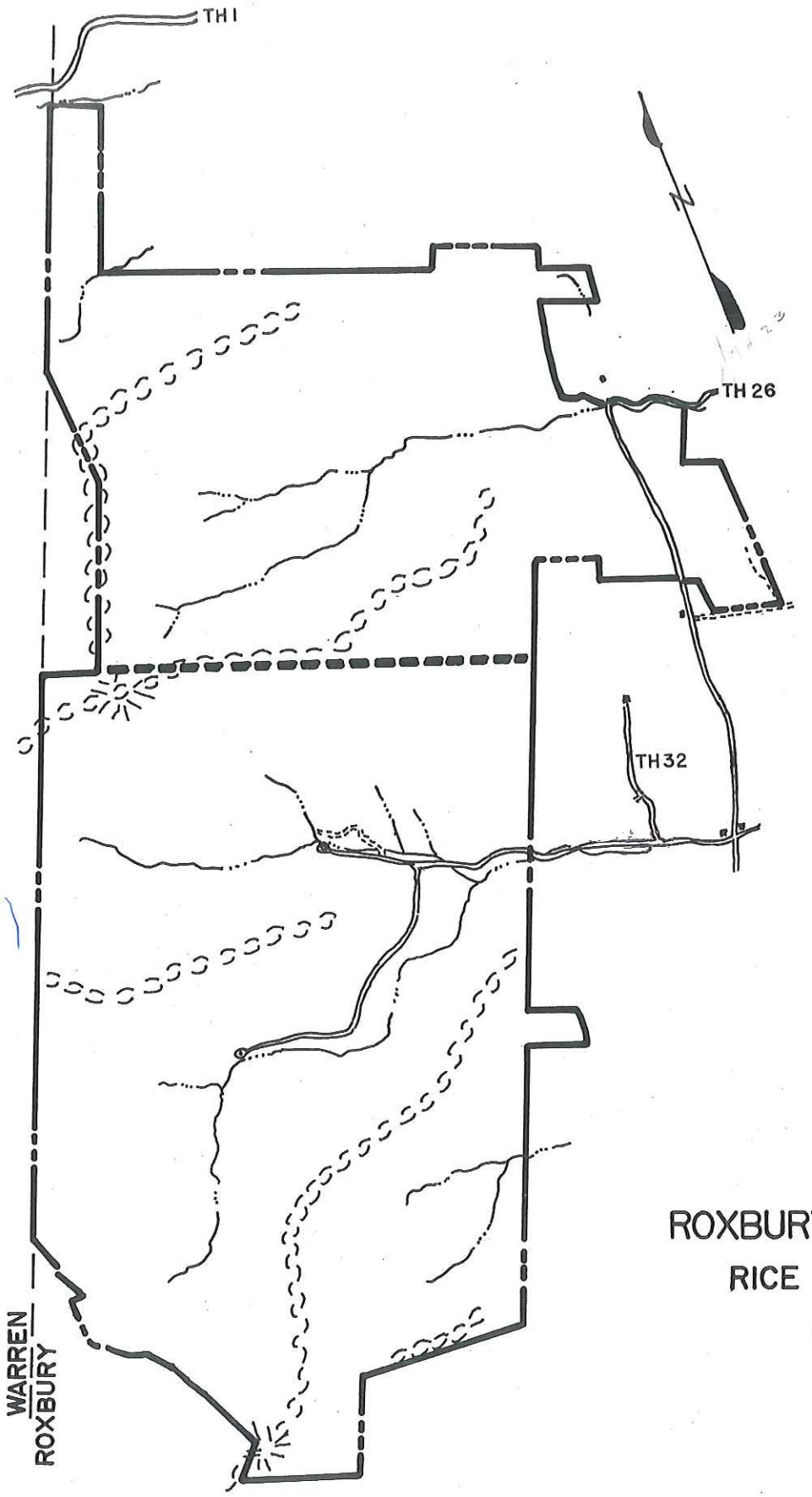
Therefore, management for multiple uses will be the primary goal for most of the forest. Management activities will be designed to maintain or enhance opportunities for dispersed recreation, wildlife and timber production. Overall, the forest is a good site for growing timber. Harvesting forest products will continue with emphasis also placed on the other uses. Timber management will stress an all-aged forest, except in cases of specific wildlife habitat objectives and improvement of forest species composition. Preservation of the Forest's scenic qualities and cultural/historic sites are also important goals and will be emphasized.

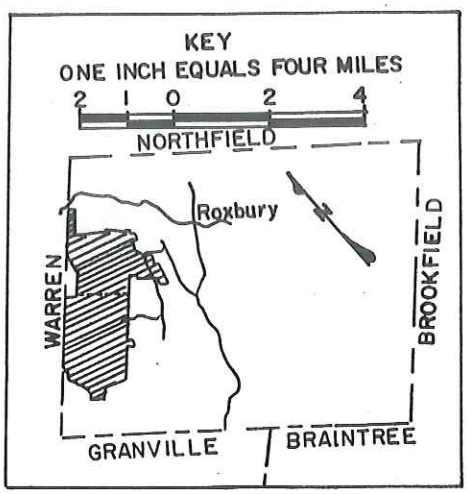


TRANSPORTATION DISTRICT NO. 6

WASHINGTON COUNTY

ROXBURY STATE FOREST 025





ROXBURY STATE FOREST

RICE AND VOGT BLOCKS

ROXBURY, VERMONT

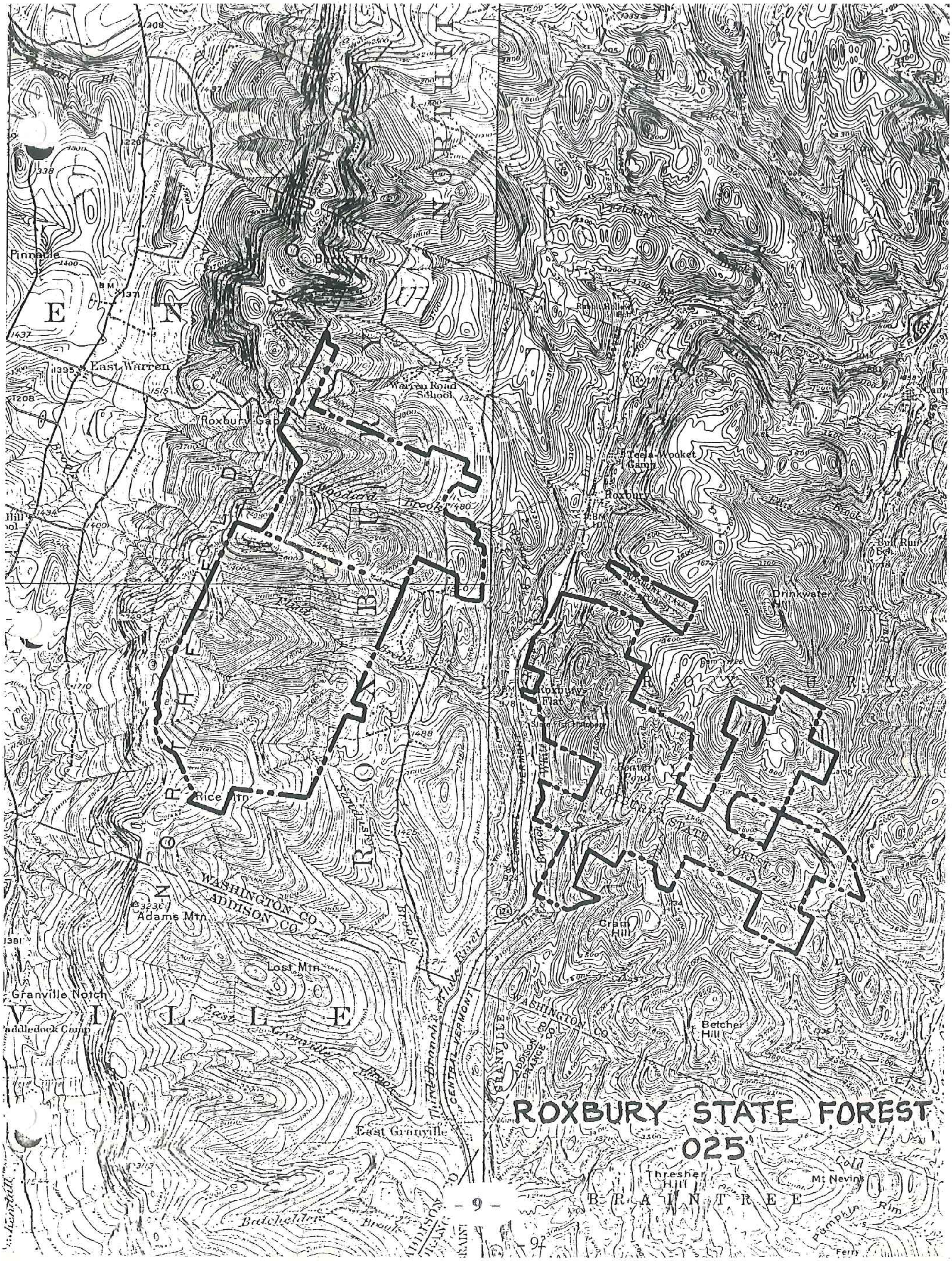
3066 ACRES

BLOCK MAP

40 0 40 60

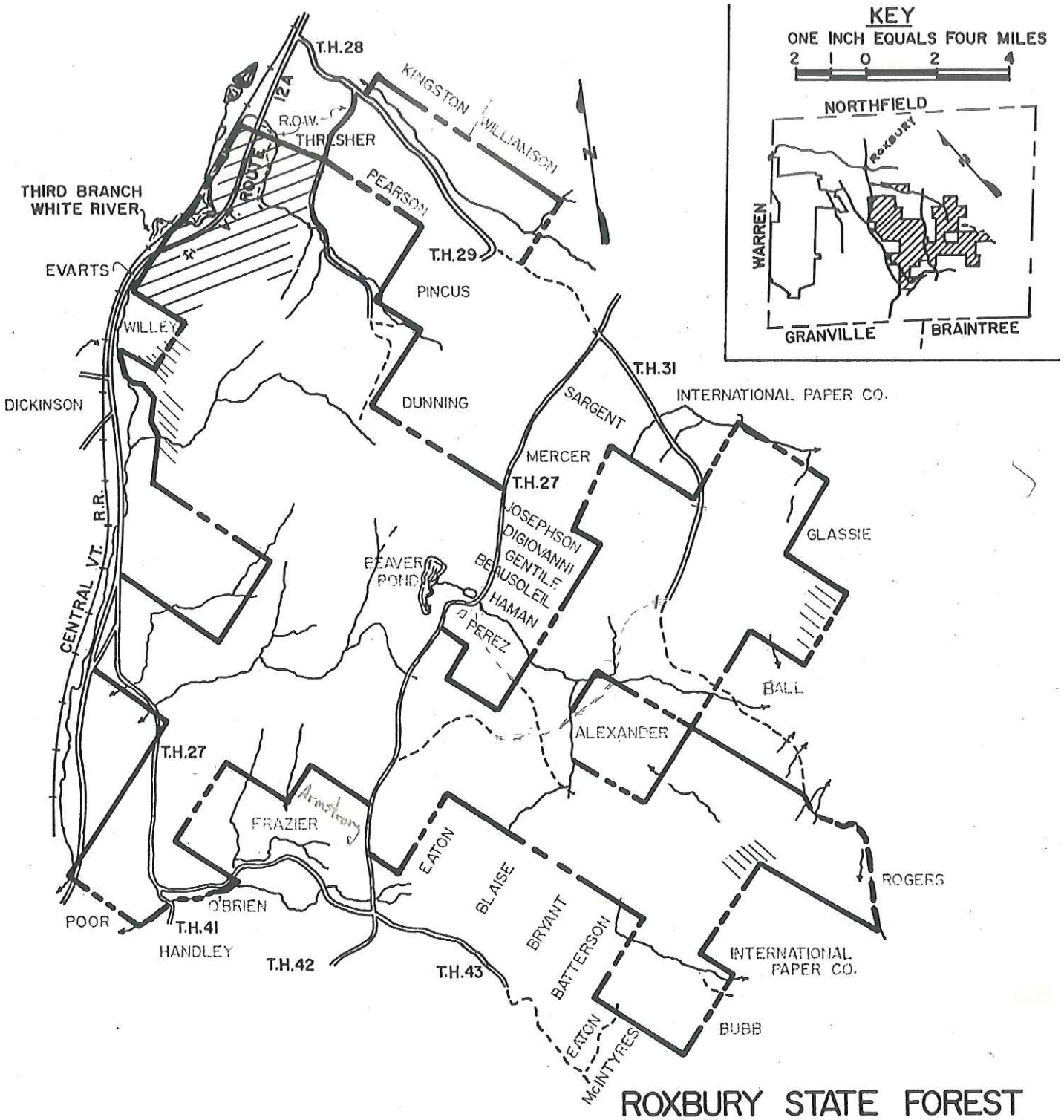
SCALE IN CHAINS

RJT 88MAR


ROXBURY STATE FOREST
025
Roxbury Gap
East Warren
Pinnacle
Warren Road School
Woodard Brook
Rice Mtn
Adams Mtn
Lost Mtn
Granville Notch
WASHINGTON CO
ADDISON CO
East Granville
Roxbury
Roxbury Flat
Teela-Wooket Camp
Drinkwater Hill
ROXBURY
STATE FOREST
Gram Hill
Betcher Hill
Thresher Hill
Mt Nevins
BRAINTREE
Bull Run Sch
Batchelder Brook
Pumpkin

EXISTING CONDITIONS

This section describes the physical characteristics of the block. It is in part an inventory of the resource, and a guide to determining capability of the area to sustain certain activities.



ROXBURY STATE FOREST

CRAM HILL BLOCK

ROXBURY, VERMONT

2443 ACRES

DEER WINTERING AREA

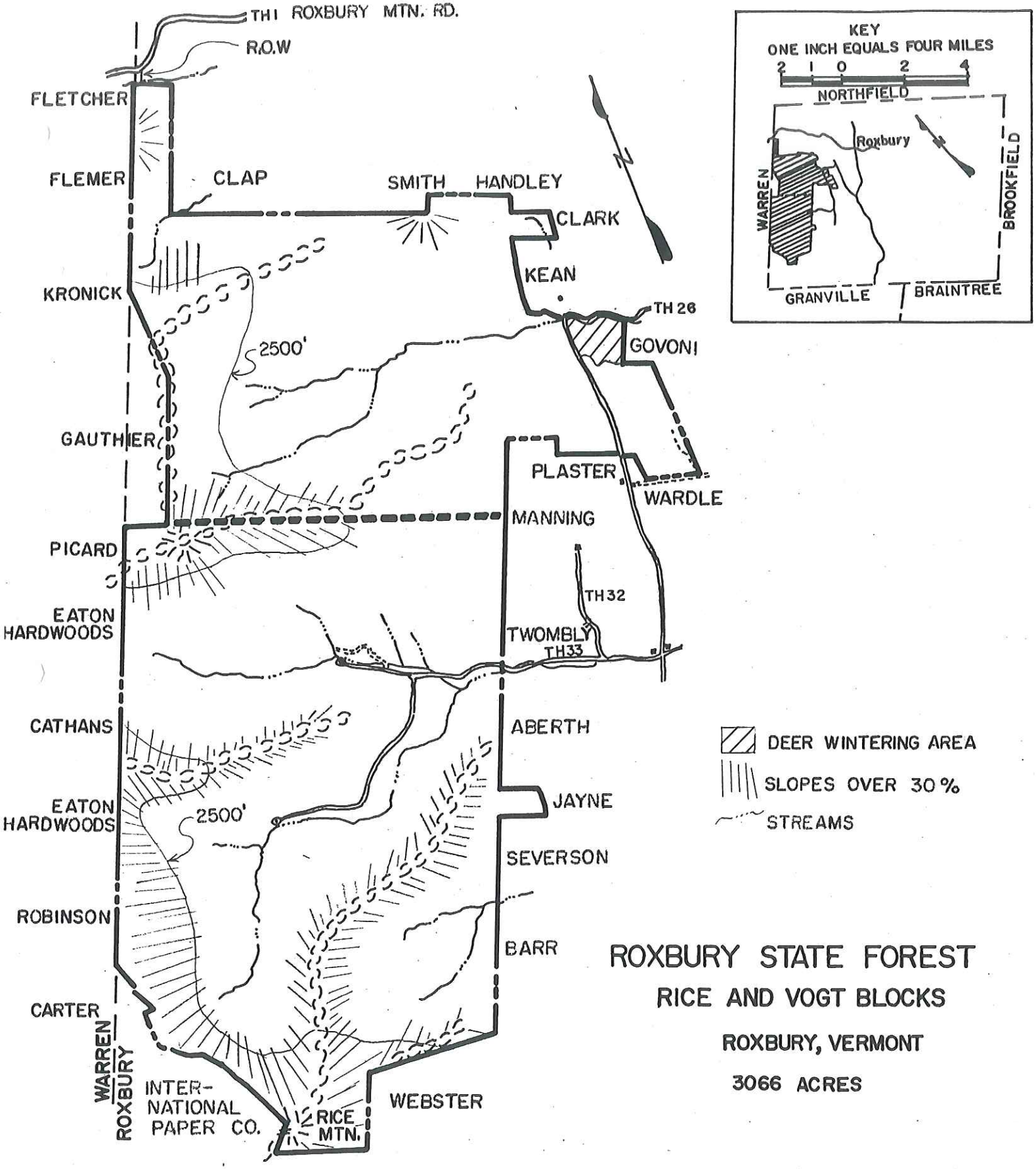
SLOPES OVER 30%

GRAVEL PIT

EXISTING CONDITIONS

20 10 0 20 40 60 80

SCALE: ONE INCH EQUALS 40 CHAINS (2640')



ROXBURY STATE FOREST

RICE AND VOGT BLOCKS

ROXBURY, VERMONT

3066 ACRES

EXISTING CONDITIONS

Vegetative Types

Northern hardwood associations dominate the forest types (83%) on Roxbury State Forest. These stands are primarily evenaged with the major species being sugar maple, beech and yellow birch. Mean stand diameters are in the 10 inch range and are moderately stocked, however many stands are comprised of over 50 percent unacceptable and cull growing stock.

Mixed softwood-hardwood associations make up the remaining portion of the forest. With increases in elevation, the red spruce-white birch forest type begins to dominate. Above 2500 feet in elevation and in terrain characterized by steepness and shallow, rocky soils, the spruce-fir type is prevalent. These areas have been classified protection due to their fragile ecosystems.

From 1974 to 1987 approximately 600 acres have been thinned by selling over 4,000 cords of firewood to local cutters. Past timber sales have concentrated on establishing desirable regeneration in stands which had a high percentage of low quality timber trees. Many of the stands were regenerating to undesirable species like striped maple and beech suckers.

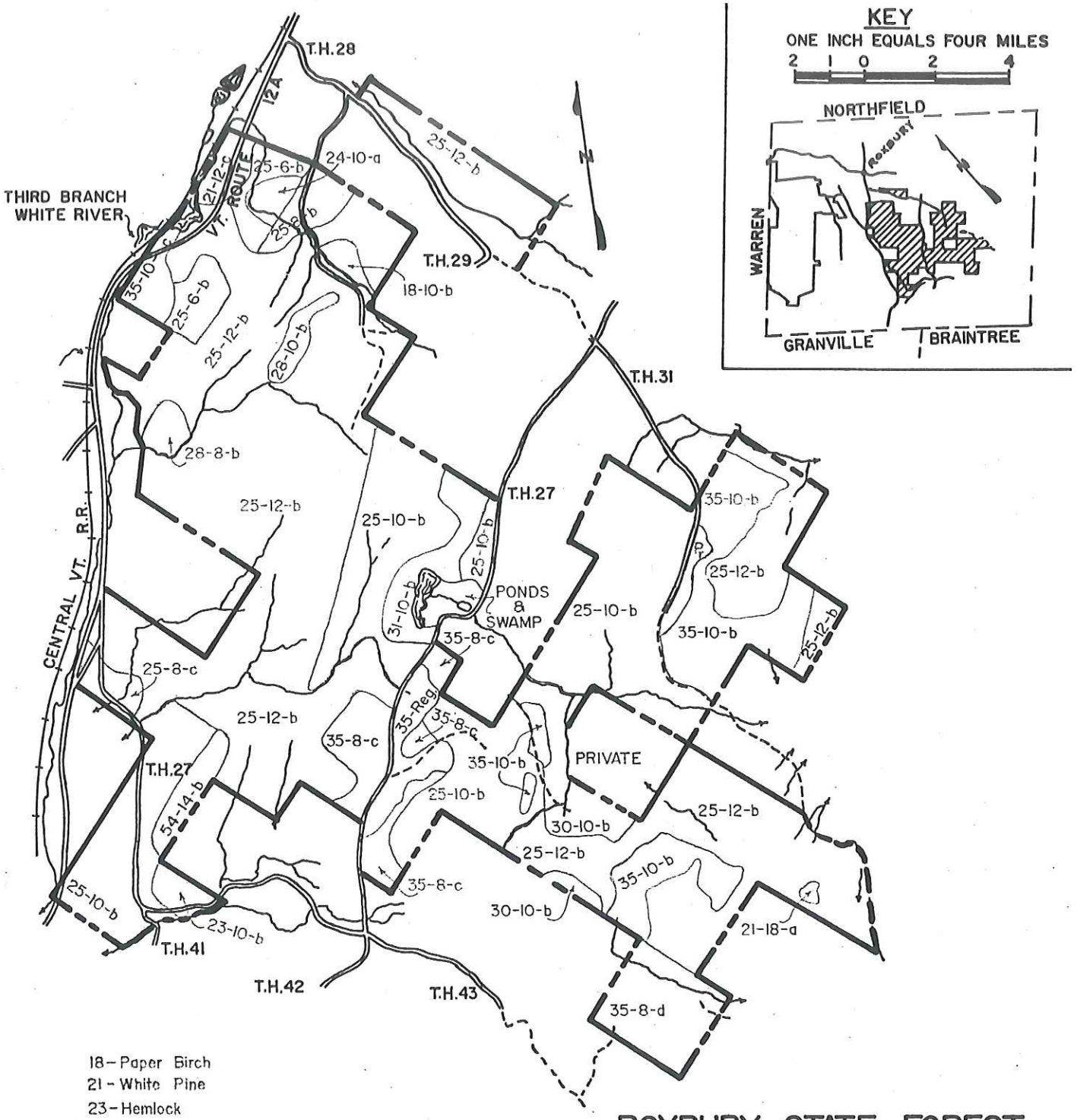
In 1981 and 1982 much of Roxbury State Forest was defoliated by forest tent caterpillar. Areas that received heavy defoliation during that time were beginning to show signs of declining health in 1984. Populations of forest tent caterpillar are being monitored in the forest.

Vegetation on the forest is illustrated by the following maps utilizing the Society of American Foresters' (SAF) classification

system entitled "Forest Cover Types of the United States and Canada." A forest cover type is a descriptive classification of forest land based on present occupancy of an area by tree species.

	SAF Type # (acres)										
Block	18	21	23	24	25	28	30	31	35	54	PR
Cram Hill	8	23	14	13	1,816	30	53	43	388	19	7
Rice	98	-	-	-	1,617	-	20	-	231	-	-
Vogt	21	12	-	-	955	-	-	-	111	-	-
Total	127	35	14	13	4,388	30	73	43	730	19	7
% of Total	2%	>1%	>1%	>1%	80%	>1%	1%	>1%	>13%	>1%	>1%

#18 Paper birch
#21 White pine
#23 Hemlock
#24 Hemlock-yellow birch
#25 Sugar maple-beech-yellow birch
#28 Black cherry-sugar maple
#30 Red spruce-yellow birch
#31 Red spruce-sugar maple-beech
#35 Paper birch-red spruce-balsam fir
#54 Red oak-basswood-white ash
Pr Red pine plantation



18 – Paper Birch
21 – White Pine
23 – Hemlock
24 – Hemlock-Yellow Birch
25 – Sugar Maple-Beech-Yellow Birch
28 – Black Cherry-Sugar Maple
30 – Red Spruce – Yellow Birch
31 – Red Spruce- Sugar Maple-Beech
35 – Paper Birch – Red Spruce – Balsam Fir
54 – Red Oak – Basswood – White Ash
P_r – Red Pine – Plantation

ROXBURY STATE FOREST

CRAM HILL BLOCK

ROXBURY, VERMONT

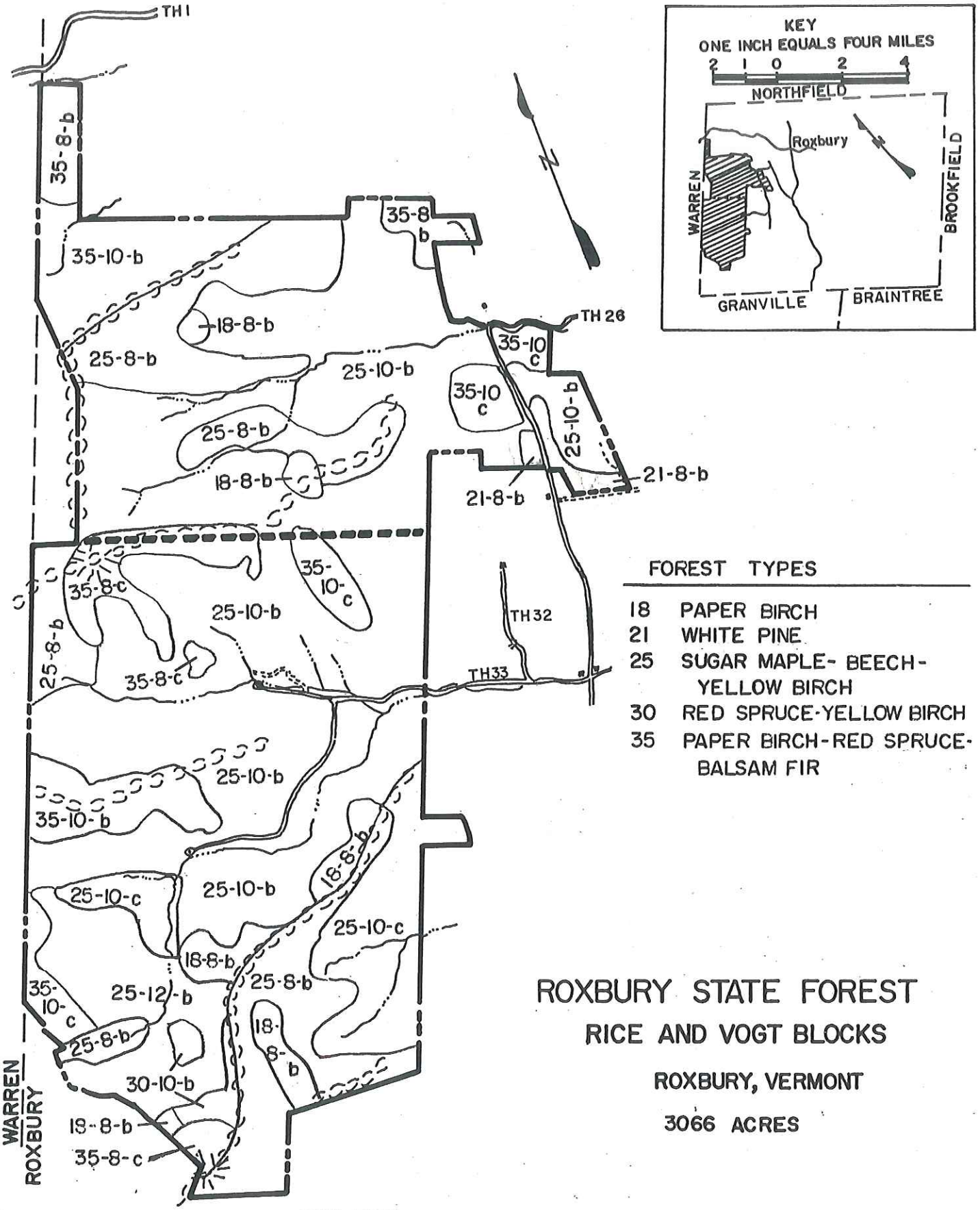
2443 ACRES

VEGETATIVE TYPES

20 10 0 20 40 60 80

SCALE: ONE INCH EQUALS 40 CHAINS (2640')

Rev. 3/88



FOREST TYPES

18	PAPER BIRCH
21	WHITE PINE
25	SUGAR MAPLE- BEECH-YELLOW BIRCH
30	RED SPRUCE-YELLOW BIRCH
35	PAPER BIRCH-RED SPRUCE-BALSAM FIR

ROXBURY STATE FOREST

RICE AND VOGT BLOCKS

ROXBURY, VERMONT

3066 ACRES

MEAN STAND DIAMETER: indicated in inches by 2nd number
STOCKING LEVEL: indicated by: a= overstocked, b= fully stocked
c= understocked, d= unstocked

VEGETATIVE TYPES

40 0 40 60
SCALE IN CHAINS

RJT 3/88

Soils

Roxbury State Forest has not been completely classified and mapped by the Soil Conservation Service. Areas that have been mapped are typical for the region, varying widely in soil depths, drainage and productivity. Soil types most prevalent are the Tunbridge-Lyman-Marlow complexes, and the Peru, Glover and Hartland types.

On the whole, soils at the lower elevations are moderately well drained, above average in forest productivity and moderate in depth to bedrock. These soils provide good sites for timber production and relative ease in harvesting. Increasing in elevation, the soils tend to become excessively well drained with shallow to bedrock soils and numerous ledge outcrops.

A gravel pit on the Cram Hill Block was analyzed in 1978 by the Agency of Transportation. Overall, it was judged to have an excess of fines but was suitable as a granular borrow. The Town of Roxbury purchased gravel from this pit. During the course of 3-4 years the gravel source was depleted. The area now needs to be reclaimed, but will require considerable financing.

Limitations for recreational development on most of the forest is moderate. Generally, percolation for subsurface sewage disposal is fairly poor, but with proper site selection would be feasible on a small scale.

Classifying Forest Productivity

Potential productivity of any particular location can be expressed in many ways. In Vermont, most Agency owned forest lands are taxed at various rates, based on the land's ability to produce wood. In this plan, the four forest site categories established under the statutes are used. In each site category is land which can produce a certain amount of wood measured in cubic feet per acre per year.

Following is a key to the productivity categories. The succeeding map locates the various site classifications as they occur in this management area. The current use values (page 64) are also based on these four forest site categories.

Productivity can be expressed as the height a certain forest type will reach in 50 years, (called the site index). For example, using site index, if white pine is growing on a site at a rate which it will reach 70 feet tall when it is 50 years old, the site is classified as Site I. If it will be between 60 to 69 feet in height, it is Site II.

Productivity Class	Potential Productivity Per Acre Per Year	Timber Height Site Index	
Site I	more than 85 cubic feet	spruce-fir	50
		white pine	70
		n. hardwood	60
		oak hardwood	60
Site II	50-85 cubic feet	spruce-fir	40-49
		white pine	60-69
		n. hardwood	53-59
		oak hardwood	55-59
Site III	20-49 cubic feet	spruce-fir	30-39
		white pine	50-59
		n. hardwood	45-52
		oak hardwood	45-52

Site IV	less than 20 cubic feet	spruce-fir	30
		white pine	50
		n. hardwood	45
		oak hardwood	45

Site Quality

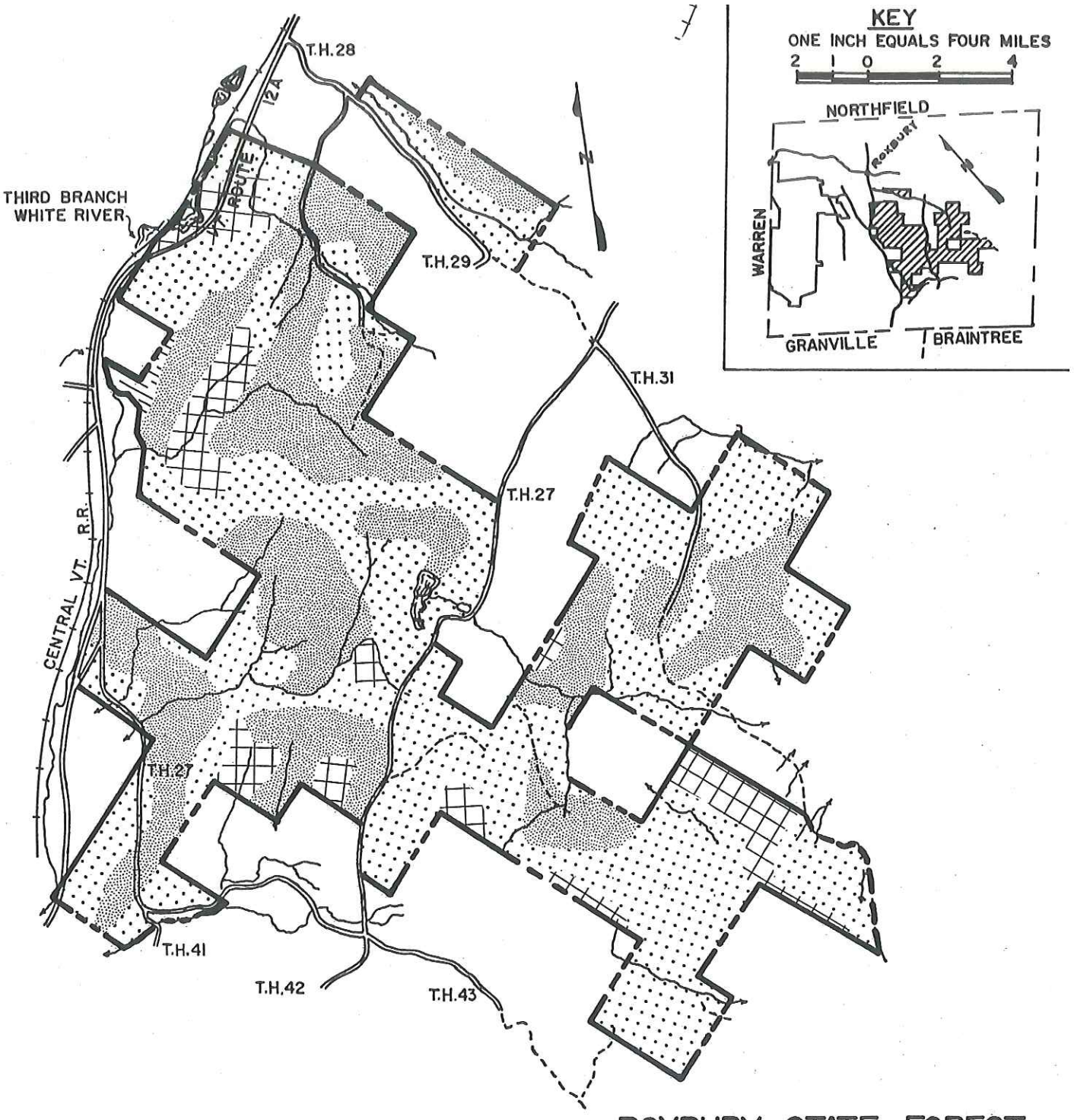
Site quality on Roxbury State Forest is above average, with 65 percent of the acreage having a productivity of site class II or better. Based on this growth potential, forest management for sustained yield of quality timber products is an obtainable goal.

Favorable growth rates also encourage a rapid response from residual stands to silvicultural treatments, this providing a potential for maintaining a full range of age classes. Good sites provide an opportunity for a wider range of vegetative types with benefits to wildlife by improving food and cover.

Forest productivity decreases with an increase in elevation. A total of 11 percent of the forest is comprised of a productivity class of IV. These areas are classified as protection zones because of their fragile ecosystems.

Roxbury State Forest
Acres by Productivity Class

	Productivity Class (acres)			
Block	Site I	Site II	Site III	Site IV
Cram Hill	844	1,328	225	46
Rice	76	722	734	434
Vogt	224	386	344	146
Total	1,144	2,436	1,303	626
% of Total	21%	44%	24%	11%



ROXBURY STATE FOREST

CRAM HILL BLOCK

ROXBURY, VERMONT

2443 ACRES

SITE CLASS

- SITE I
- SITE II
- SITE III
- SITE IV
- TILLABLE

FOREST PRODUCTIVITY CLASSIFICATION

20 10 0 20 40 60 80

SCALE: ONE INCH EQUALS 40 CHAINS (2640')

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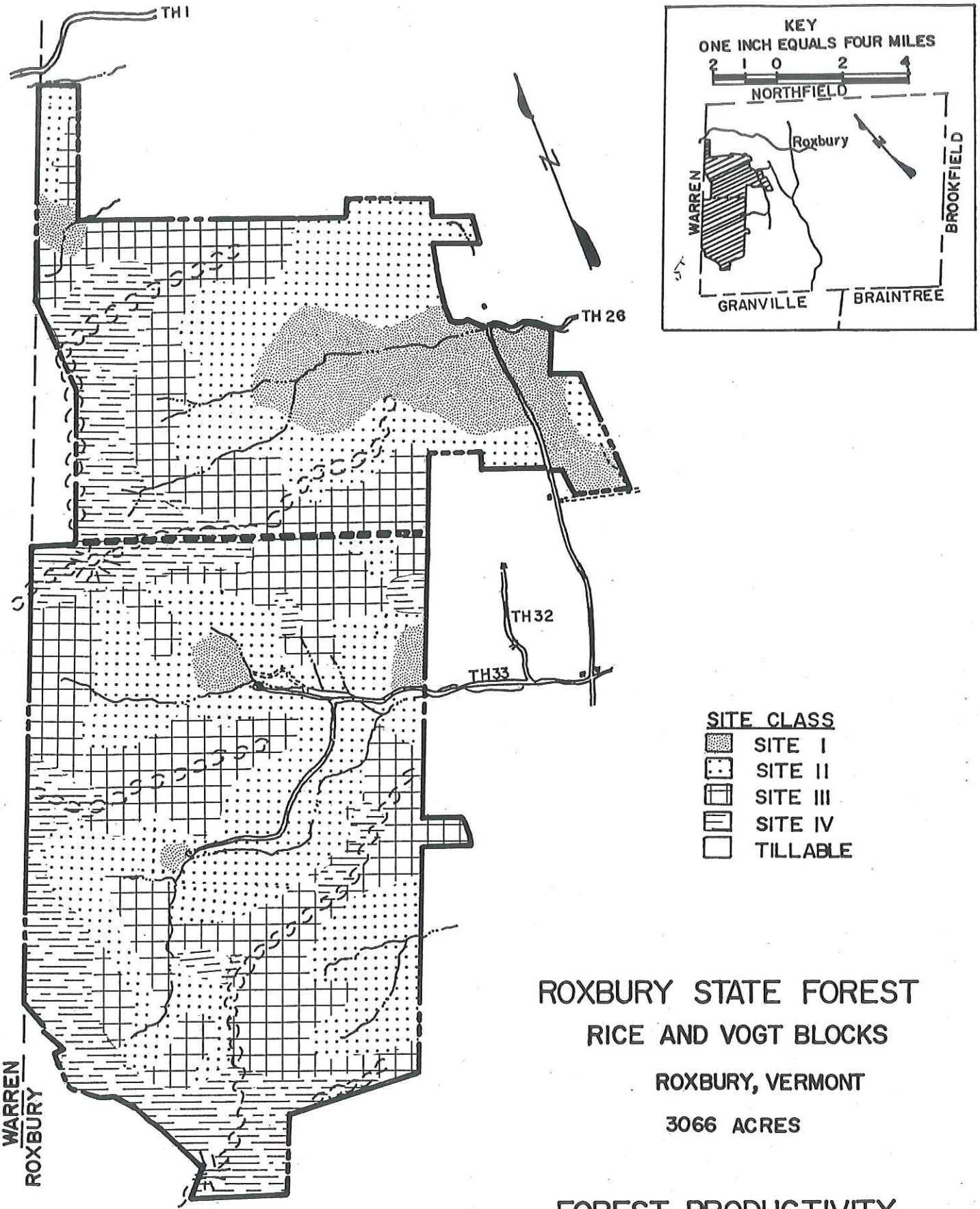


ROXBURY STATE FOREST

RICE AND VOGT BLOCKS

ROXBURY, VERMONT

3066 ACRES

FOREST PRODUCTIVITY CLASSIFICATION

40 0 40 60

SCALE IN CHAINS

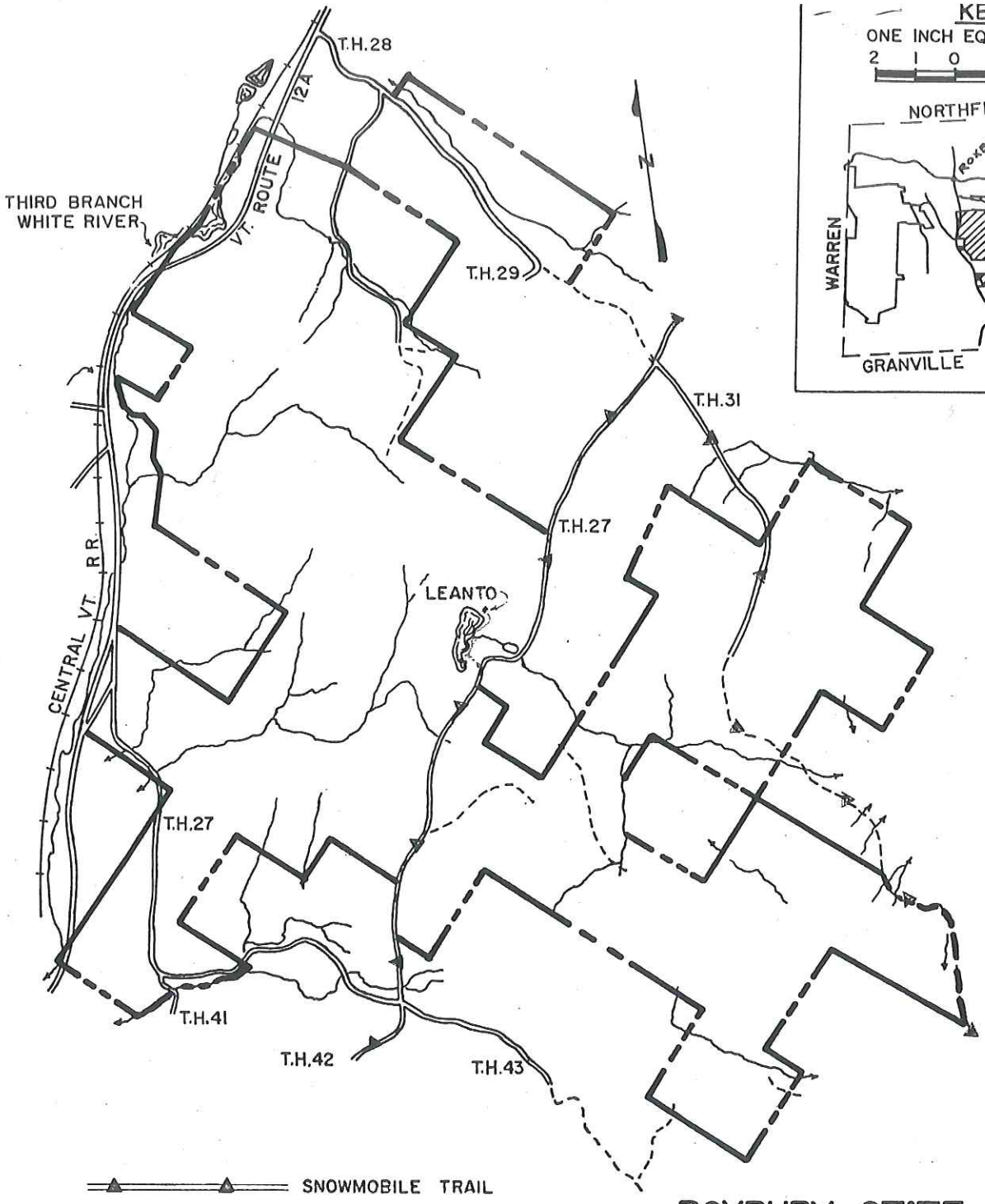
RJT 88MAR

Recreation

Although there are no developed campground or picnic facilities, Roxbury State Forest does offer a wide range of dispersed recreational activities. Historically, the "Beaver Pond" on Cram Hill Block, along with the Adirondack-style leanto have served as the focal point for recreationists. Little maintenance has been performed on either the dam or shelter over the past decade and subsequently, the area receives limited use.

Truck and skid roads throughout the forest are utilized year round by hikers, horseback riders, cross-country skiers, snowmobilers and hunters. The forest provides the hunter with a variety of options depending on the time of year. The most often sought after game are white-tailed deer, snowshoe hare and ruffed grouse. The three major brooks found on the forest provide adequate fishing for local enthusiasts.

A VAST snowmobile corridor trail, running from Randolph and Allis State Park to Northfield, follows two class three and four roads throughout the Cram Hill Block. As the town upgrades these roads the snow machinists will be forced to find other alternatives.



ROXBURY STATE FOREST

CRAM HILL BLOCK

ROXBURY, VERMONT

2443 ACRES

RECREATION

20 10 0 20 40 60 80

SCALE: ONE INCH EQUALS 40 CHAINS (2640')

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Wildlife

Roxbury State Forest offers favorable wildlife habitat through a diversity of vegetative types and size classes, a large expanse of forested area and numerous aquatic environments. All are suitable for a variety of game and non-game species.

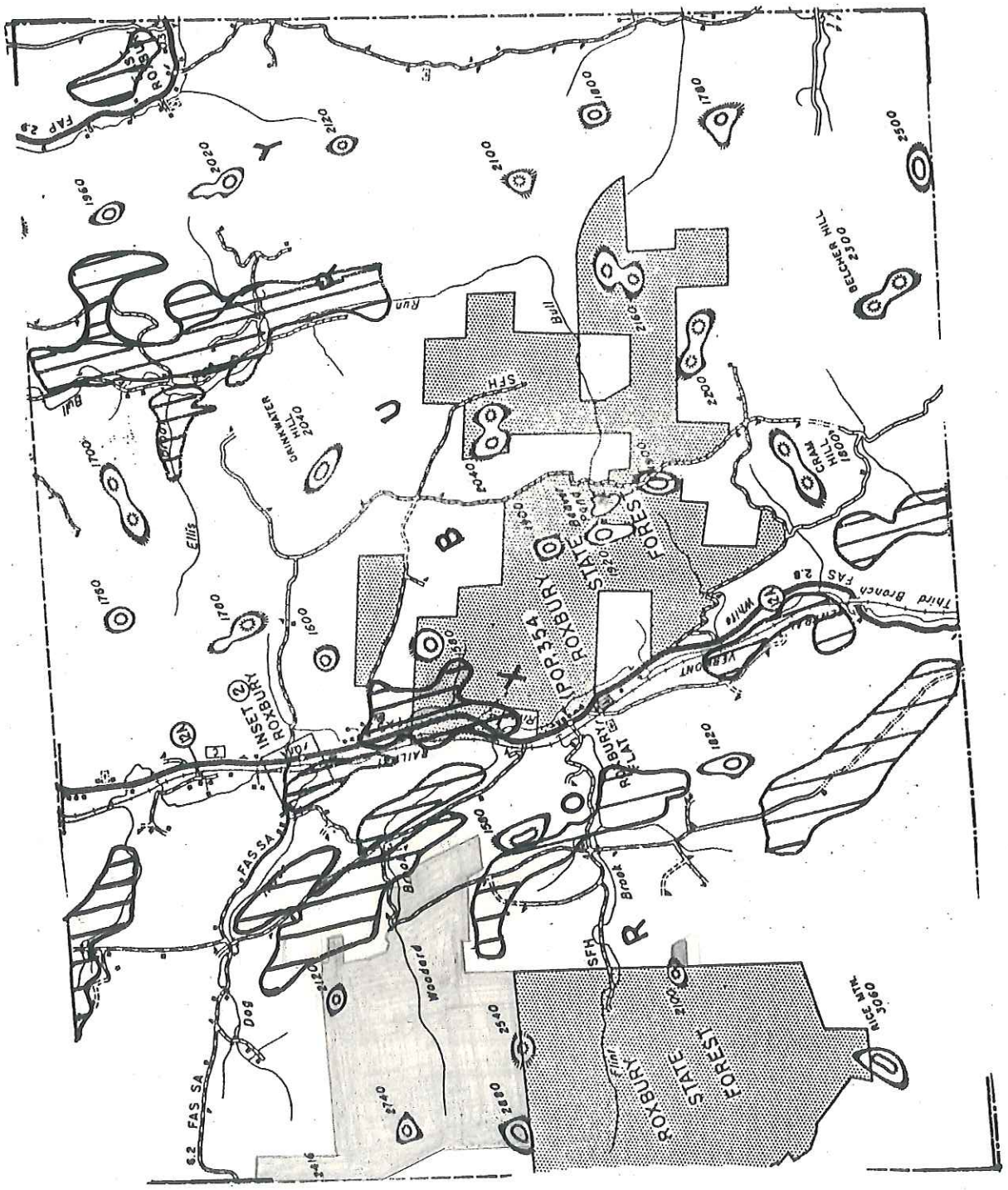
Portions of two deer wintering areas have been mapped on the forest by the Department of Fish and Wildlife. On the Cram Hill Block, a wintering area is located in a mixed stand of hemlock/yellow birch. Wildlife habitat improvement in the form of patch clearcutting in an adjacent hardwood stand has produced accessible browse for deer. The second area is located on the Vogt Block and is in a mixed red spruce-hardwood stand. In addition, there are numerous softwood stands scattered throughout the forest, situated primarily along the ridgelines, which provide softwood cover and protection from winter's snow and wind.

The "Beaver Pond" is a 4 acre dam impoundment constructed by the C.C.C. An on-site inspection by the Department of Fish and Wildlife in 1970 found the fishery to be comprised of a stunted bullhead population. A winter dissolved oxygen deficiency and summer warm water temperatures prevent year round trout survival. There are no indications that these conditions have improved over time.

Three wood duck boxes were erected on the Beaver Pond and the pond between Route 12A and the railroad track on the Cram Hill Block. These boxes are checked yearly for nesting success and maintained each winter. Since 1986 a total of 18 chicks have been

hatched. In February of 1988 an additional 3 boxes were installed.

Additional habitat includes snowshoe hare habitat around the Beaver Pond and woodland brooks with pools sufficient to support a small brown trout population. Good access into the three blocks by the development of a fuelwood road system and a diversity of habitats all contribute to the moderate use of the forest by local and out-of-state hunters.



●=RARE PLANT, ANIMAL, COMMUNITY — THE NATURE CONSERVANCY

▨=WINTER DEER RANGE — VT. DEPT. FISH & WILDLIFE

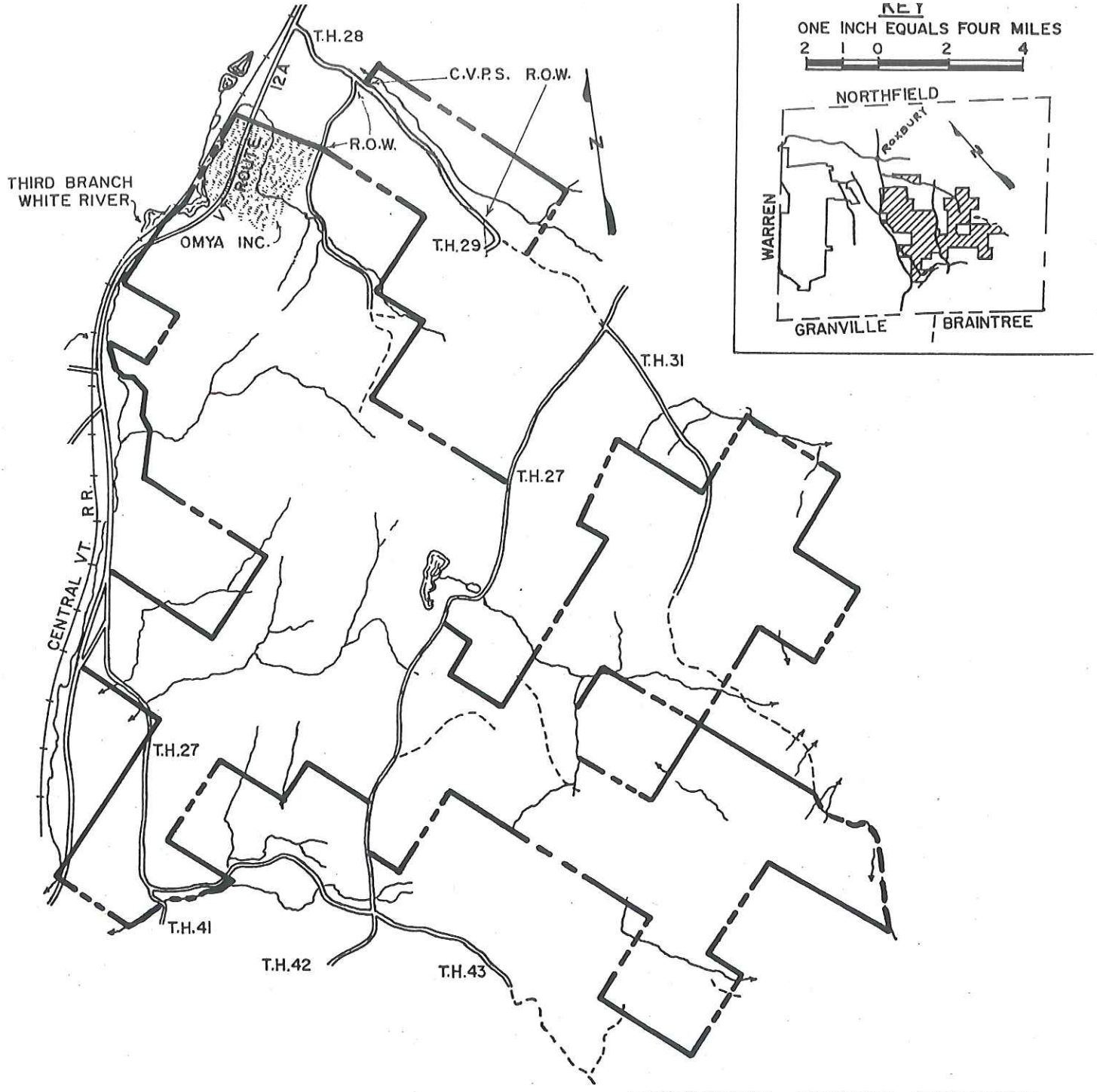
▩=NATURAL / FRAGILE AREA — VT. DEPT. FOREST & PARKS

Special Constraints

In 1978, the state acquired 1,100 acres (Vogt Block) from Robert Vogt through a gift purchase involving Land and Water Conservation Funds (LWCF). Encumbrances associated with this federal funding allow management which enhances recreational opportunities.

Two rights-of-way have been acquired during the last few years. In 1980, the State purchased a 20 foot wide right-of-way onto the Cram Hill Block off town highway #28, through land belonging to Arthur Thresher. Mr. Thresher reserved the right to use the use the road and the Department is responsible for maintaining it in a condition suitable for forestry purposes. Also in 1980, Theodore Church and Dorothy Hirschland sold the State a right-of-way from the Warren Mountain Road onto the Vogt Block (refer to Existing Conditions maps on pages 11 and 12.

New England Telephone and Telegraph Company has a right-of-way across state land purchased in 1932 from the Vermont Land and Conservation Company. Finally, OMYA, Inc. of Proctor, Vermont retained mineral rights to the north half of the Dales Purchase along Route 12A.



MINERAL RIGHTS

ROXBURY STATE FOREST

CRAM HILL BLOCK

ROXBURY, VERMONT

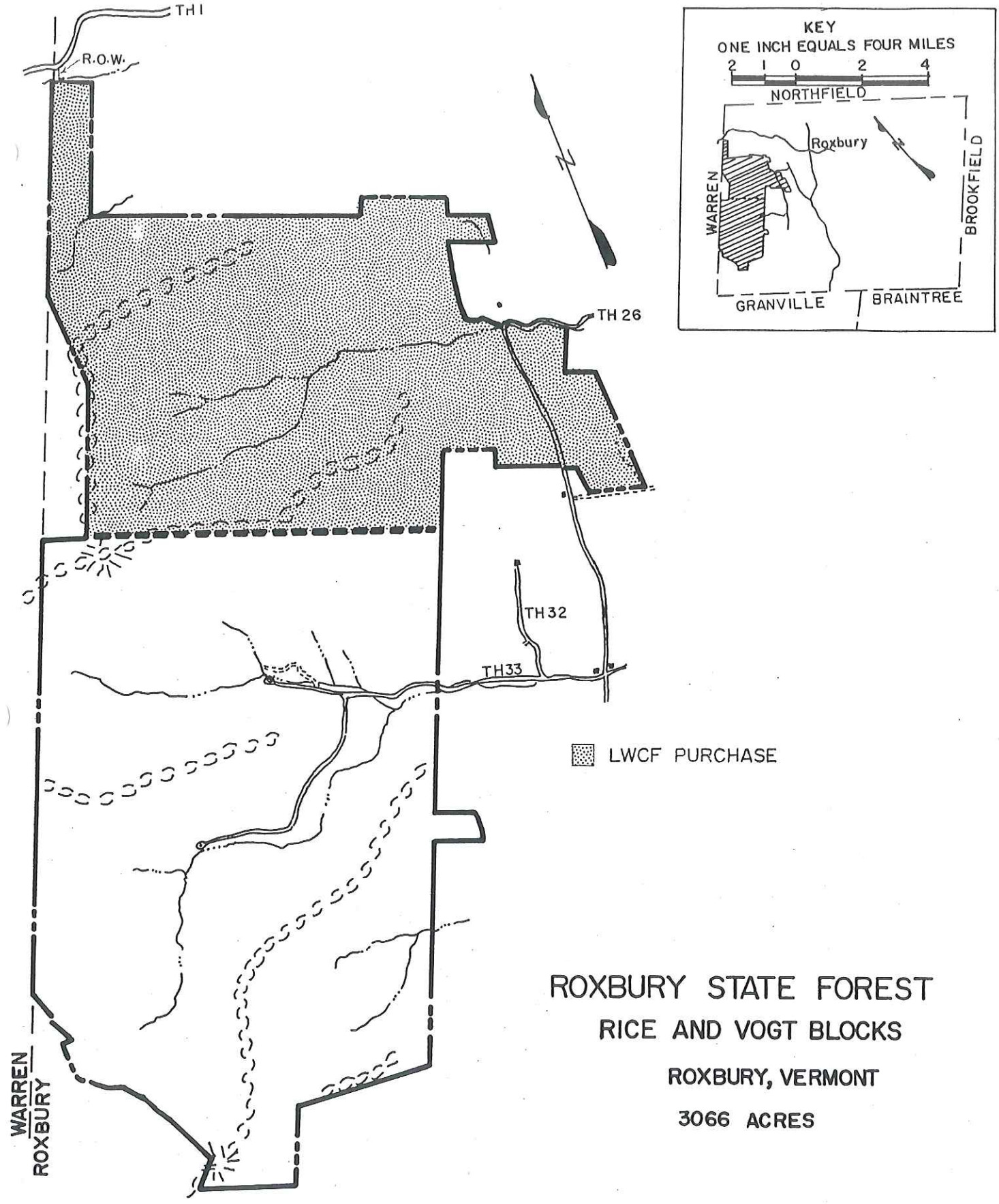
2443 ACRES

SPECIAL CONSTRAINTS

20 10 0 20 40 60 80

SCALE: ONE INCH EQUALS 40 CHAINS (2640')

RN 3/88



ROXBURY STATE FOREST

RICE AND VOGT BLOCKS

ROXBURY, VERMONT

3066 ACRES

SPECIAL CONSTRAINTS

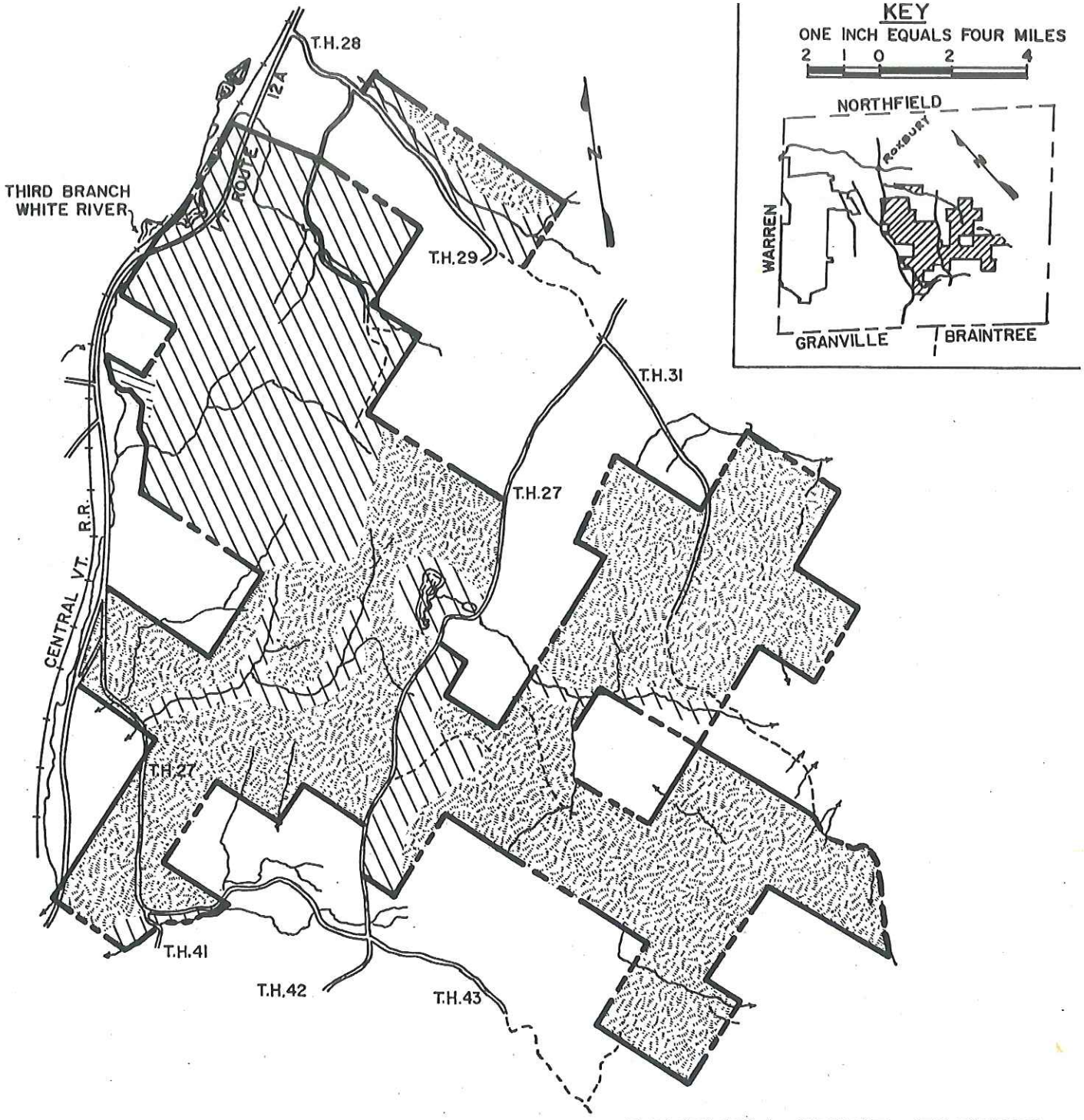
40 0 40 60

SCALE IN CHAINS

88MAR

EMPHASIS ZONES

While classification or categories of use may take place over an entire block, there are areas where specific uses predominate and certain management activities will beemphasized. The following map delineates these areas as emphasis zones to better illustrate and guide management implementation.



ROXBURY STATE FOREST

CRAM HILL BLOCK

ROXBURY, VERMONT

2443 ACRES

EMPHASIS ZONES

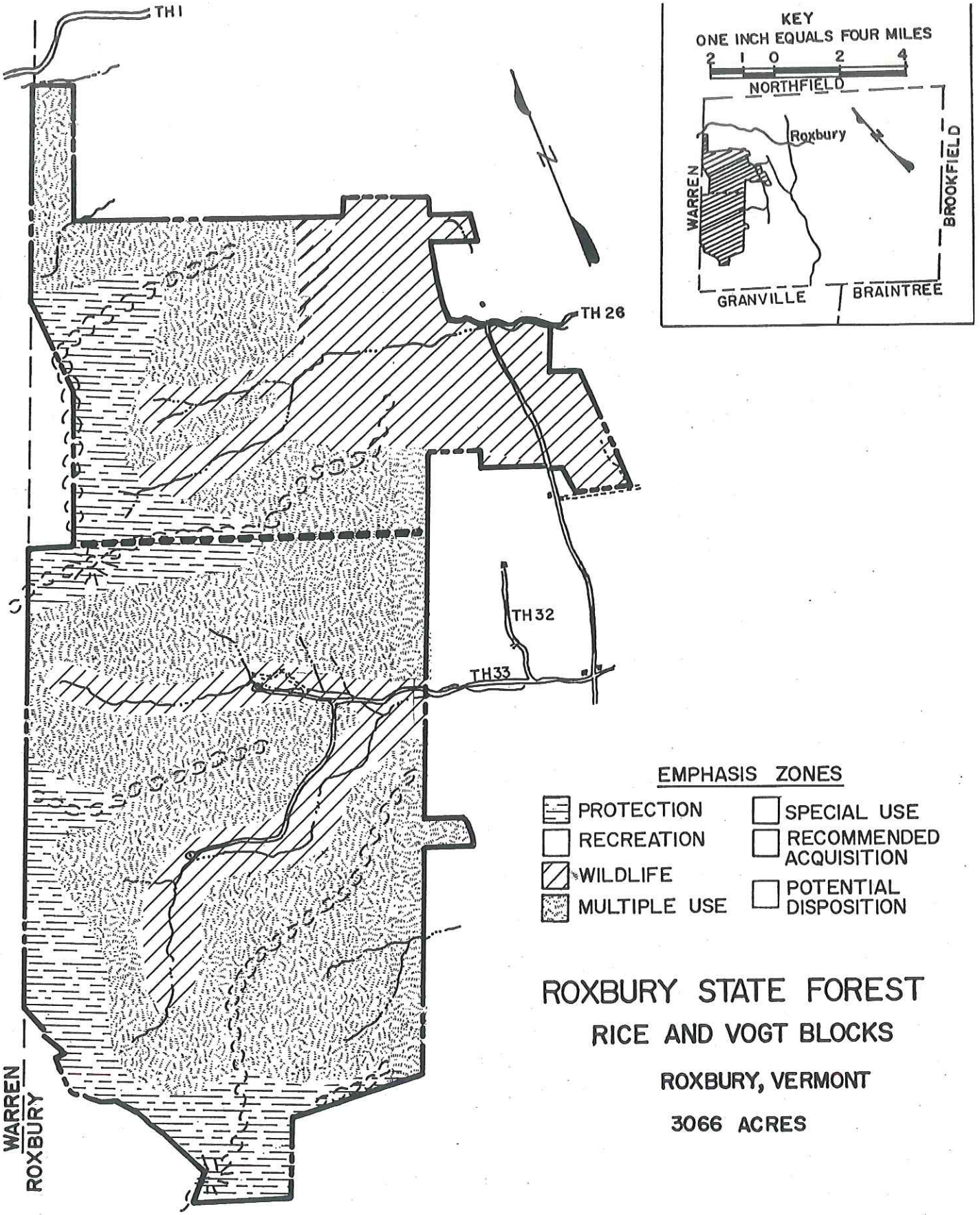
- PROTECTION
- RECREATION
- WILDLIFE
- MULTIPLE USE
- SPECIAL USE
- RECOMMENDED ACQUISITION
- POTENTIAL DISPOSITION

CLASSIFICATION EMPHASIS

20 10 0 20 40 60 80

SCALE: ONE INCH EQUALS 40 CHAINS (2640')

RN 3/88



ROXBURY STATE FOREST

RICE AND VOGT BLOCKS

ROXBURY, VERMONT

3066 ACRES

CLASSIFICATION EMPHASIS

40 0 40 60

SCALE IN CHAINS

RJT 88MAR

LONG RANGE MANAGEMENT GOALS & OBJECTIVES

This section describes the overall management goals and specific objectives for each of the various emphasis zone classifications.

Recreation

Providing a variety of dispersed recreational opportunities throughout the entire forest is a significant part of the management strategy. Enhancement of the recreational opportunities will be pursued by taking the following actions:

1) Maintain the Adirondack leanto on the Cram Hill Block and include this site on the State Park's primitive campground area list.
2) Maintain exisiting forest road systems for multiple use recreational opportunities. Provide connecting trails between existing truck roads to make loop trails for hiking, cross-country skiing and horseback riding.
3) Cooperate with The Vermont Association of Snow Travelers in relocating, upgrading, and maintaining the snowmobile corridor trails. These trails are also utilized by hikers, cross-country skiiers and horseback riders.
4) Improve wildlife habitat to increase the opportunities for observing both game and non-game species within the forest. Details are found in the wildlife section (pg 37).
5) Erect informational boards at existing access points. Provide handout maps for distribution at the Roxbury Town Clerk's office.

Protection

The Protection of sites with fragile ecosystems due to soils, sites or unusual plant or animal communities is an important goal. Preservation of these areas for their contribution to the overall uniqueness of the forest shall be ensured by taking the following measures:

1) No logging over 2500 feet in elevation will be permitted due to the shallowness of soils, potential for erosion, and scenic preservation.
2) The "Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont" will be strictly adhered to, preventing discharges from entering streams, rivers or ponds.
3) Maintain a 200 foot buffer strip around the "Beaver Pond" on Cram Hill Block. Although they are not rare or endangered, the pond supports a mat of labrador tea and pitcher plants that offer a unique experience within the forest.
4) Limit disturbance to all historical/cultural features found on the forest.
5) Monitor any entomological or pathological problems that could adversely affect the vegetative cover.
6) Conduct an annual review of the District Fire Plan to ensure coverage of both presuppression and suppression treatments and procedures.

Wildlife

Management of the forest resource to maintain and enhance the habitat of game and non-game species on the Forest is a major goal. Improvement of critical habitats, especially deer wintering areas will be emphasized by following a system of forest management called the "featured species concept." A habitat management unit (HMU) will be established for a selected wildlife species. The goal on the HMU is to provide all the habitat requirements necessary to meet the featured species needs throughout its annual life cycle on an area approximately equal to that species particular home range.

The featured species concept does not mean "single species management," but provides habitat for non-target species on a less systematic basic. On the HMU's evenaged silviculture lends itself more easily to attaining the desired habitat requirements while at the same time achieving a sustained yield of timber products. It is also possible for habitat management units of two different featured species to overlap and benefit both.

Wildlife habitat improvement will be ensured by taking the following actions:

1. Establish two white-tailed deer HMU's. Each HMU will encompass approximately 500 acres, one on the Cram Hill Block and the other on the Vogt Block. Winter range is the critical habitat for white-tailed deer. A wintering area is characterized by 70 percent or more softwood crown closure. This provides the site with reduced snow depths, increased daily mean temperatures and

reduces wind speed allowing for better survivability of the deer. Also within or adjacent to the wintering area adequate food supplies must be present. For this reason management will concentrate on improving and expanding the natural softwood stands within each HMU for shelter and provide high quality, accessible browse for winter feed.

The remainder of the acreage in hardwood stands will be intensively managed to provide browse and mast producing trees for feeding seasons other than winter. The major objectives for non-winter range are:

a) Maintain at least 5-10 percent of the HMU's in grassy openings.

b) Manage the forested areas using evenaged silviculture and on a 100 year rotation.

c) Maintain at least 10 percent of the area in regenerating (0-10 year) stands.

d) Maintain at least 30 percent of the area in mast producing age classes (50+ years) and at least 10 percent of each stands basal area in mast producing species.

2. Establish three snowshoe hare HMU's on the Cram Hill Block. Each HMU will encompass approximately 20 acres. Cover is the single most important habitat component. Young, dense softwoods provide the critical element of low, lateral visibility. The HMU is comprised of three general height classes of trees; 0-8 feet, 8-15 feet and 15-45 feet. Along with these stands there should be scattered openings to provide summer food. The stands will be placed on a 60 year rotation to promote the existing red spruce and provide the desired height structures.

3. Increase the amount of permanent, grassy openings throughout the forest, but on a less systematic basis than is provided for in the previously mentioned HMU's. This will be accomplished by seeding and mulching log landings, some skid and truck roads.

4. Maintain at least 10 percent of the basal area in hardwood stands in mast producing species. These species play an important roll in providing fall feed for many game and non-game species of wildlife.

5. Maintain den and snag trees throughout the forest for use by different species of birds and mammals.

a) Den trees - Retain a minimum of one 15"+ tree/acre, with 2 trees/acre left within 300 feet of bodies of water. In addition, one tree/acre showing potential for developing into a den tree will be retained.

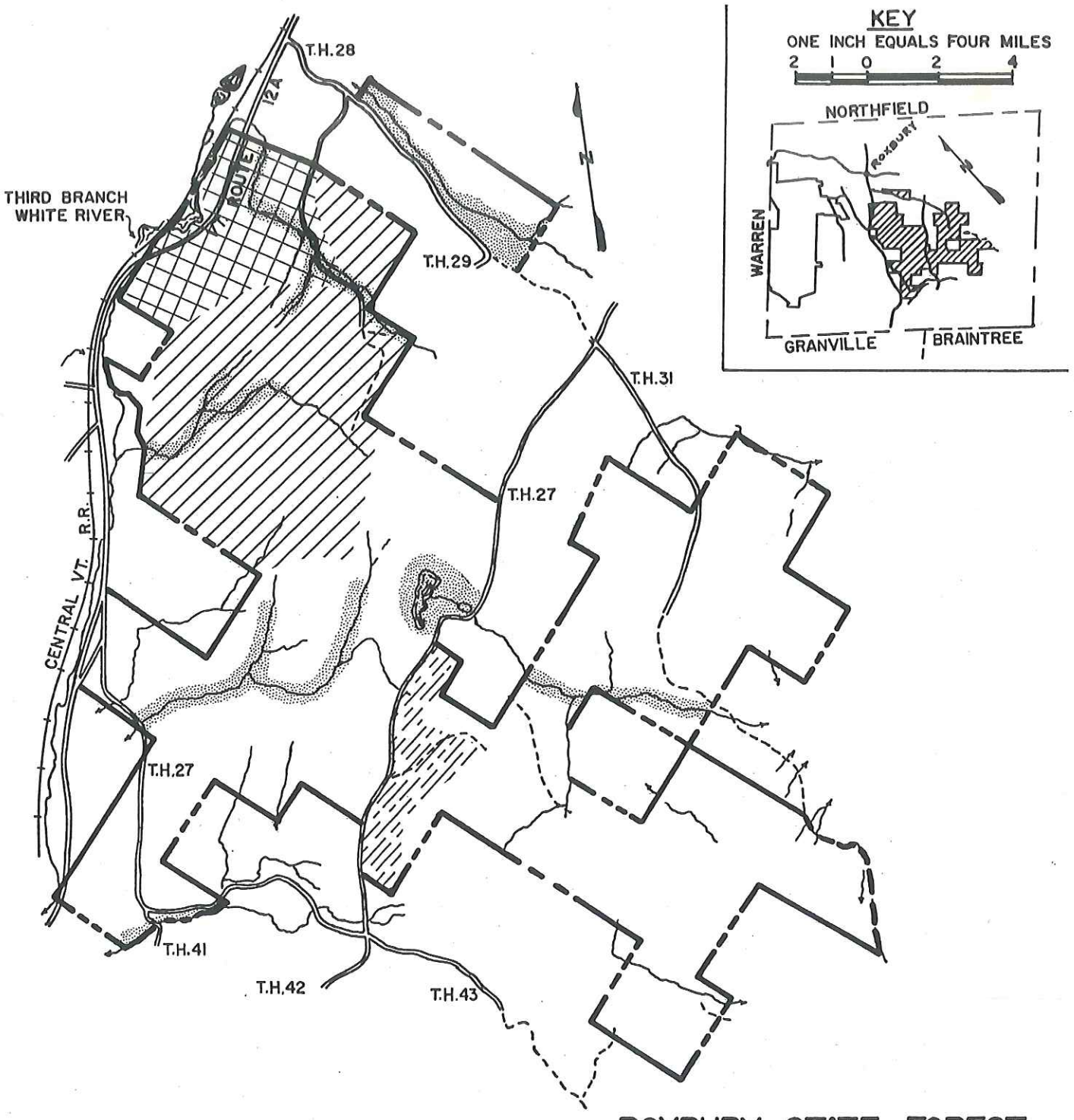
b) Snag trees - Retain a minimum of four 15"+ snags/acre, with 6 snags/acre left within 300 feet of openings and bodies of water.

6. Maintain the existing wood duck nesting boxes on the pond between Route 12A and the railroad tracks and the "Beaver Pond" on the Cram Hill Block. The boxes should be checked each May to determine nesting success and actual maintenance of each structure done during the winter when the ponds are frozen.

7. Maintain riparian zones by limiting harvesting to single tree selection only, within 100 feet of major brooks and streams. This is to maintain continuous tree cover along waterways for use as a travel corridor by a variety of wildlife species. It also helps maintain low water temperatures and an insect food source for aquatic wildlife. Where the Acceptable Management Practices (AMPs)

for water quality call for a wider buffer strip, the AMP's will be strictly adhered to.

The recommendations were written in accordance with the habitat quidelines for white-tailed deer, snowshoe hare and non-game wildlife, published by the Vermont Fish and Wildlife Department.



ROXBURY STATE FOREST

CRAM HILL BLOCK

ROXBURY, VERMONT

2443 ACRES

DEER MANAGEMENT UNIT

DEER WINTERING AREA

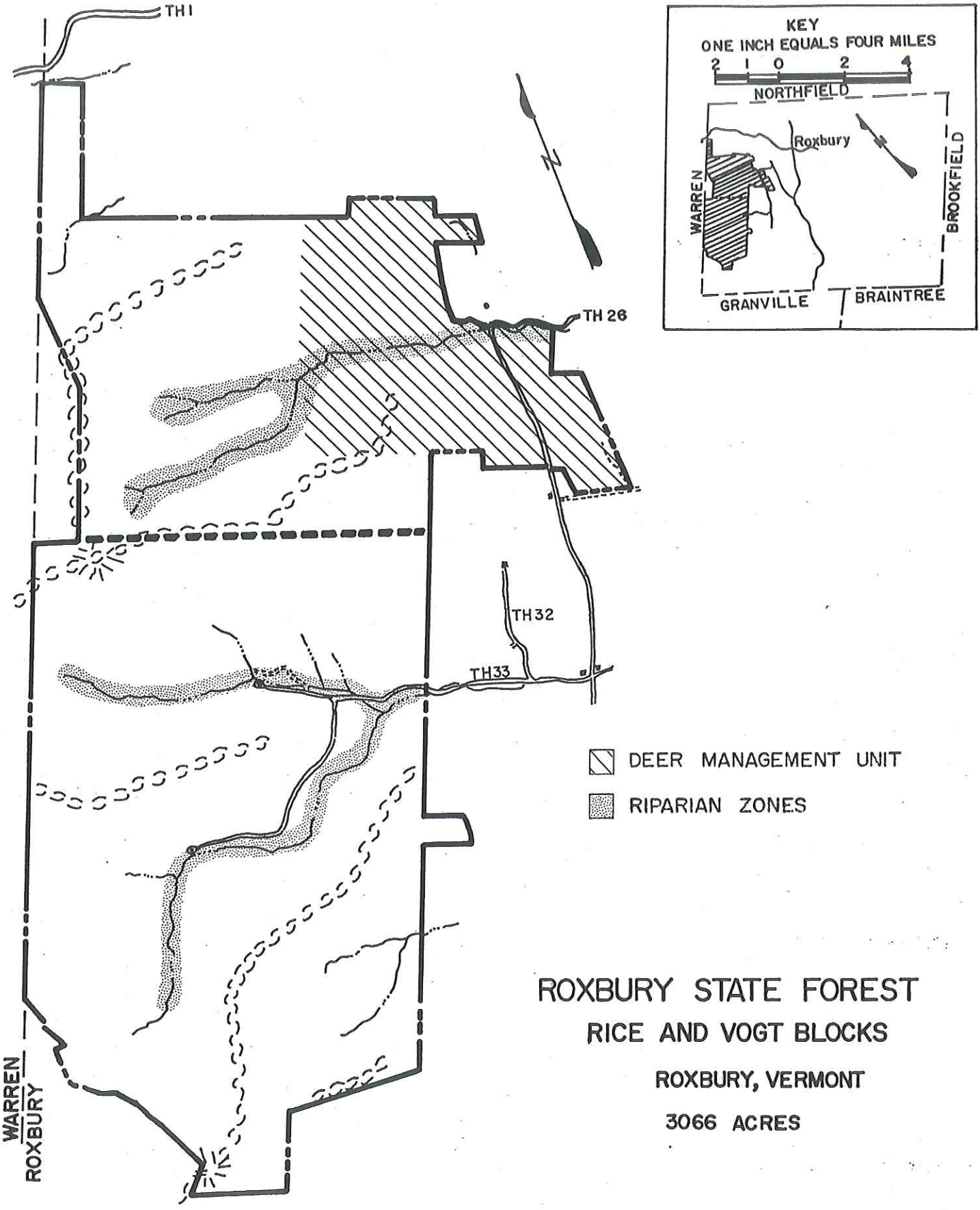
SNOWSHOE HARE MANAGEMENT UNITS

RIPARIAN ZONES

WILDLIFE

20 10 0 20 40 60 80

SCALE: ONE INCH EQUALS 40 CHAINS (2640')



ROXBURY STATE FOREST

RICE AND VOGT BLOCKS

ROXBURY, VERMONT

3066 ACRES

WILDLIFE

40 0 40 60

SCALE IN CHAINS

RJT 88MAR

Multiple Use

Recreation, wildlife and timber production shall be mutually compatible goals and all management activities shall maintain or enhance these opportunities. Management of the commerical forest land to provide a sustained yield of high quality timber products within sound silvicultural practices will be pursued. Timber management activities will also be designed so as not to negatively impact aesthetics, historic sites and water quality. Management activities will strive to improve or maintain the above mentioned uses by taking the following actions:

1) Unevenaged management will be the primary silvicultural system on the forest, thus maintaining a continuous forest cover especially in areas of visual sensitivity.
2) Evenage management will be featured within the wildlife habitat management units to provide the necessary species requirements.
3) Cutting activities will be structured to improve tree health, timber quality, and tree species composition. Special emphasis will be placed upon increasing the percentage of softwood cover. Improving species diversity is especially important in reducing the impact of insect pest outbreaks.

Implementation

This section is divided into two parts. The first establishes specific activities to take place within the next ten years. The second part records the accomplishments of the activities specified in part one.

Activities for the Next Ten Years

1990-1999

Activities for the Next Ten Years

1990-1999

Recreation:

FY 1990

Project #1: Make necessary repairs to the Adirondack leanto on the Cram hill Block. Repairs will consist of replacing the roof, staining the walls, and replacing rotting logs in walls..

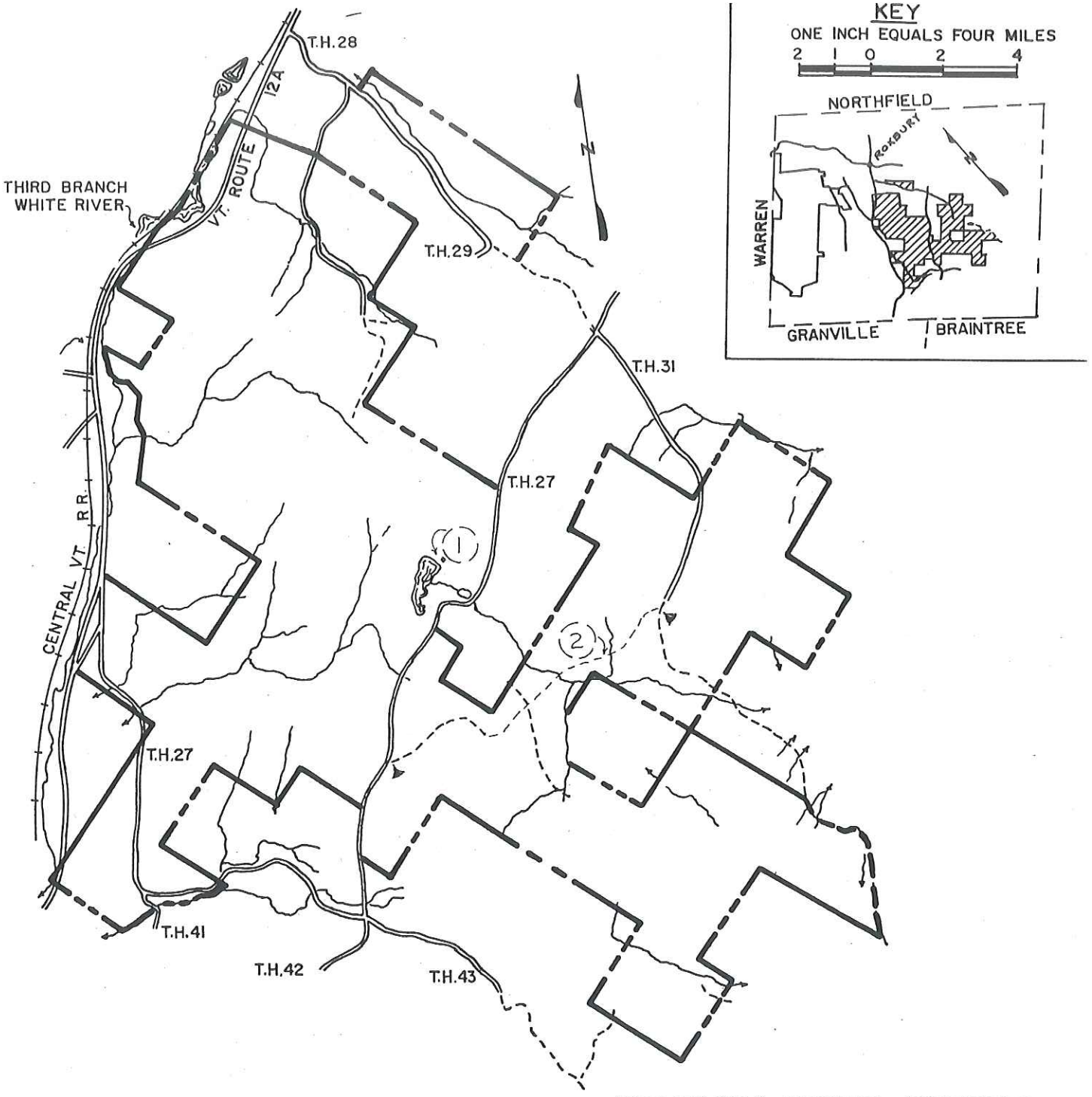
Project #2: Upgrade existing skid roads to snowmobile corridor trail standards. Install water crossing and erosion control structures.

Project #3: Consult Water Resources' engineers to determine the structural soundness of the CCC dam on the Cram Hill Block. Prepare a written evaluation with recommendations if necessary.

FY 1991

Project #4: Construct a trail connecting the Kromer Road and the Woodard Brook Road on the Vogt Block.

Project #5: Construct two informational boards; one to be installed at the parking lot on the Vogt Block and the other at the parking lot on the Rice Block.



ROXBURY STATE FOREST

CRAM HILL BLOCK

ROXBURY, VERMONT

2443 ACRES

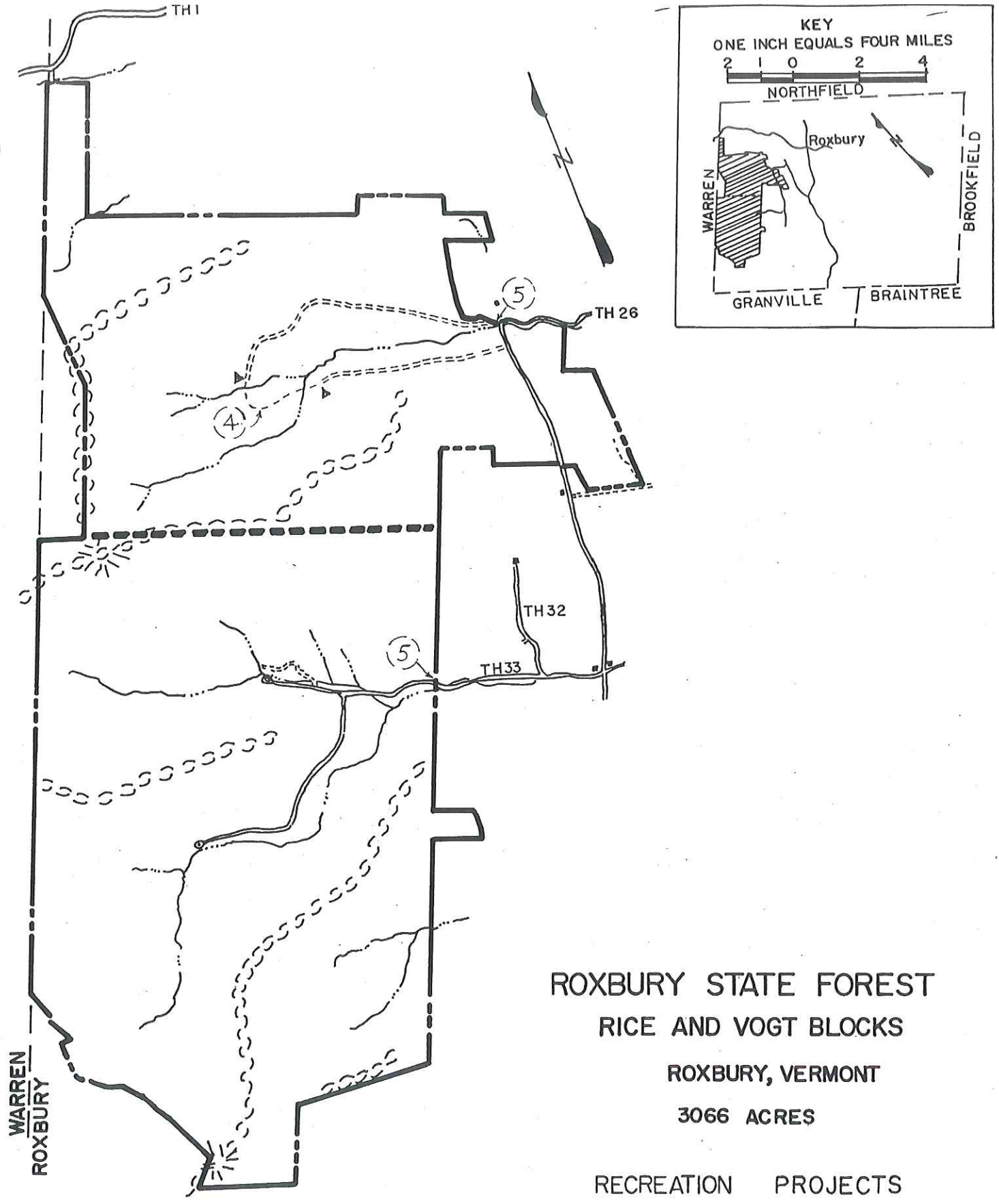
RECREATION PROJECTS

1990— 1999

20 10 0 20 40 60 80

SCALE: ONE INCH EQUALS 40 CHAINS (2640')

RN 3/88



ROXBURY STATE FOREST

RICE AND VOGT BLOCKS

ROXBURY, VERMONT

3066 ACRES

RECREATION PROJECTS

1990 —— 1999

40 0 40 60

SCALE IN CHAINS

88MAR

Activities for the Next Ten Years

1990-1999

Protection:

FY 1990 Begin process to obtain mineral rights on the northern half of Cram Hill Block, Compartment 14 from OMYA, Inc. This will allow the State to control all aspects of this property.

Activities for the Next Ten Years

1990-1999

Timber-Cutting Schedule

The data base for the timber resource was developed by using a complete prism plot inventory on Roxbury State Forest compiled from 1986 through 1988. This cutting schedule reflects work to be done in both the multiple use and wildlife areas on the Classification Emphasis Maps (pages 32 and 33). The goal is to develop a regulation system which maintains a continuous forest canopy while working toward an evenflow, sustained yield of timber products, a balanced distribution of age classes, improved species composition and improved tree health and quality. Where wildlife habitat improvement is the major objective, cutting will be done to enhance the specific needs of the featured species.

The following cutting schedule, sale descriptions and projected volumes are based upon the best available data. A pre-sale inventory and sale prescription will be prepared for each individual project at the time they appear in the annual work project plan. This information will more thoroughly discuss silvicultural treatments and sale volumes.

Cram Hill Block

Not Done

Cut #1: (Compartment 14, Stand #1 & 2) Thirty-five acres within stands #1 and 2 will be thinned through fuelwood sales to remove cull and unacceptable growing stock. Some group selections may take place to stimulate hardwood regeneration for winter deer browse.

Cut #2: (Compartment 8, Stand #2) Intermediate thinning on forty acres of northern hardwood poletimber. This will be accomplished through off road fuelwood sales. Emphasis will be on releasing crop trees, and in areas with a high percentage of cull trees doing group selections to stimulate hardwood regeneration.

Cut #3: (Compartment 10, Stand #1 and Compartment 11, Stand #1) This 170 acre area received a first stage shelterwood cut in 1988. The area should be re-examined to determine if hardwood regeneration is established and ready for an overstory removal. This work will release browse within the white-tailed deer non-winter range.

Cut #4: (Compartment 3, Stand #1 & 2) Thirty-six acres in stand #1 were treated in 1984 by a first stage shelterwood or patch clearcut where existing spruce regeneration was established. A regeneration survey will be accomplished to determine if regeneration in the remaining areas is established. If established the overstory will be removed. At the same time a thirty acre portion of stand #2 will receive a selective cut to remove cull and unacceptable growing stock and stimulate hardwood regeneration.

Cut #5: (Compartments 1, 2 & 3, Stands #1 & 2) A selection cut over 180 acres within three compartments with relatively poor access will be performed. Cutting will be accomplished in all size classes and group selection will be used to stimulate

northern hardwood regeneration. This area was first treated in 1975 and is placed on a 20-year cutting cycle.

Cut #6: (Compartment 7, Stands #1, 2 & 3) A regeneration survey in stand #3 of sparsely stocked red pine will be performed. If desirable regeneration is established this seven acres of red pine will be removed. In addition about 50 acres of stands 1 and 2 will receive an intermediate thinning to salvage declining red spruce and thin a portion of the northern hardwood stand.

In Progress "Troubled Gate Sale"

Cut #7: (Compartments 11 & 12, Stand #1) A selection cut over 85 acres of northern hardwoods will be done. Group selection will concentrate on stimulating hardwood browse for white-tailed deer.

Not Done

Rice Block

Cut #1: (Compartment 4, Stand #1) Intermediate thinning on forty-five acres of a northern hardwood pole and small sawtimber stand. Thinning will be done to reduce basal area to "B" level stocking and will concentrate on removing the cull and unacceptable growing stock. Group selections may be done to stimulate hardwood regeneration.

Done Plus Ice Salvage

Cut #2: (Compartment 5, Stand #1) 80 acres within stand #1 will be cut to promote an unevenaged stand by concentrating on removing the high cull growing stock component. This will be an integrated sale, however, the majority of the volumes will be fuelwood. Small group selection cuts will be made to stimulate hardwood browse.

"Cat Track Sale"

Cut #3: (Compartment 8, Stand #1) Second stage of a 2-stage shelterwood which was cut in 1980. Examine the area to determine if hardwood regeneration is established and ready for an overstory removal.

Vogt Block

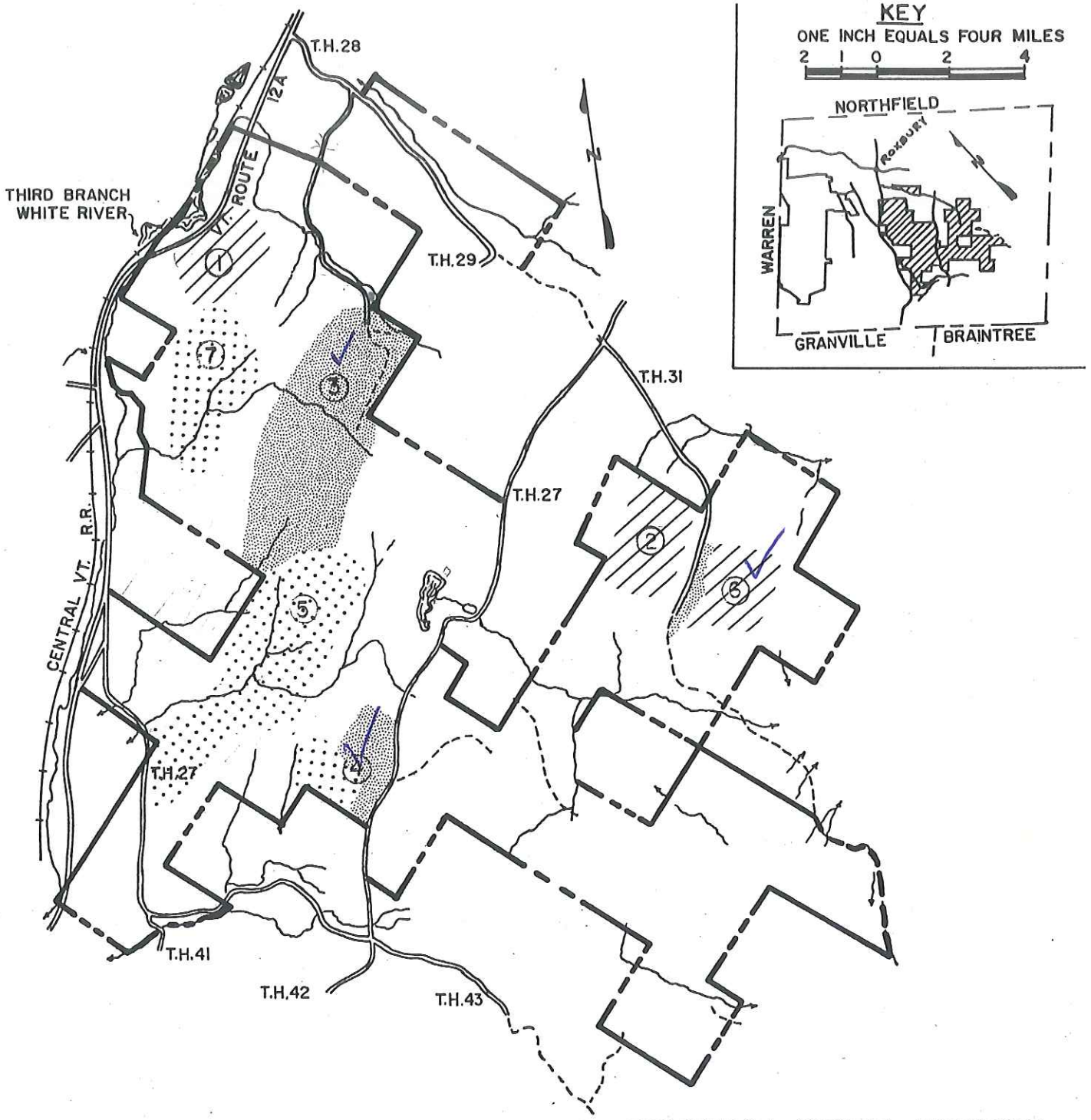
Cut #1: (Compartment 3, Stands #2 & 3) An intermediate thinning in sixty acres of northern hardwood pole and small sawtimber through fuelwood sales. Treatment will concentrate on removing cull and unacceptable growing stock. Group selection will release patches of established regeneration.

Cut #2: (Compartment 2, Stands #1 & 2) A selection cut on sixty acres of northern hardwood pole and small sawtimber. Group selection will release established hardwood regeneration or stimulate reproduction.

Cut #3: (Compartments 1 & 3, Stands #1 & 5) A pre-commercial thinning in a 12 acre white pine poletimber stand. Reduce basal area to "B level" stocking.

We will also provide some 5-cord fuelwood lots scattered throughout the forest. This may result in an additional 30 to 40 cords being cut each year.

To improve public relations we will also keep town officials and adjacent landowners informed of management activities taking place on the Forest. This is in direct response to concerns raised during the public involvement process.



INTERMEDIATE CUT
REGENERATION CUT
SELECTION CUT

Numbers Correspond to Cutting Schedule.

ROXBURY STATE FOREST

CRAM HILL BLOCK

ROXBURY, VERMONT

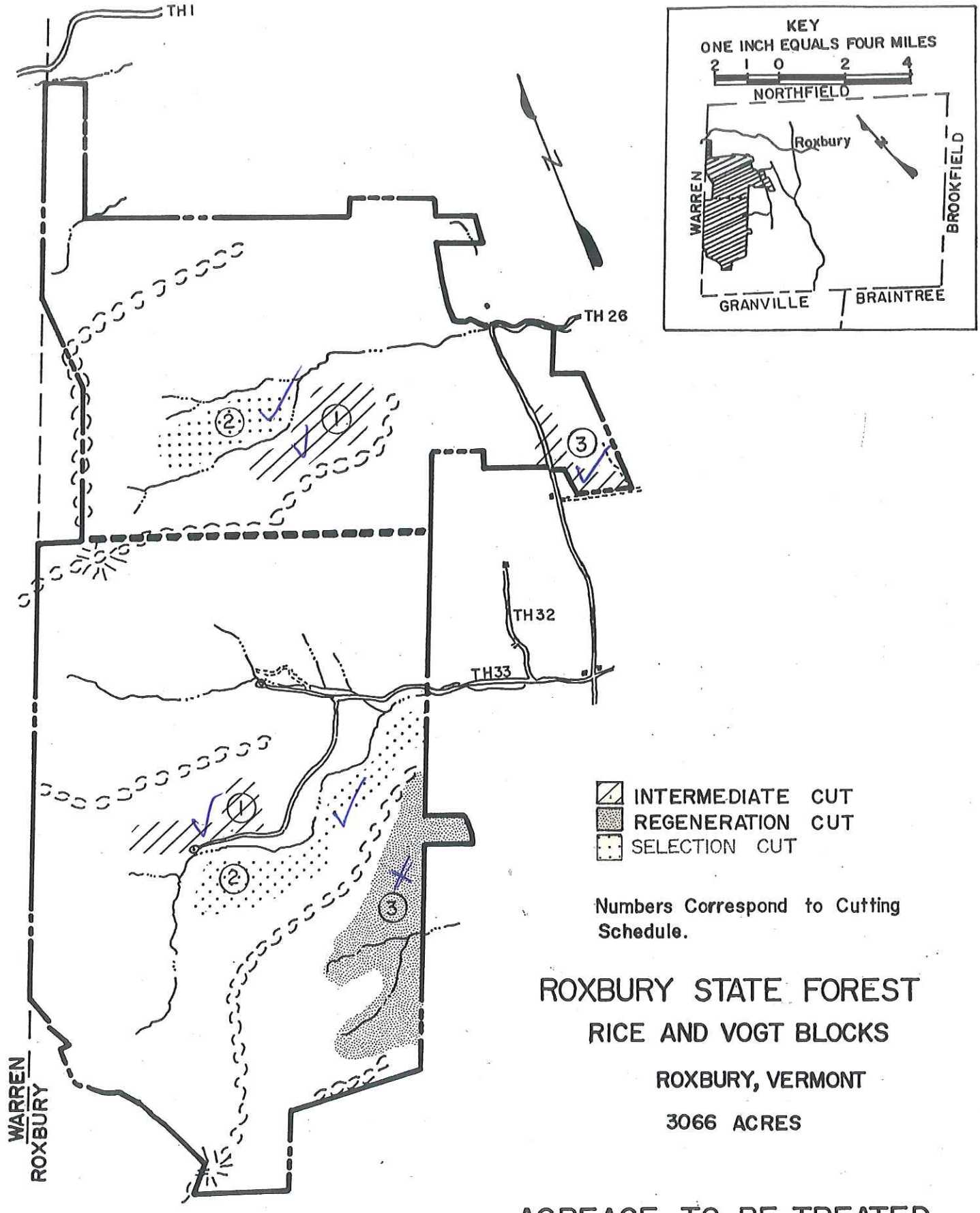
2443 ACRES

ACREAGE TO BE TREATED IN TEN YEARS

20 10 0 20 40 60 80

SCALE: ONE INCH EQUALS 40 CHAINS (2640')

RN 3/88


KEY
ONE INCH EQUALS FOUR MILES
2 1 0 2 4
NORTHFIELD
Roxbury
WARREN
BROOKFIELD
GRANVILLE
BRAINTREE
TH 1
TH 26
TH 32
TH 33
WARREN
ROXBURY
INTERMEDIATE CUT
REGENERATION CUT
SELECTION CUT
Numbers Correspond to Cutting Schedule.
ROXBURY STATE FOREST
RICE AND VOGT BLOCKS
ROXBURY, VERMONT
3066 ACRES
ACREAGE TO BE TREATED IN TEN YEARS
40 0 40 60
SCALE IN CHAINS

RJT 88MAR

From:	"" <eleary@FPR.ANR.STATE.VT.US>
To:	DIANA FREDERICK <diana.frederick@anrmail.anr.state.vt.us>
Date sent:	Wed, 8 Mar 2000 09:23:33 -0500
Subject:	Roxbury State Forest - LRMP Amendment Request
Copies to:	Brian Stone <bstone@fpr.anr.state.vt.us>, lhenzel@fpr.anr.state.vt.us
Priority:	normal

Diana:

I am responding to your memo dated March 2, 2000 in which you requested an amendment to the LRMP for Roxbury State Forest. This amendment would provide for the thinning of a 3-acre Norway spruce plantation. Please consider this email as approval of this amendment request.

"Happy Trails"

Ed Leary
State Lands Director
Vermont Agency of Natural Resources
Department of Forests, Parks & Recreation
103 South Main Street
Waterbury, VT 05671-0601
Tel: (802) 241-3683
Fax: (802) 244-1481

State of Vermont

AGENCY OF NATURAL RESOURCES

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation

Department of Forests, Parks and Recreation
Att: Diana Frederick, State Lands Forester
Barre District Office
324 North Main Street
Barre, Vermont 05641-4109
Forests & Parks : (802) 476-0170
Voice Mail: (802) 476-0174
Fax : (802) 479-4272
Email: diana.frederick@anrmail.anr.state.vt.us

MEMORANDUM

To: Brian Stone, Chief of Forest Management
Ed Leary, State Lands Administrator

From: Diana L. Frederick, Stewardship Specialist

Date: March 2, 2000

Subject: Amendment to Roxbury State Forest LRMP

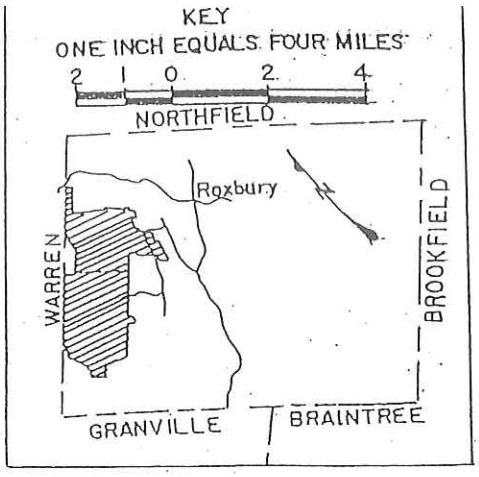
This is to request an amendment change to the Roxbury State Forest Long Range Management Plan dated April 1989 to include an additional silvicultural treatment.

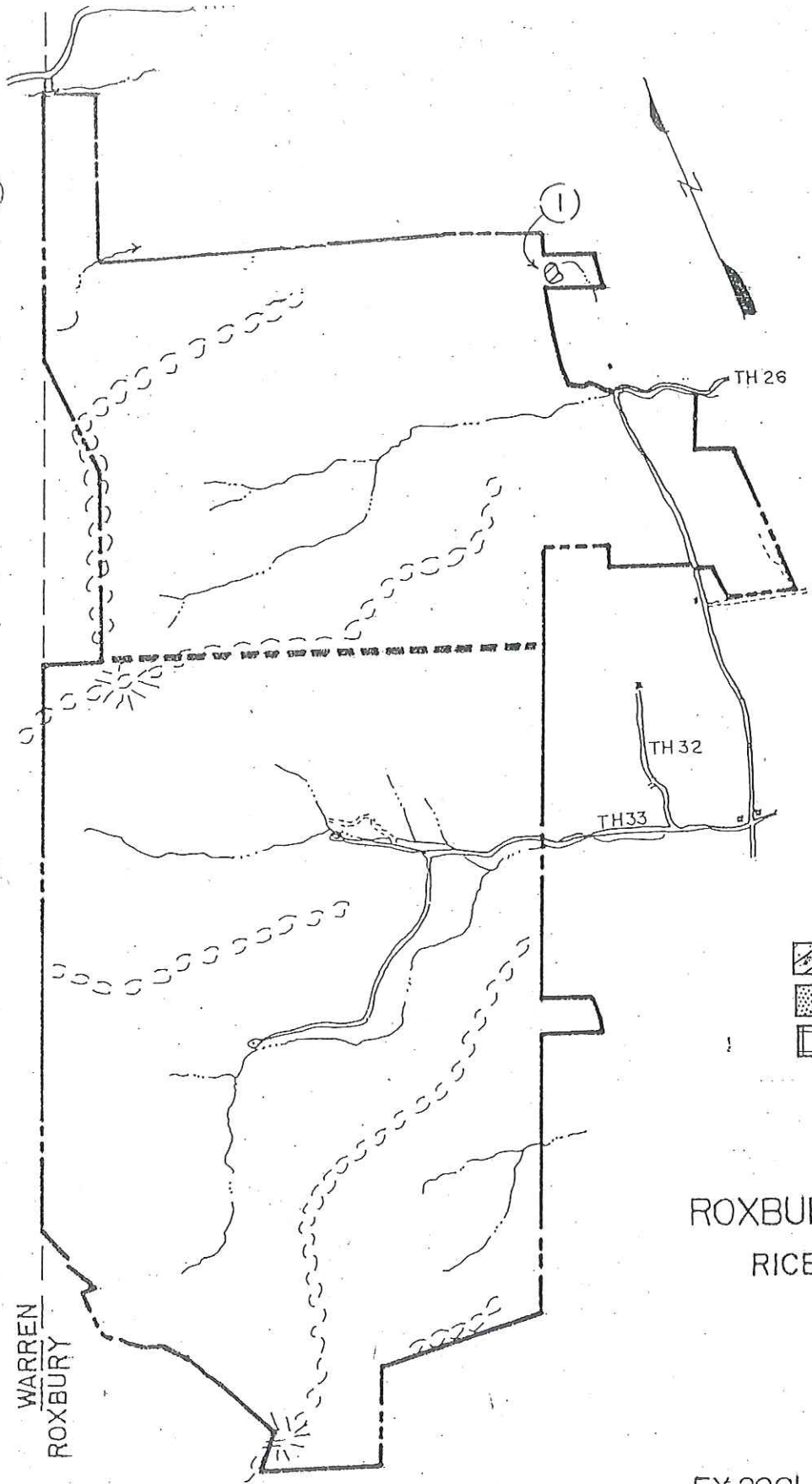
Vogt Block

Cut #4: (Comp. 4, Stand 2a) Thinning in a 3 acre Norway Spruce plantation removing unacceptable growing stock and competing vegetation. Harvest 2.7 MBF and 6 cords.

Sale will be operated FY 2000/2001

This sale will be done in conjunction with an adjacent sale on private land due to its small size. We will negotiate with the logger who will be operating the sale for consulting forester John McClain.





INTERMEDIATE CUT
REGENERATION CUT
SELECTION CUT

ROXBURY STATE FOREST

RICE AND VOGT BLOCKS

ROXBURY, VERMONT

3066 ACRES

FY 2001 WORK PROJECT PLAN

40 0 40 80

SCALE IN CHAINS

IT 88MAR

Cutting Summary

Cram Hill

Cut #	Compt/Stand	Acres	Projected MBF	Projected Cords	FY	Treatment	Emphasis Zone	Wildlife Function
1	14-1&2	35	-	150	1990-99	Thinning	Wildlife	Cover & browse
2	8-2	40	-	200	1990-99	Selection cut	Multiple use	
3	10-1 11-1	70	300	350	1993	Overstory removal	Wildlife	Browse & cover
4	3-1&2	66	110	200	1994	Overstory removal Selection cut	Multiple use	
5	1-1 2-1 3-2	180	250	800	2005 1995	Selection cut	Multiple use	
6	7-1,2,&3	60	100	250	1998	Overstory removal Selection cut	Multiple use	
7	11-1 12-1	85	200	400	1999	Selection cut	Wildlife	Cover & browse
Total Cram Hill		536	960					

1/12/99

Sales for FY 99 not included in last years AWP due to the ice salvage sales and being behind in others

RTC

Rice

Cut #	Compt/Stand	Acres	Projected MBF	Projected Cords	FY	Treatment	Emphasis Zone	Wildlife Function
1	4-1	45	-	200	1996	Thinning	Multiple use	
2	5-1	80	30	300	1998	Selection	Multiple use	
3	8-1	155	200	600	1992	Overstory removal		
Total Rice		280	230	1100				

Vogt

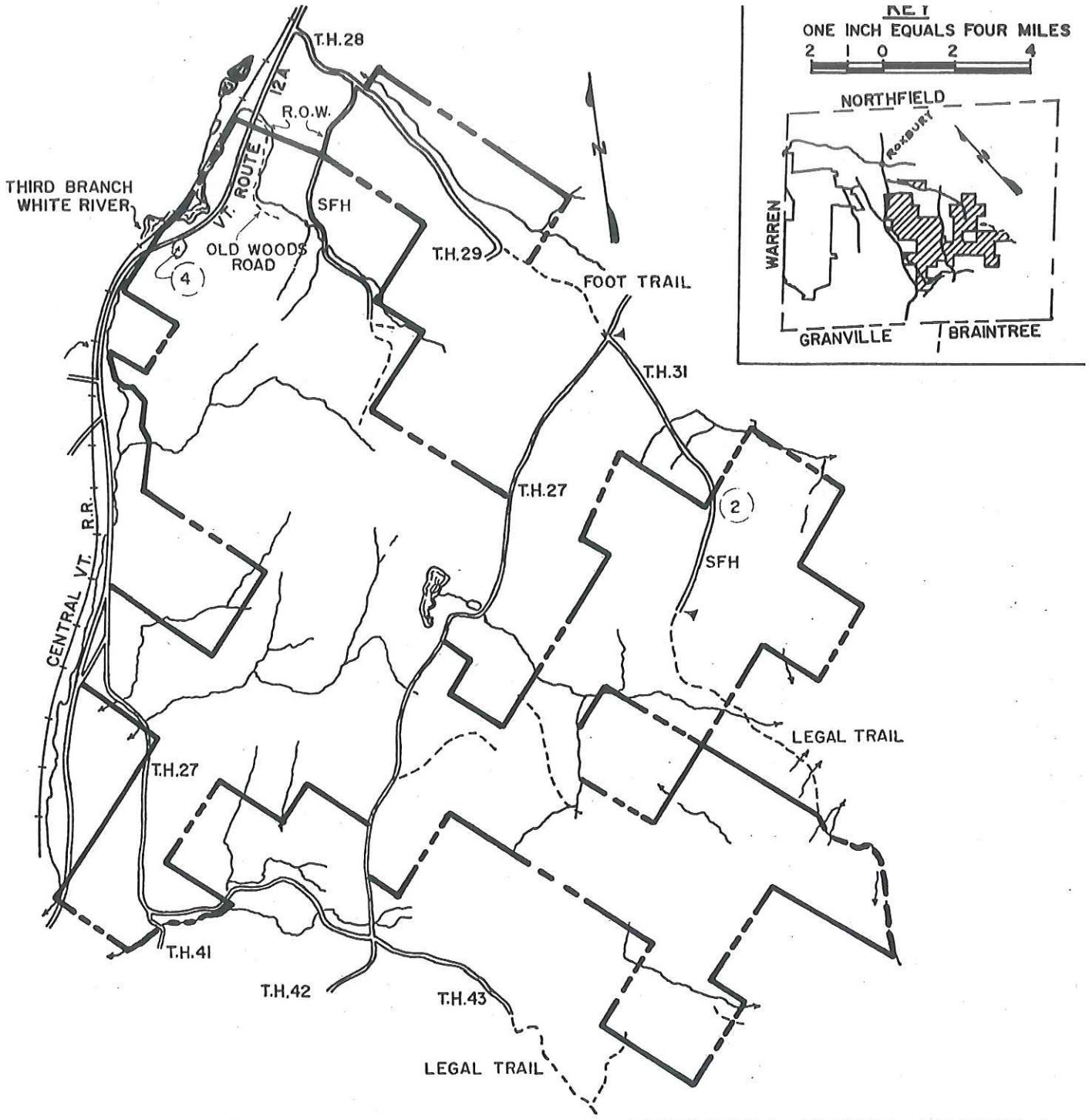
1	3-2&3	60	-	300	1990-99	Thinning	Wildlife	Cover & browse
2	2-1&2	60	80	300	1997	Thinning	Multiple use	
3	1-1	12	Pre-comm		1995	Thinning	Wildlife	Winter cover
Total Vogt		132	80	600				
Grand Total		948	1270	4050				

Project #1 (Vogt Block) Clear a 40 foot strip to extend the Woodard Brook Road in compartment 3. Work in future years will include establishing the road bed, ditching and installation of culverts. This road will be used to facilitate the removal of firewood and access to future timber sales. Estimated distance is .5 mile for approximately $1500.00

Project #2 (Cram Hill Block) Clean the ditches along the CCC road into compartments 7 and 8 using a Drott. This periodic maintenance will cover approximately 1 mile at an estimated cost of $1,000.00.

Project #3 (Rice Block) Clean the ditches along the Main Road and Flint Brook Extension using a Drott. This is periodic maintenance and will cover a distance of 1.5 miles and cost approximately $1,500.00.

Project #4 (Cram Hill Block) Reclaim depleted 2-acre gravel pit along Route 12A. The objective is to maintain this area as a grassy opening to benefit the wildlife, especially white-tailed deer.



(2) PROJECT NUMBER

ROXBURY STATE FOREST

CRAM HILL BLOCK

ROXBURY, VERMONT

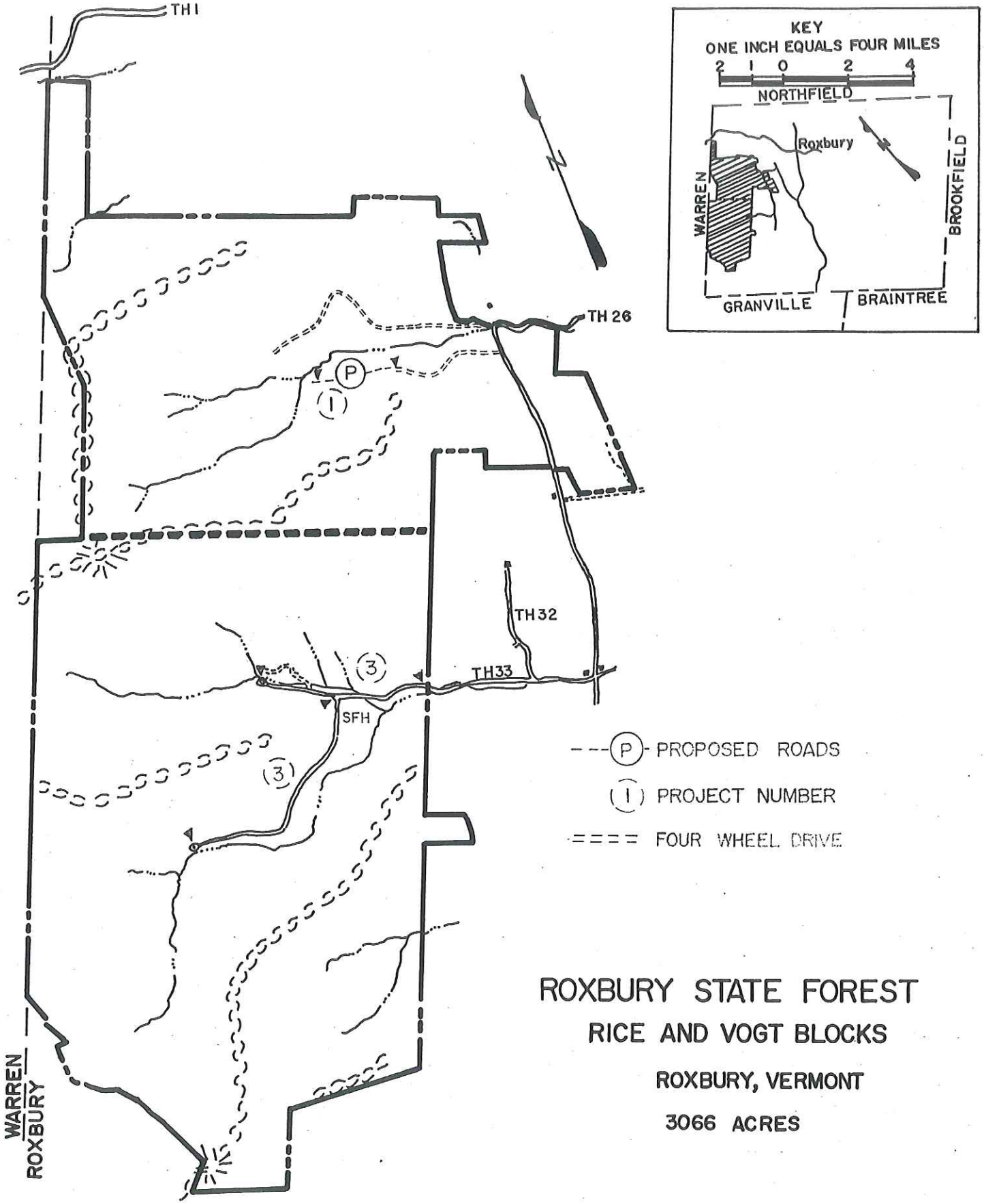
2443 ACRES

ROADS

20 10 0 20 40 60 80

SCALE: ONE INCH EQUALS 40 CHAINS (2640')

RN 3/88



ROXBURY STATE FOREST

RICE AND VOGT BLOCKS

ROXBURY, VERMONT

3066 ACRES

ROADS

40 0 40 60

SCALE IN CHAINS

RJT 88MAR

ROAD IMPROVEMENTS

Fiscal Years 1981 - 1990

Year	Project	Estimated Cost	Allocation	Year of Work	Percent Complete	Actual Cost
1990	#1 Fuelwood Access Road (.5 mile)	$1,500.00				
1990	#2 Ditch Maintenance (1 mile)	$1,000.00				
1996	#3 Ditch Maintenance (1.5 miles)	$1,500.00				
1991	#4 Reclaim Gravel Pit					