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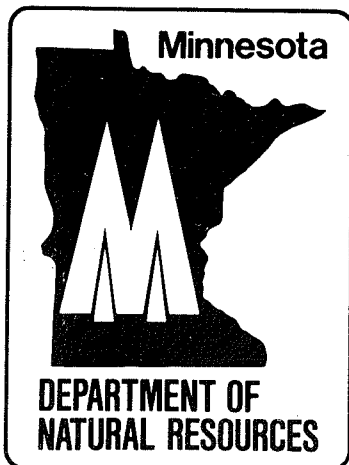
J. Dorer

800685

Memorial Hardwood Forest

A Plan for Land Acquisition

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STATE OF MINNESOTA

OCTOBER 1979

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INTRODUCTION

The purchasing of forest land has been an important part of the Forestry program in southeastern Minnesota since 1961. The acquisition plan has been prepared to guide the Department of Natural Resources (DNR) Forest land acquisition program in the Richard J. Dorer Memorial Hardwood State Forest for a 10-year period. In 1989 or before, depending on need, a new reassessment of the program must be initiated.

The plan has been written to provide the general public with an awareness of the purpose of land acquisition as it relates to the development and management of the Forest. Other readers would include DNR personnel, the Minnesota Legislature, the Southeastern Minnesota Natural Resources Advisory Committee, and local government bodies.

Plan Contents

The plan has been organized into three parts. The DNR plan for acquisition is in Part I. Important related information is in Parts II and III of the plan. The latter parts will help gain a general understanding of public concerns and insight into State Forest management and the Forest program. A more detailed management plan will be printed at a later date.

Part I includes a brief description of the area history and character to show the reason for the establishment of the Dorer Memorial Hardwood State Forest. The management objectives of the forest are defined as they relate to the natural resources.

The plan for a continued acquisition program in order to carry out the management objectives is discussed and purchase objectives for a 10-year period are projected. Guidelines for acquisition are presented.

Part II presents an overview of local concerns and citizen involvement in the planning process. Specific issues including taxes, land values, State land management capabilities, competing land uses, and public land ownership are addressed.

The purpose of part III is to familiarize people with the overall forest management program. It is necessary to read this section to better understand criteria used to evaluate priority purchasing areas. Forestry activities not specifically related to land acquisition are also described.

PART I

THE FOREST PAST AND PRESENT

History

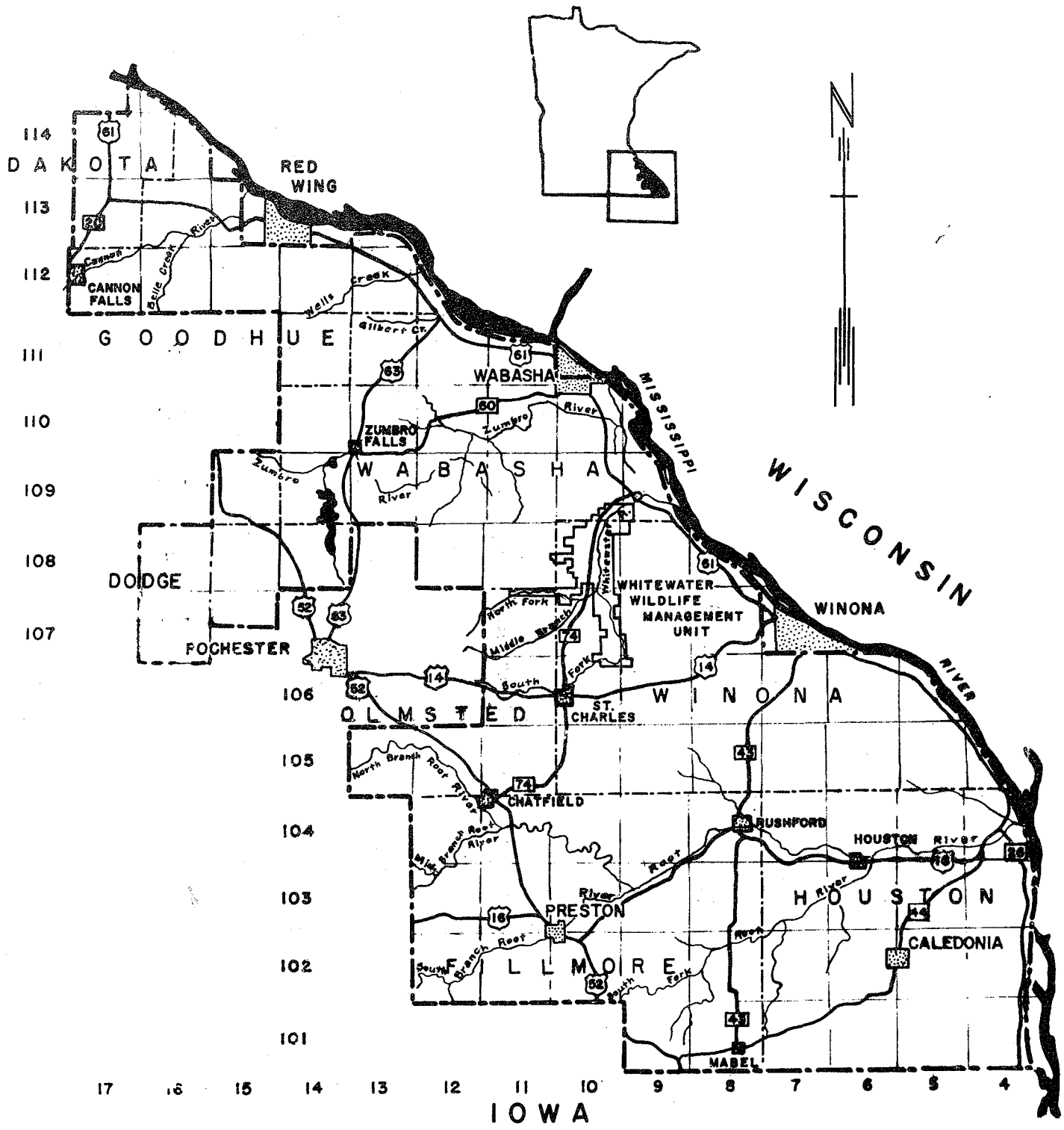
The southeastern corner of Minnesota, because of its location on the Mississippi River, played an important role in the settlement and development of the State as early as the 1830's. The lands were cleared to be planted and cultivated. The landclearing provided lumber for rapidly growing river towns. As the railroad pushed westward from the Mississippi, it provided the inland area with access to markets. The lumber and agricultural industry grew and the region enjoyed prosperity.

The natural resources were exploited without regard for conservation and land management. Cultivation and logging exposed the soils on steep slopes, resulting in extensive erosion. In some areas, eroded soil accumulated to depths of 20 to 30 feet, burying homes, bridges, and farms in the valleys. Some farms were abandoned as the productive soils washed away into streams.

In the early 1900's land management agencies such as the Soil Conservation Service and the Department of Natural Resources recognized southeastern Minnesota as an area suffering from man's abuse. The land needed rehabilitation through management. In the 1940's, the Department of Natural Resources (then called the Department of Conservation) started its Private Forest Management Program (PFM). Under this program, private landowners can request technical assistance from the Department on their woodland. It was realized that the woodlands were in a deteriorating condition and were in need of improved management. This improved management increases wood production and reduces water runoff from the woodlands. However, the accomplishments under this program, although substantial, have been less than satisfactory. It is very hard to convince a landowner to invest time and money into his woodlot when it will take decades for him to realize a return. This situation eventually helped lead to the establishment of the Richard J. Dorer Memorial Hardwood State Forest.

Establishment of a State Forest

The Richard J. Dorer Memorial Hardwood State Forest was established in 1961 (originally the Memorial Hardwood State Forest) in tribute to pioneers and veterans of all wars. The Forest encompasses that part of the southeast characterized by forested valleys and coulees. The Forest includes all of Wabasha, Winona, Houston and parts of Dodge, Dakota, Olmsted, Goodhue, and Fillmore Counties.



RICHARD J. DORER MEMORIAL
HARDWOOD STATE FOREST
TWIN CITIES TO IOWA BORDER

Land Character

Topography - The character of southeastern Minnesota cannot be found elsewhere in the State. The most rugged terrain in Minnesota is located in the Dorer Memorial Hardwood State Forest. Mixed hardwood forests of oak, hickory, basswood, ash, and maple cover the hillsides and bottom-land river corridors.

The land surface is characterized by rolling plains with deep, stream-cut valleys. There are no natural lakes, only countless streams and rivers which have cut and gouged the land over many thousands of years. A few lakes now exist since the construction of dams. Flat flood plains of the major rivers, the Zumbro, Root, and Cannon form wide valley floors. Steep valley walls and rocky bluffs rise 100 to 500 feet from flood plains to ridgetops.

Map 2 shows the average slope of the forested areas throughout Minnesota. The map illustrates the steep landscape of the Hardwood Forest area relative to other areas in the state.

Land Use - The rugged surface features of the land and associated soils have played a major role in determining rural land use. Cultivated fields dominate the rolling hilltops and gently sloped valley bottoms. Soils on these sites vary but are generally fertile and suitable for agricultural production.

Forests occupy the remaining steep hillsides and valleys which are too narrow for agriculture. The soils of the forested areas are generally a steep, stony, rocky soil type according to the Minnesota Soils Atlas. Portions of this area are productive but only suitable for forest crops, wildlife, and recreation.

TABLE 1

THE LAND USE OF THOSE COUNTIES AFFECTED BY
THE RICHARD J. DORER MEMORIAL HARDWOOD STATE FOREST
(in acres)

COUNTY	FORESTED	WATER	MARSH	PASTURE & OPEN	EXTRACTION	CULTIVATED	URBAN/ RESIDENTIAL	TRANSPOR- TATION	TOTAL
Goodhue	64,440 13%	13,880	1,600	82,560 16%	160	328,400 65%	11,640	240	502,920
Wabasha	78,400 22%	14,320	1,840	47,240 13%	120	207,960 58%	6,360	40	356,280
Olmsted	33,760 8%	520	40	84,320	440	285,280	16,920	1,120	422,400
Winona	137,560 33%	13,000	1,080	61,160 15%	40	193,000 46%	11,080	600	417,520
Fillmore	86,320 16%	0	40	112,480 20%	440	346,040 63%	7,560	80	552,960
Houston	140,880 38%	8,800	3,200	51,880 14%	0	158,160 42%	5,360	0	368,280
Dodge	7,400 3%	0	200	54,440 19%	40	214,680 77%	3,480	80	280,320
Dakota	31,080 8%	10,160	4,360	69,640 18%	320	228,320 60%	35,640	680	380,200

Another major rural land use is pasture. Normally, the steep lands not suitable for cultivation are pastured. This includes some forested lands, but generally, woodlands are of marginal pasture value.

The statistics presented in Table I show the relative amounts of each land use in the Hardwood Forest counties. Generally, agriculture is the main economy of southeastern Minnesota. The forested area is significant and has potential for greater contribution to the area economy.

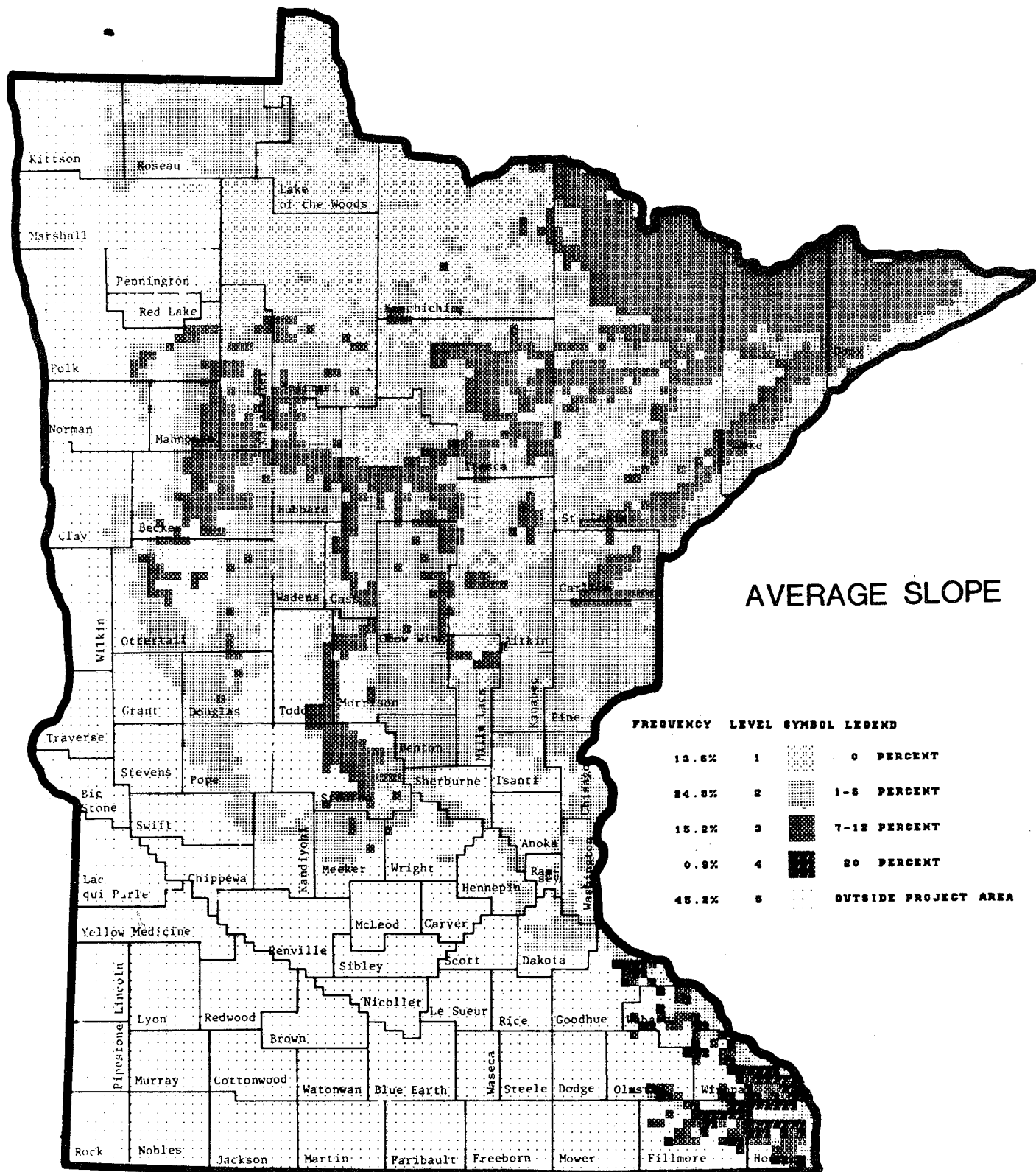
Water - In order to fully appreciate the land character of the southeast, one must consider its water resource. Looking at each 40-acre parcel in a particular county, one finds about half are adjacent to a stream, river, or intermittent stream. (Table 2)

Combining rugged terrain, agricultural land use, and proximity of moving water, the sensitivity of the southeastern environment becomes apparent. Nowhere in Minnesota is the inherent erodibility higher than within the Memorial Hardwood State Forest area.

TABLE 2

TOTAL ACREAGES OF PARCELS OF LAND ADJACENT
TO WATER IN THOSE COUNTIES AFFECTED BY THE
RICHARD J. DORER MEMORIAL HARDWOOD STATE FOREST

COUNTY	RIVER OR STREAM	INTERMITTENT STREAM	LAKE	OTHER (DITCH, ISLAND ALL WATER)	NOT ORIENTED	TOTAL
Goodhue	52,280 10%	201,720 40%	10,680 2%	2,120 1%	236,120 47%	502,920 100%
Wabasha	40,600 11%	119,160 33%	5,400 2%	6,120 2%	185,000 52%	356,280 100%
Olmsted	55,720 13%	139,280 33%	1,400	520	225,480 54%	422,400 100%
Winona	60,080 14%	120,120 29%	3,960 1%	2,800 1%	230,560 55%	417,520 100%
Fillmore	76,400 14%	213,120 39%	0	200	263,200 47%	552,960 100%
Houston	66,400 18%	123,240 34%	8,240 2%	80	170,320 46%	368,280 100%
Dodge	30,320 11%	94,000 33%	160	15,600 6%	140,240 50%	280,320 100%



MAP 2

RANGES OF AVERAGE SLOPE
ESTIMATES ASSIGNED TO SOIL
LANDSCAPE UNIT / GEOMORPHIC
REGIONS

EACH FIVE KILOMETER SQUARE DATA CELL
HAS AN ASSIGNED SOIL LANDSCAPE UNIT AND
GEOMORPHIC REGION. THE VALUES OF
AVERAGE SLOPE CODED FOR EACH COMBINA-
TION AND ENTERED INTO THE MIMIS IS READ
BY A COMPUTER AND ASSIGNED TO THE
APPROPRIATE RANGE.

DATA SOURCES: INFORMATION PROVIDED BY
UNIVERSITY OF MINNESOTA SOIL SCIENTISTS
AFFILIATED WITH SOIL ATLAS PROGRAM.

5 KILOMETER DATA FILE

MAP PRODUCED BY
MINNESOTA LAND MANAGEMENT
INFORMATION SYSTEM



MINNESOTA STATE PLANNING AGENCY
LAND MANAGEMENT INFORMATION CENTER
15 CAPITOL SQUARE BUILDING
550 CEDAR STREET
ST. PAUL, MN. 55101

ROLE OF THE FOREST

The land setting of the Dorer Memorial Hardwood State Forest has been described briefly. The basic objectives of forest management need to be examined to understand the Forest's contribution and potential for management in the region.

Purpose

Minnesota's State Forests are established by Minnesota statutes, Section 89.021 Subdivision 1 as follows:

There are hereby established and re-established as State Forests, for growing, managing and harvesting timber and other forest crops and for the establishment and development of recreational areas, and for the protection of watershed areas, and the preservation and development of rare and distinctive species of flora and fauna native to such areas...

The goals of the Dorer Memorial Hardwood State Forest are consistent with the statutes. The State will acquire forest land to be managed as a State Forest to achieve the optimum mix of ecological, economical, and social objectives.

Ecological Objectives

The economic and social factors of forest management depend on the preservation of a healthy ecosystem. Consequently, as managers of public land and advisors in a technical capacity to the private sector, foresters must utilize management practices that will improve and sustain critical components of the ecosystem: the soils, water, wildlife, and vegetation, particularly the forests.

Vegetative management is a forester's most effective tool for ecological land management. Dense vegetative cover is employed to stabilize soils. Wildlife habitat is improved and maintained through management of preferred species for cover and forage. Fisheries habitat and water quality is improved and maintained as sediment is reduced by soil stabilization. Forest stands are managed for sustained yields, thus perpetuating the hardwood forests so characteristic of the landscape.

Economic Objectives

The trees of southeastern Minnesota will be grown, managed, and harvested to help sustain existing industry with a continuing supply of high-quality wood. The woodland in this area has the potential to provide enough material to support an increase in the wood using industries. The hardwoods in the forest, such as the oaks, ashes, basswood, walnut, elm, cherry, and butternut are more valuable per unit volume than the softwood and aspen types that occur in Minnesota's northern forests. The hardwoods are grown for products such as veneer and lumber for furniture and interior construction.

The value of a stand of trees, or an individual tree, is greatly increased when proper silvicultural techniques are applied to improve stand composition and to improve tree growth and form. Intensification of hardwood management can increase timber yields substantially and will contribute significantly toward supplying the future projected increases in timber demand for these types of products.

Forest management is necessary not only on state lands but on private woodlots as well. Private forest management assistance must be provided and promoted in a coordinated effort to stabilize the supply of forest products in the area. State land will never be able to produce all of the wood products needed.

Social Objectives

Forest crop production is not the only economic advantage in forest management. The forest attracts many people pursuing many forms of recreation. An influx of recreationists from outlying areas means increased spending in the forest area.

While boosting the economy, the forest is fulfilling a part of society's need for outdoor recreation. Increasing recreational demands at both the local and state levels can be met in part by public forest lands that support primitive recreation areas and minimal facilities.

Cooperation and Education Objectives

The Richard J. Dorer Memorial Hardwood State Forest is not a cure-all for the environmental problems of southeastern Minnesota. The State has a limited acquisition program that has progressed slowly. Ultimately, the State of Minnesota will purchase only a small portion of the forested and rough land within the forest boundary.

The environmental quality of the forests and the region can be improved only through the efforts of all agencies, industries, and citizens in the region. Therefore, one of the forest managers' objectives is to promote public awareness and understanding of management practices through forest management demonstration areas and to aid in the establishment of school and municipal forests.

Land Acquisition

It was with these objectives that the DNR undertook the task of developing and managing the Dorer Memorial Hardwood State Forest in 1961. State ownership of a small portion of the Forest area was necessary to carry out the management objectives and so the acquisition program began.

Current State Forest Ownership

The State Forest ownership in the Memorial Hardwood Forest has gradually increased since 1961 from about 1,200 acres to 35,614 acres. Most of this acreage was purchased. The remainder is school trust fund, gift, or county tax-forfeit land that the counties transferred to the State to manage. When the Forest was established, the goal was to purchase 200,000 acres of forested and rough land over a 50-year period. A publication entitled Minnesota Memorial Hardwood Forest, A Plan for Acquisition and Development was written to direct the land acquisition from 1966 to 1976. The 1966 plan recommended acquisition of 70,000 acres in addition to the 12,000 acres of existing State Forest land at that time. The projected ownership for 1976, then, was 82,000, more than double the completed acquisition by 1978 (Table 3).

Table 3 STATE FOREST OWNERSHIP COMPARED TO PAST PROJECTIONS

County	Original 200,000 Acre Goal Distribution	10-Year 1966 Study	*Current State Ownership
Dakota	5,000	1,000	56
Wabasha	35,000	13,000	9,229
Goodhue	25,000	7,800	4,450
Fillmore	35,000	7,600	5,206
Houston	45,000	21,400	9,945
Olmsted	13,000	2,000	281
Winona	40,000	17,100	6,447
Dodge	2,000	-	-
Total	200,000	70,000	35,614

*Department of Natural Resources, Bureau of Lands reports, Aug. 1978 with the exception of Wabasha Co. The Marcou tract, 2370 acres purchased since the date of the land report, has been included. Other tracts are in the process of being recorded at this time.

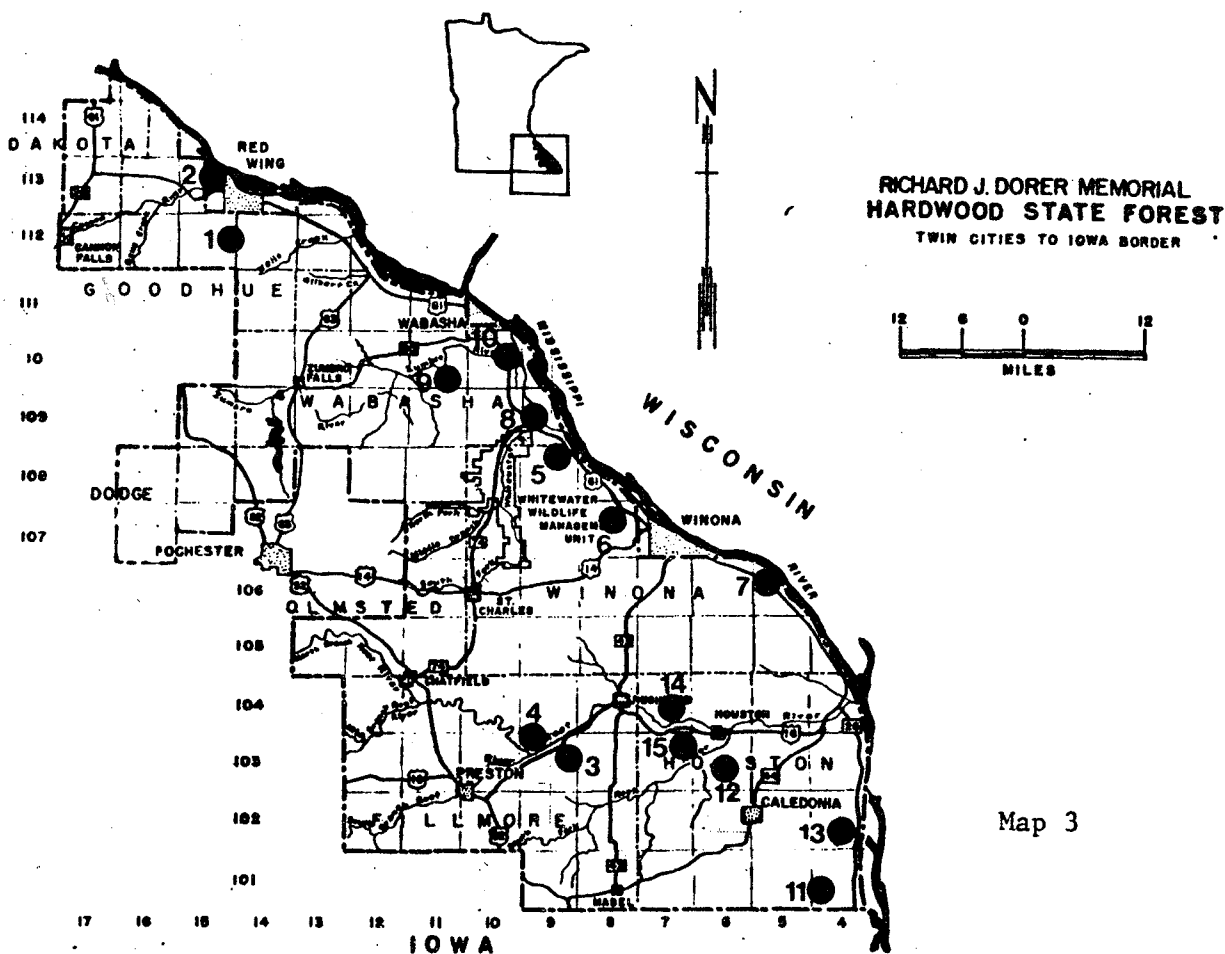
The 1966 plan established large compartments throughout the Forest. Within the compartments, called purchase compartments, the State has bought land. The large compartments allowed for purchasing flexibility which is important when dealing only with willing sellers. The plan stated the need to eventually consolidate State Forest land holdings over time as willing sellers became available. Table 4 lists State Forest units which show ongoing progress in consolidating State Forest ownership. Map 3 shows the distribution of the units throughout the Forest.

TABLE 4 Consolidated Blocks of State Forest Land in the Richard J. Dorer Memorial Hardwood State Forest.

County	Unit Name	# of Tracts Purchased	Acres
Goodhue	1 Hay Creek	10	1,279
	2 Vermillion-Cannon River	8	1,615*
Fillmore	3 Gribben Creek	7	1,184
	4 Pilot Mound	4	792*
Winona	5 Trout Valley	16	2,190*
	6 Bronk	1	772
	7 La Moille	6	1,300
Wabasha	8 Snake Creek	14	2,903*
	9 Zumbro Bottoms	2	2,840
	10 Kruger	9	1,398
Houston	11 Wovoka	5	995**
	12 Badger Creek	5	800
	13 Reno	18	3,089
	14 Money Creek	5	2,041*
	15 Oak Ridge	1	1,258
TOTAL		111	24,456

*A consolidated area of State Forest land including tracts 1/2 mile apart

**A consolidated area of State Forest land including tracts 1 mile apart



PLAN FOR LAND ACQUISITION

The following section describes the DNR purchase objectives for the Dorer Memorial Hardwood State Forest after reassessment of the acquisition program to date. The purpose of the reassessment was to determine which areas were more desirable for State Forest lands and how much land should be purchased.

Establishment of Compartments

Specific areas in each county were determined to have greater priority for acquisition. Priority determination was accomplished by identifying all areas in each county with substantial amounts of contiguous forest lands. Each forested area was encompassed by a rough boundary to create individual compartments. The forest compartments were numbered, inventoried, and analyzed to determine their relative suitability for State acquisition.

Compartment Analysis

The compartment analysis was based on several criteria selected to measure the desirability of the forested areas for inclusion in the Forest. The timber-producing potential was assessed by determining how many acres of potential State Forest land occurred on the more productive north-facing and east-facing slopes and bottomlands. (The criteria are discussed in more detail in Part III).

The potential adverse impact on the water quality due to erosion was accounted for by considering general soil characteristics of the land area involved.

The fish and wildlife potential was assessed by noting the particular resources important to them. While all portions of the forest have wildlife value, the compartments which included trout streams, warm-water streams, waterfowl habitat, or were within the major turkey stocking ranges were given higher consideration.

A compartment received more consideration if it lies adjacent to recreational units such as designated canoe routes, proposed Scientific and Natural Areas, existing campgrounds and picnic areas, and the Mississippi River corridor which includes the Great River Road.

The larger areas were considered to have greatest potential for efficient timber management and recreational development. Likewise, those compartments with existing State ownership were given greater value than those with no State ownership.

The kind of road access (paved or unpaved) was determined to judge the accessibility for public use and management activities. The compartments with no physical access were given no priority.

Analysis Results

The analysis results allowed the compartments to be organized into three groups: first, second, and low-priority by county. All compartments in the low-priority category were dropped from the maps and will not be areas of forest acquisition. Management assistance for private landowners will continue to be given by DNR foresters regardless of what priority compartment the property falls in.

First and second priority compartments are desirable areas for State Forest acquisition and management. Overall, the compartments exhibit many of the criteria desirable for multiple use forest management. With the exception of a compartment in Goodhue County, all forest compartment purchase areas are primarily composed of steep, stony, rocky land and fall into the Red Wing-LaCrescent Uplands, steep geomorphic region (Minnesota Soil Atlas).

Within a compartment, the State's objective is to purchase as much of the suitable forest land as possible from willing sellers. Most State Forest land acquisition would consist of forested land, although some open and pastured and agricultural land would occasionally be included in the purchases.

The statistics and characteristics for the forest compartments are shown for each individual county on Tables 6-11. Maps 4-11 show forest compartment purchasing areas. The gross compartment area was measured but it is not an indicator of the acquisition goal for any compartment. Because of the irregular land use patterns in the southeast area, it is not feasible to exclude unsuitable land from the forest compartments.

Acquisition Goal Summary

The county goal figures were roughly calculated by subtracting the current State ownership from the total forest land in the compartments and dividing the results by two. The calculations are based on the assumption that the State would be successful in acquiring 50% of the remaining private forest land in a particular compartment in the next 10 years.

Calculations for Houston County were slightly modified. The original figure was significantly higher than other Forest counties. Therefore, the acre goal figure was adjusted downward slightly from 17,000 acres to 14,000 acres.

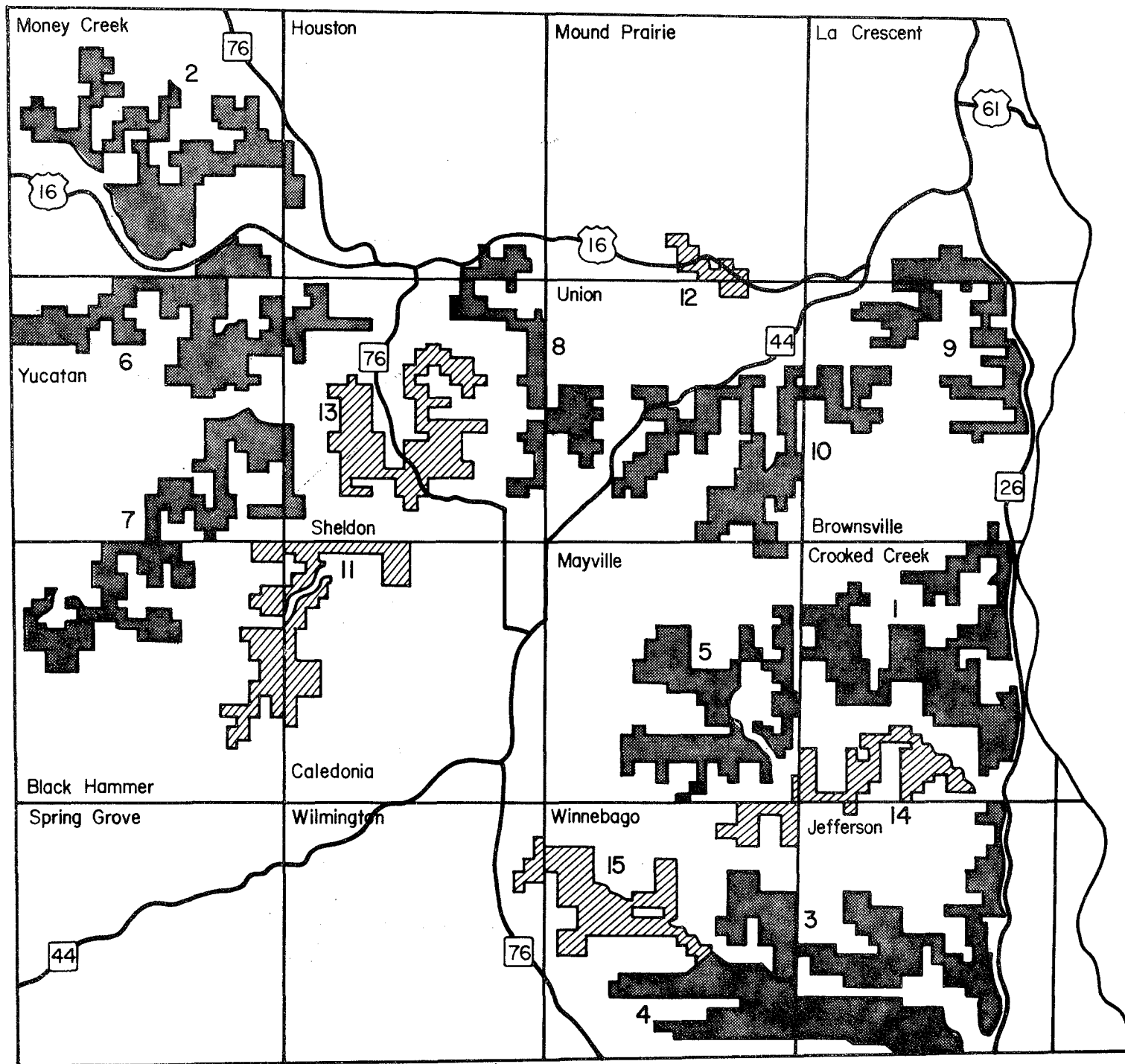
Table 5 lists the county acquisition objectives of the counties in the Forest based on the results of the compartment analyses. There is no compartment in Dodge County because of the limited forest area. The forest areas in Dodge County are separated by significant areas of tillable land so that it wasn't possible to bring them together in a purchase compartment. Acquisition in Dodge County will be quite limited.

TABLE 5 SUMMARY OF ACQUISITION GOALS IN THE HARDWOOD
FOREST COUNTIES
(Acre Units)

<u>County</u>	<u>Total County Area</u>	<u>Amount of Woodland in County</u>	<u>Approx. Area in State Forest Boundaries</u>	<u>Existing State Forest Land</u>	<u>10-Year Purchase Goal</u>	<u>Projected Ownership By 1989</u>
Houston	368,280	140,880 38%	360,523	9,945	14,000	23,945 6.5%
Fillmore	552,960	86,320 16%	391,917	5,206	12,630	17,836 3.2%
Winona	417,520	137,560 33%	392,319	6,447	8,400	14,847 3.6%
Wabasha	356,280	78,400 22%	341,286	9,229	5,400	14,629 4.1%
Goodhue	502,920	64,440 13%	204,090	4,450	5,000	9,450 1.9%
Olmsted	422,400	33,760 8%	172,597	281	1,800	2,081 .5%
Dakota	380,200	31,080 8%	61,200	56	300	362 .1%
Dodge	280,320	7,400 3%	46,000	--	--	--
Total			1,969,932	35,614	47,530	83,150

HOUSTON COUNTY

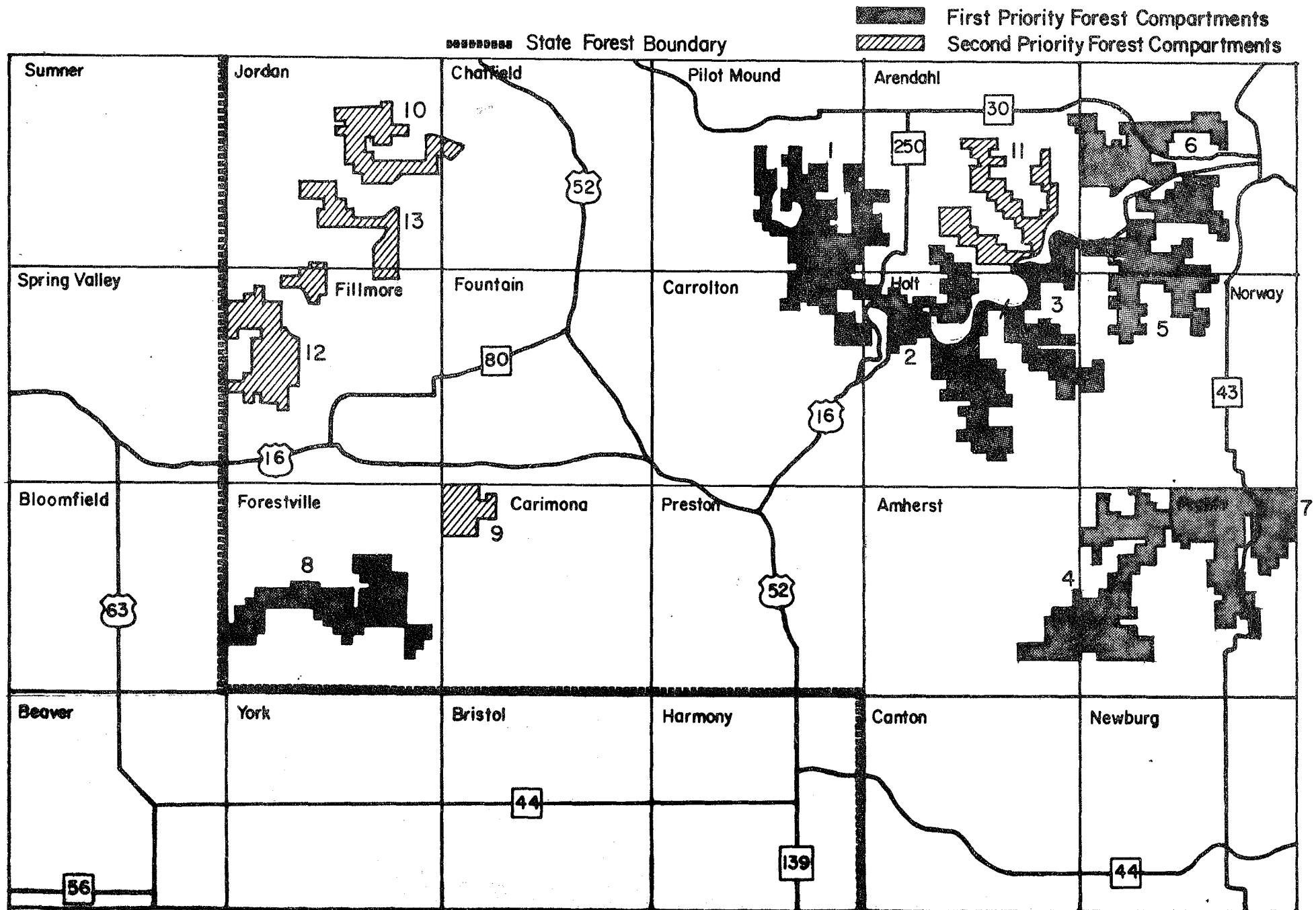
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HOUSTON COUNTY MAP 6

- First Priority Forest Compartments
- Second Priority Forest Compartments

FILLMORE COUNTY MAP 7



WINONA COUNTY

[illegible]

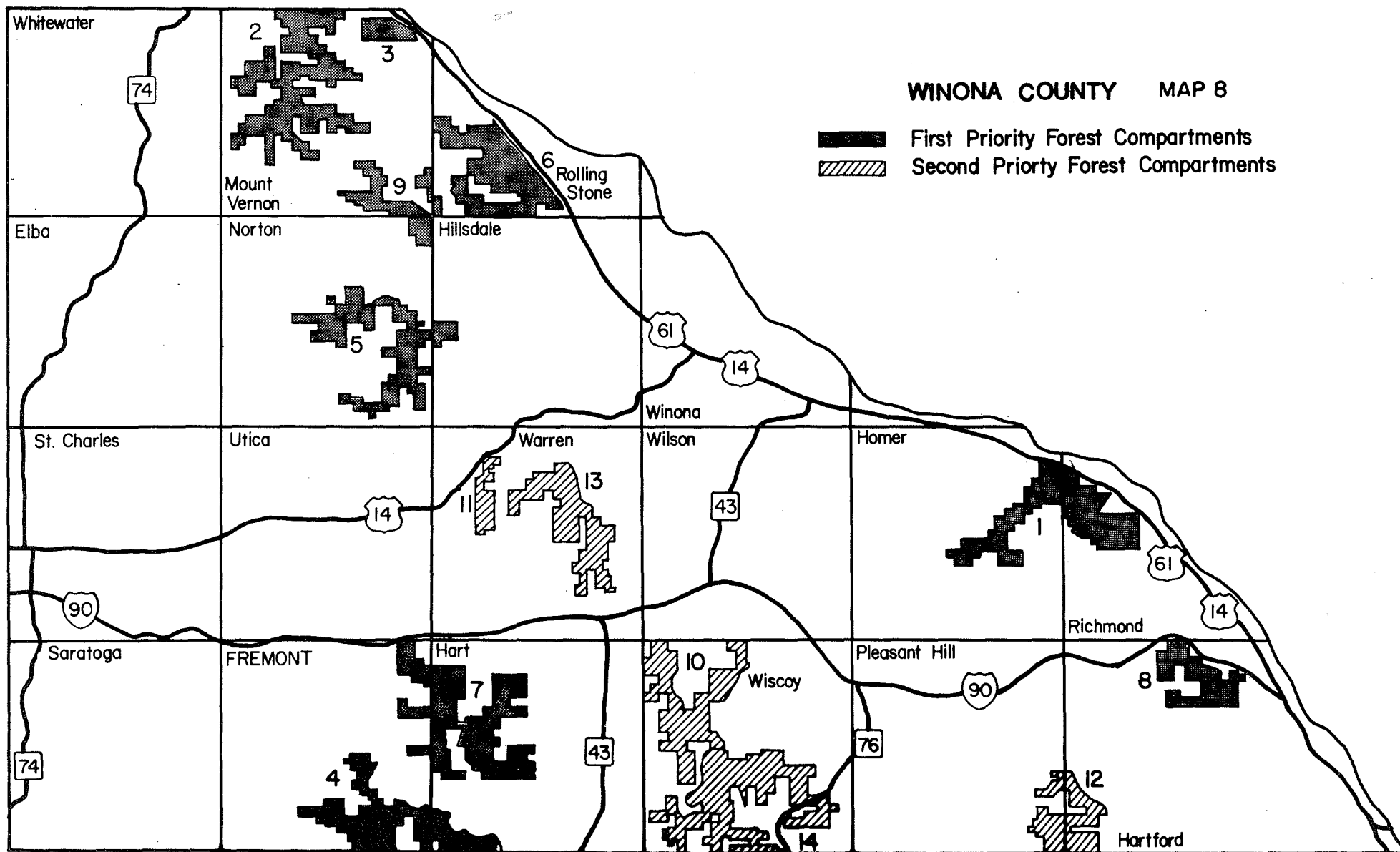


TABLE 9

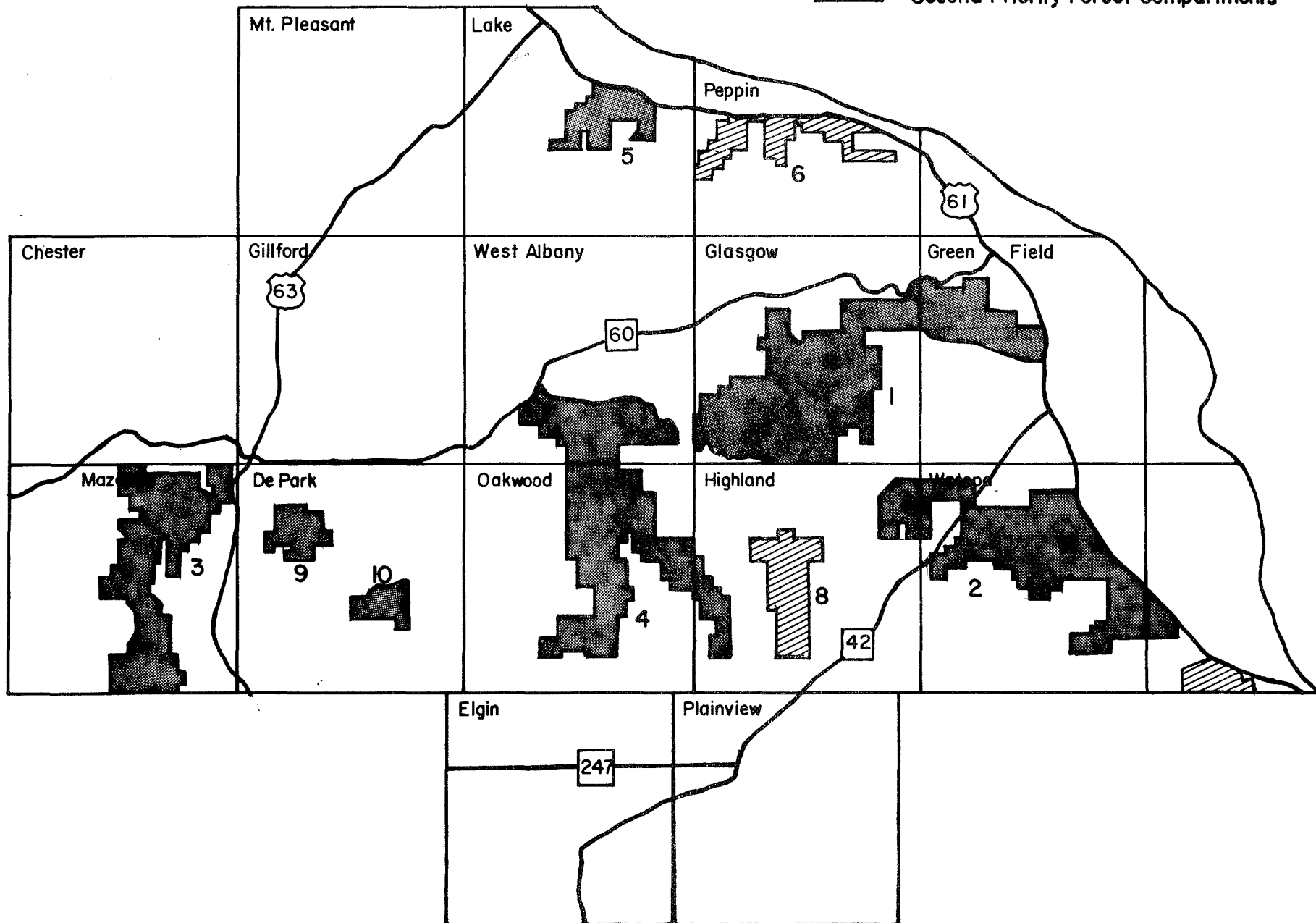
COMPARTMENTS FOR STATE FOREST LAND ACQUISITION AND MANAGEMENT

WABASHA COUNTY

[illegible]

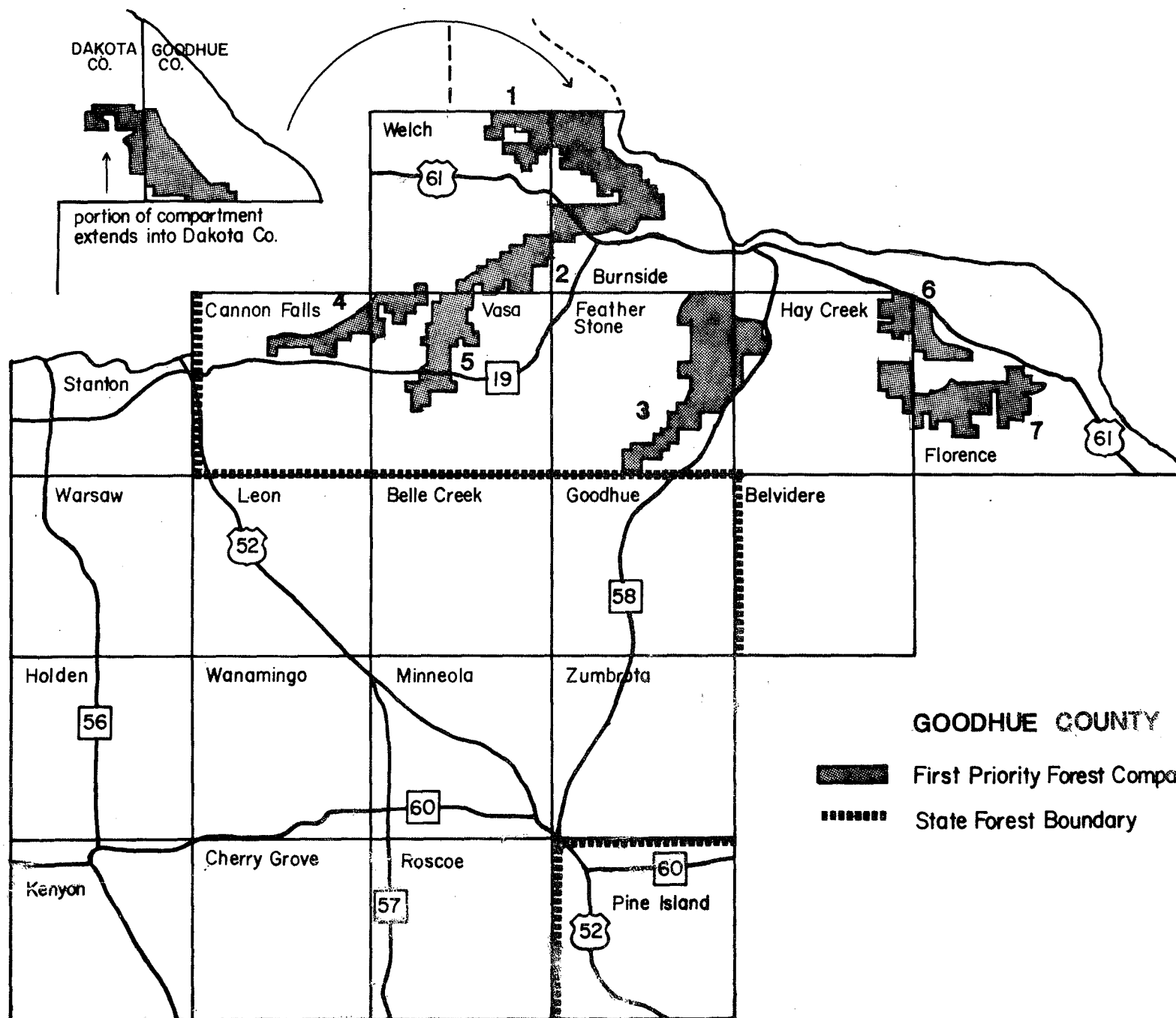
WABASHA COUNTY MAP 9

First Priority Forest Compartments
Second Priority Forest Compartments



GOODHUE COUNTY (and portion of DAKOTA CO.)

[illegible]



GOODHUE COUNTY MAP 10



TABLE 11 COMPARTMENT FOR STATE FOREST LAND ACQUISITION AND MANAGEMENT

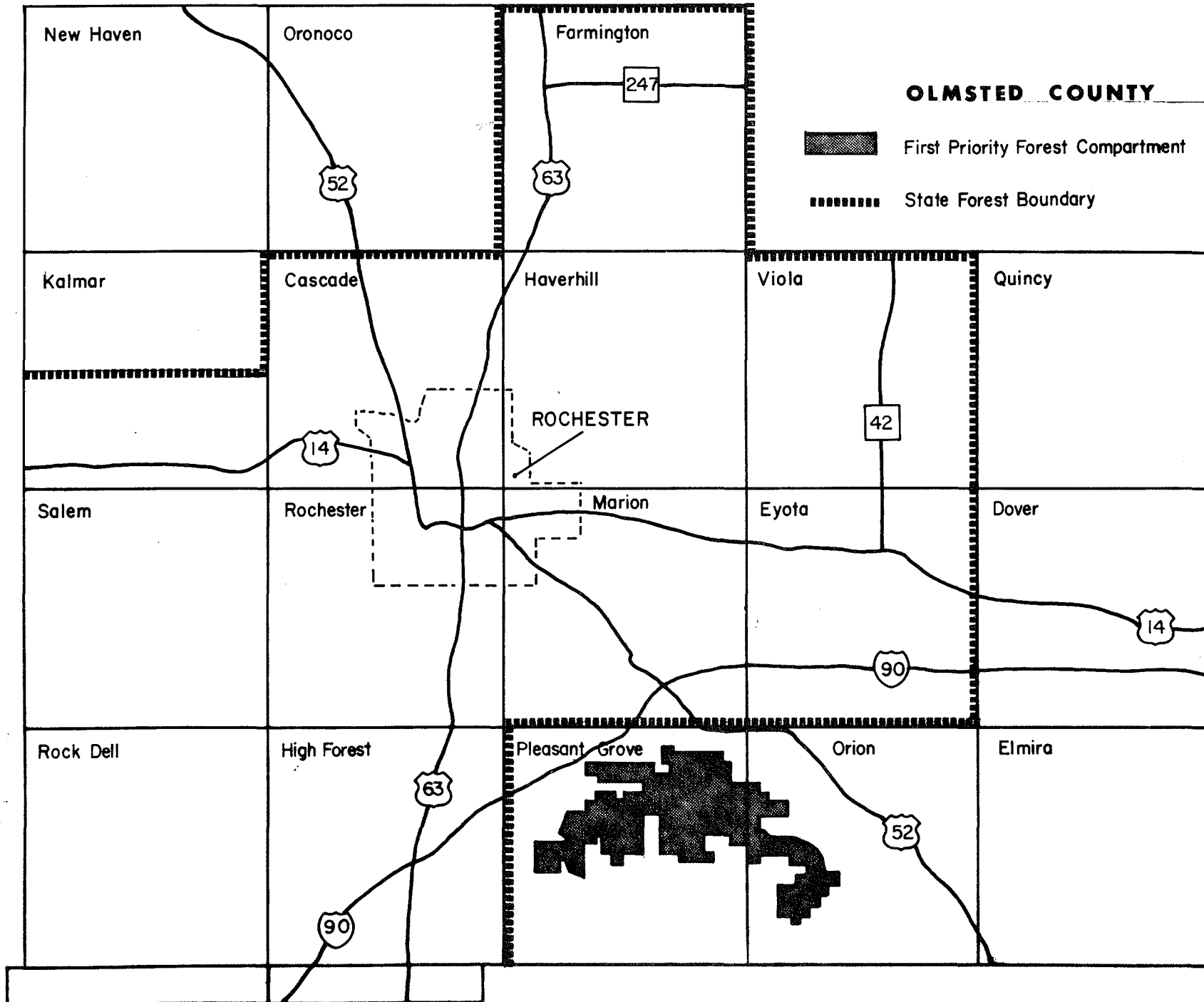
OLMSTED COUNTY

Only one priority forest compartment has been identified in Olmsted County. Compartment characteristics are as follows:

Compartment Gross Area	7,560 acres
Compartment Wooded Area	4,138 acres
	55%
Aspect - North and East Slopes	1,107 acres
Bottomland	790 acres
Ridgetop	1,336 acres
South and West Sloped	905 acres
Soils - Steep, Stony, Rocky Land	6,220 acres
Alluvial	320 acres
Loamy	1,120 acres
Fish, Wildlife, and Recreation Considerations	<ul style="list-style-type: none"> - Contains Partridge Creek which was trout habitat in the past. - The Zumbro River drains the compartment. - The area has been stocked with turkeys. - Contains Fugles Mill historic site. - Very scenic with high recreation development potential.
Access	The compartment is within ten miles of Rochester and paved access is good.
State Forest Ownership	281 acres

OLMSTED COUNTY

-  First Priority Forest Compartment
-  State Forest Boundary



ACQUISITION GUIDELINES

The ten-year acquisition objective is to own, in total, about four percent of the land area within the Forest boundary. This amounts to about 15 percent of the forested and rough land resource within the Forest.

The amount is a relatively minor portion of the Forest area. Therefore, the acquisition program needs clearly-defined direction to insure well-placed purchases. The plan is designed to guide an effective acquisition program until the completion of the ten-year goal at which time the project should be reassessed and a new plan prepared.

General Guidelines

First priority compartments will be the primary target of the State's purchasing activity for ten years or until all landowners have been contacted and no more willing sellers exist.

When acquisition is completed or willing sellers are no longer available in first priority compartments, efforts will be moved to second priority compartments.

If land desirable for the State Forest is offered to the State in the second priority compartments during the next ten years, it should be purchased.

The lands not included in mapped compartments will not be acquired with the exception of a tract that is adjacent to a compartment boundary or a portion of a tract that extends beyond a boundary. Only in extreme instances should any lands be purchased in other than first and second priority compartments.

Modification of Guidelines

The acceptable areas of State Forest acquisition have been modified temporarily as a result of a recommendation of the Southeastern Minnesota Natural Resources Advisory Committee.

Between January 10, 1979 and January 10, 1980, State Forest purchases are restricted to the 15 consolidated blocks and to only those locations where current scattered parcels would be brought together to form a management unit. Under this restriction, the Division of Forestry could purchase less than half of the acres planned.

Those parcels set in motion for purchase as of January 10, 1979, are excluded from the restriction. It is possible that the plan may be modified again in the future. The general nature of the plan can withstand some modifications and yet provide an effective guide in the long-term program.

Guidelines for Purchases Within Forest Compartments

Certain tracts of land are more critical than others within the priority management compartment area. Although the State cannot be assured of successfully purchasing them, the more critical parcels should be the primary target for acquisition. If initial attempts prove unsuccessful, follow-up contacts should occur regularly. Priority parcels can be determined according to the criteria below.

Position in the Watershed - The areas directly adjacent to streams and rivers are desirable to provide a forested buffer between tilled lands and streams. Forest areas adjacent to hilltop fields are critical since these fields are often the areas sensitive to erosion and gullying.

Timber Productivity - Parcels most desirable for producing timber contain north-facing and east-facing slopes. Well-stocked forest stands are desirable because they can produce income to the counties immediately.

Recreation Values - Parcels adjacent to streams, especially trout streams, reservoirs, or rivers with warm water game fish are particularly suited for public use. Potential rest areas and campsites exist along major canoe routes which receive heavy use. A parcel may provide a link in a trail system or be a desirable addition to a developing block of State land or other recreational unit with recreation potential.

Unique Resources - Any parcel within a given compartment that includes or is adjacent to a unique resource should be acquired for the Forest. Historical sites, proposed or designated scientific areas, scenic vistas, and demonstration and research sites are considered unique resources.

Access - Legal road access to a parcel is desirable for State Forest land acquisition unless a critical environmental problem hinges on its purchase. Access can be achieved with an easement from adjacent landowners if necessary. Legal access is desirable in most instances to develop the forest lands. However, landowners have permitted State personnel to use private roads for State land management where no other access existed.

PART II

PUBLIC CONCERNS AND INVOLVEMENT

The Hardwood Forest land acquisition program has, in recent years, become a politically sensitive program. Many factors have contributed to the situation making the program less popular today than it was originally. The main factors are the impact on the tax base, rising land values, competing land uses, DNR management, and eminent domain.

Local Government and Citizen Involvement

Until recently, the public has not been formally involved since the launch of the Memorial Hardwood Forest project. Then local input was from county board resolutions supporting the project. Occasionally, however, DNR foresters have met with county boards and other groups to discuss the Hardwood Forest.

The Department now intends to get more involved in a citizens' participation program, particularly for management plans. The Department wants interested parties to be involved in and to understand the planning process, data collection, analysis, and goal setting. They must have an opportunity to share their ideas in the creation of a management plan. Without citizen input, a management plan could suffer in public acceptance.

Southeastern Minnesota Natural Resources Advisory Committee (SEMNRAC)

A 15-member Committee comprised of citizens in Region 10 was created by the DNR in 1978. The Committee was prompted by the Regional Development Commission on Minnesota Resources. A representative from each of the counties in the region and an additional representative from Houston, Wabasha, Fillmore, and Winona serve on the Committee.

The first task of the Committee was to review and advise on a draft land acquisition plan for the Richard J. Dorer Memorial Hardwood State Forest. They worked on the Forest project seven months and presented their final recommendations to the Commissioner of Natural Resources in January, 1979 (See attachment 1). The Committee is presently inactive, but is subject to recall by the chairman.

Public Review of the Acquisition Plan

The DNR and SEMNRAC held five public listening sessions in the fall of 1978 to hear comments on the draft land acquisition plan. Response was generally negative concerning acquisition of additional land. However, many favorable written comments were received in support of the program.

The county boards and appropriate legislators were asked to review and comment on the draft plan. Only Winona County sent a response and it was negative.

Results

The DNR recognized many public concerns as legitimate, especially demands to improve State land planning and management and private forest management assistance. The DNR is improving its overall program while engaging in a temporarily reduced land acquisition program. Continued meetings with county boards and other groups is important for shaping the future of the program.

NEED FOR PUBLIC OWNERSHIP

Although there is local opposition to increased State ownership in southeastern Minnesota, there is a need for public ownership. The advantages of limited public ownership as they relate to objectives of forest management are the foundation of the land acquisition program.

Enhance Long Range Stability of the Natural Resources

Generally, public land has become more appreciated over time by the people. A trend toward disposal of public lands, once thought to improve local economics, has been reversed. Lands are instead retained and certain lands purchased to provide public use areas and insure future availability of those services that are not well suited to private lands or that cannot provide a reasonable profit to private landowners.

Likewise, public lands are needed for forest management because of low success rates of recruiting small woodland managers into private forest management assistance programs. Enthusiasm for management is low when returns on investments in hardwood management are delayed 25 to 100 years. State Forest land management will enhance the long-range resources stability of high-quality timber supply, and those numerous benefits associated with forests.

Protect the Critical Resources

The soils, water, forests, and animal communities are parts of an interwoven environment; their protection is critical. Disturbance of one component, such as the forests, can adversely affect the other components.

Land use planning is a technique used to present potential abuse and environmental disasters. It is essential in the southeast region to rehabilitate and stabilize the environment. Planning prescribes and facilitates continuing employment of sound management practices. The responsibility for performing this task is widespread, resting primarily with the county boards, Regional Development Commission, the Department of Natural Resources, the Soil Conservation Service, and other federal and state agencies.

Public lands, primarily, are suitable for uniform long-term resources management and programs that can be relied on to produce continuing and intangible benefits for many people.

On the other hand, the implementation of planned land use decisions are most effective when applied to lands in public ownership - without unreasonable and sometimes devastating delays.

Public Access to the Resource

The Minnesota Outdoor Recreation Plan published by the DNR Bureau of Planning in late 1974 indicated that of all areas in Minnesota, the area now encompassed by the Richard J. Dorer Memorial Hardwood State Forest will receive the greatest increase in recreational use.

A primary benefit of State ownership in the southeast region is access to the rich resources of the area for Minnesotans and tourists from other regions of the country. The public will be able to hunt, fish, camp, and experience a variety of recreational activities without fear of trespass on private property.

Demonstration of Forest Management

The Division of Forestry has established 11 forest demonstration areas throughout Minnesota. All interpret hardwood management for two reasons: (1) hardwood management is more complex than softwood management, and (2) there is not as much written information available for hardwood management as for softwoods.

Four of the 11 are located in the Richard J. Dorer Memorial Hardwood State Forest: the Isinours Demonstration Woodland, the Trout Valley Demonstration Woodland, the Pleasant Grove Demonstration Woodland, and the Lutchen Demonstration Area. More areas are needed to demonstrate some of these suggested activities in Figure 2.

Figure 2

POTENTIAL STATE FOREST DEMONSTRATION ACTIVITIES

Timber Harvest	Scenic Improvement
Regeneration Methods	Stream Improvement
Timber Stand Improvement	Wildlife Habitat Improvement
Special Products (e.g. maple syrup production)	(game food and cover)
Seed Source Areas	Arboretum
Natural or Control Areas	Special Interest Areas
Recreational Development	Self-guided Nature Trails
Watershed Protection and	Tree and Plant Identification
Erosion Control Structures	Historical or Geologic Landmarks
	Visitation Centers (simple)

There are benefits to both small (40-80 acres) and large (200+ acres) demonstration areas. Consolidated State Forest ownership is essential for establishing comprehensive demonstration areas. These can be used as recreation areas and/or sites for programmed field days when private landowners and interested citizens can experience many aspects of forest management.

Numerous small State Forest tracts well distributed throughout the Forest can be used by Forestry personnel in working with private landowners to demonstrate good forest management. The private forest management programs are critical to the overall improvement and sustenance of a healthy natural environment in southeastern Minnesota.

RELATED ISSUES

A brief discussion of common concerns related to the State Forest program is presented below. The State's perspective on the concerns is offered to possibly add another dimension to the public's understanding.

Eminent Domain Powers of the State

Special legislation for a particular tract of land is always necessary before the DNR can employ eminent domain powers. The DNR has never sought this power for the Richard J. Dorer Memorial Hardwood State Forest since the acquisition program began back in 1961. The Division of Forestry has dealt only with willing sellers and anticipates no problems in locating willing sellers in the future.

Lack of Management and Development

The DNR has been criticized for not developing those lands purchased to date. However, more has been accomplished than most people realize. In fact, through 1978 more than 1.4 million trees have been planted, 100 erosion and water control structures have been constructed, 48 miles of trails have been built, and timber stand improvement work, including thinning and pruning, has been carried out on 2,686 acres of State Land (Table 12). State lands are also inventoried within one year of acquisition. Inventory is essential to foresters before they can make appropriate management decisions.

These developments have been completed with minimal appropriations. The Memorial Hardwood Forest Study Report and Plan for Development, 1966, recommended \$200,000 be appropriated each biennium for development of lands purchased. Twelve years later the Forest development budget for the 1977-79 biennium was \$100,000 for the Hardwood Forest area.

In many cases, lands purchased are in poor condition as a result of past grazing. A long waiting period (up to 10 years) is necessary before the soil is loosened and satisfactory natural regeneration occurs. Only then can the thinning, pruning, and other timber development work begin.

TABLE 12 STATE FOREST DEVELOPMENT ACCOMPLISHMENTS WITHIN THE
RICHARD J. DORR MEMORIAL HARDWOOD STATE FOREST

T.S.I. PROJECTS

<u>County</u>	<u>Number</u>	<u>Acres</u>	<u>Costs</u>	<u>FENCING COMPLETED</u> (79 Projects)	
Wabasha	42	580	\$16,462		
Goodhue	21	236	6,789	<u>Distance</u>	<u>Cost</u>
Fillmore	24	736	6,649	6,619 rods	\$22,329
Houston	24	885	12,975		
Winona	37	239	8,286		
	148	2,686	\$51,161		

FUELWOOD SALES
(F.Y. 1977 & 78)

TREE PLANTING

389 Permits Issued

<u>County</u>	<u># Trees Planted</u>	<u>Acres</u>	<u>Cost</u>	<u>TRAILS</u>	
Wabasha	623,690	672	\$42,803	<u>Miles</u>	<u>Cost</u>
Goodhue	166,000	232	10,463	48	\$17,860
Fillmore	154,000	328	25,580		
Houston	302,850	587	25,961		
Winona	193,550	496	17,665		
	1,440,740	2,315	\$122,472		

EROSION CONTROL

<u>County</u>	<u>Ponds</u>	<u>Dikes</u>	<u>Diversions</u>	<u>Waterways</u>	<u>Dams</u>	<u>Acres</u>	<u>Cost</u>
Wabasha	16	8	7	2	4	3,057	\$21,477
Goodhue	2	-	2	-	2	35	3,732
Fillmore	8	1	12	1	4	54	5,176
Houston	9	-	2	2	1	627	2,753
Winona	16	-	1	0	0	463	5,355
	51	9	24	5	11	4,236	\$38,493

TIMBER SOLD

<u>County</u>	<u># Sales</u>	<u>Cords</u>	<u>Bd. Ft.</u>	<u># X-Mas Trees</u>	<u>Stumpage Value</u>
Wabasha &					
Goodhue	158	2,861	1,973,437	150	\$71,273
Fillmore	4	-	10,570	-	1,384
Houston	27	126	94,780	385	3,938
Winona	189	468	506,940	13,550	98,280
	378	3,455	2,585,727	14,085	\$174,885

In years past, the Department has been quite lax in informing the public as to the accomplishments and goals of the Hardwood Forest. This may be one reason for the criticism aimed at the DNR in the southeast in recent years.

The Potential Loss in Tax Base Within the Counties

The counties within the Memorial Hardwood State Forest have expressed a deep concern for the effect of State purchases on their county tax incomes. The Division of Forestry has stated often that Forest lands generate a revenue to the counties that can compensate for those monies uncollected as taxes on State land.

Officials of Houston County asked for study to determine the impact of the State Forest land acquisition program on their tax revenue. They simultaneously asked the State to impose a moratorium on land purchasing in Houston County, which the State honored until the study was completed.

The DNR and the Department of Revenue with the cooperative assistance of the Department of Education conducted the study to determine the impact of State Forest land on taxes in Houston County that was completed in 1978. The State then resumed acquisition.

The study showed that the present negative impact of State Forest land on tax rates is often insignificant and the future impact would be positive. Forest management should improve the quality and value of the timber. Greater income would be generated from the timber sales. The county receives 50 percent of the monies collected by the State in timber sales and leases. These payments to the county would be in excess of projected tax revenues.

The 50-50 payments to the counties has dramatically increased in the past five years (Figure 2). Fillmore and Wabasha County have recently received 50-50 payments comparable to the otherwise tax-generated money.

Major tax legislation was passed in the 1979 session which has a positive impact upon the counties in southeastern Minnesota. The State must return to the counties \$3 per acre for all acquired Department of Natural Resources land. Most counties will be receiving more money through this program than through the 50-50 payments.

RICHARD J. DORER MEMORIAL HARDWOOD STATE FOREST
Dollars returned to the counties by year

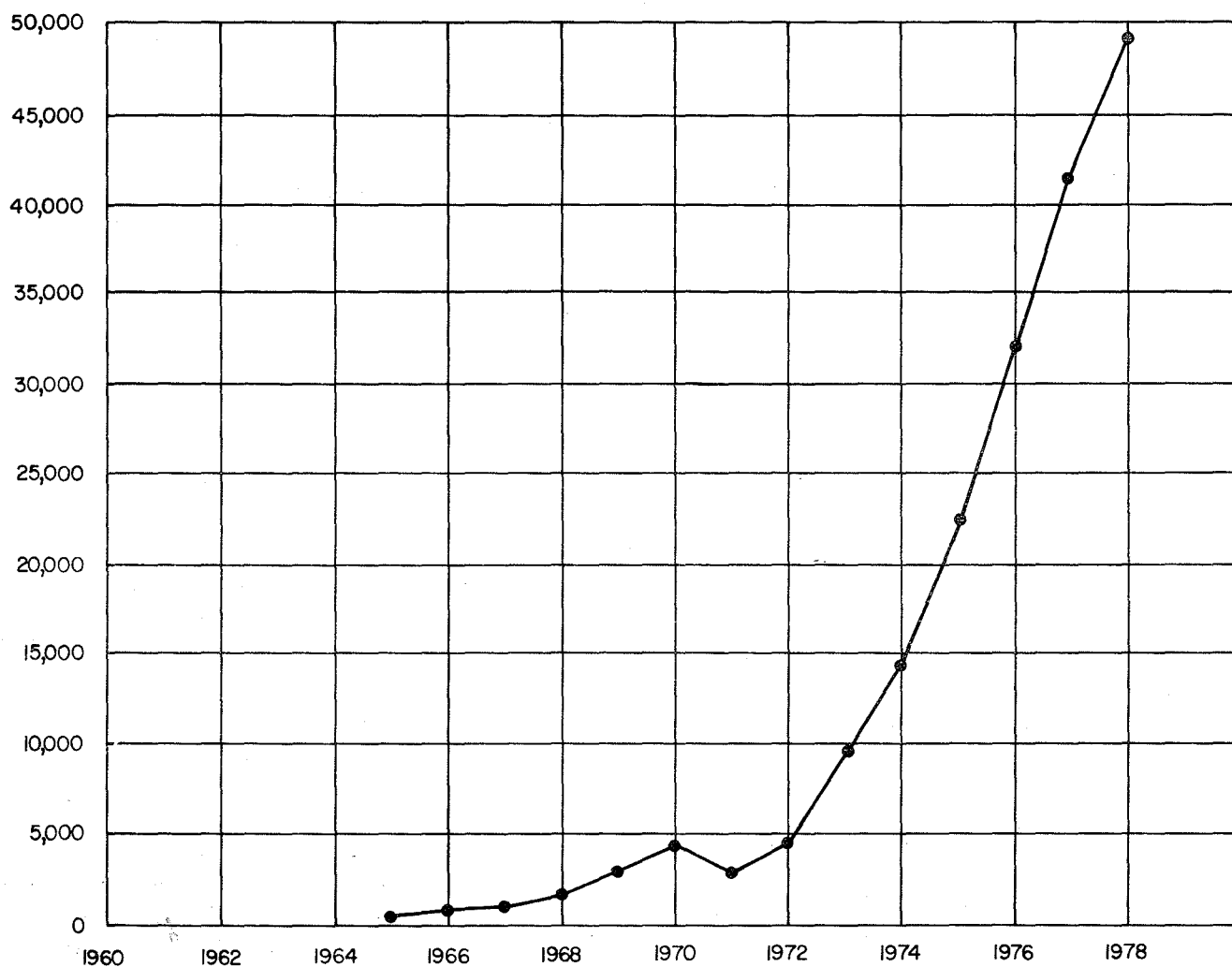


Figure 2

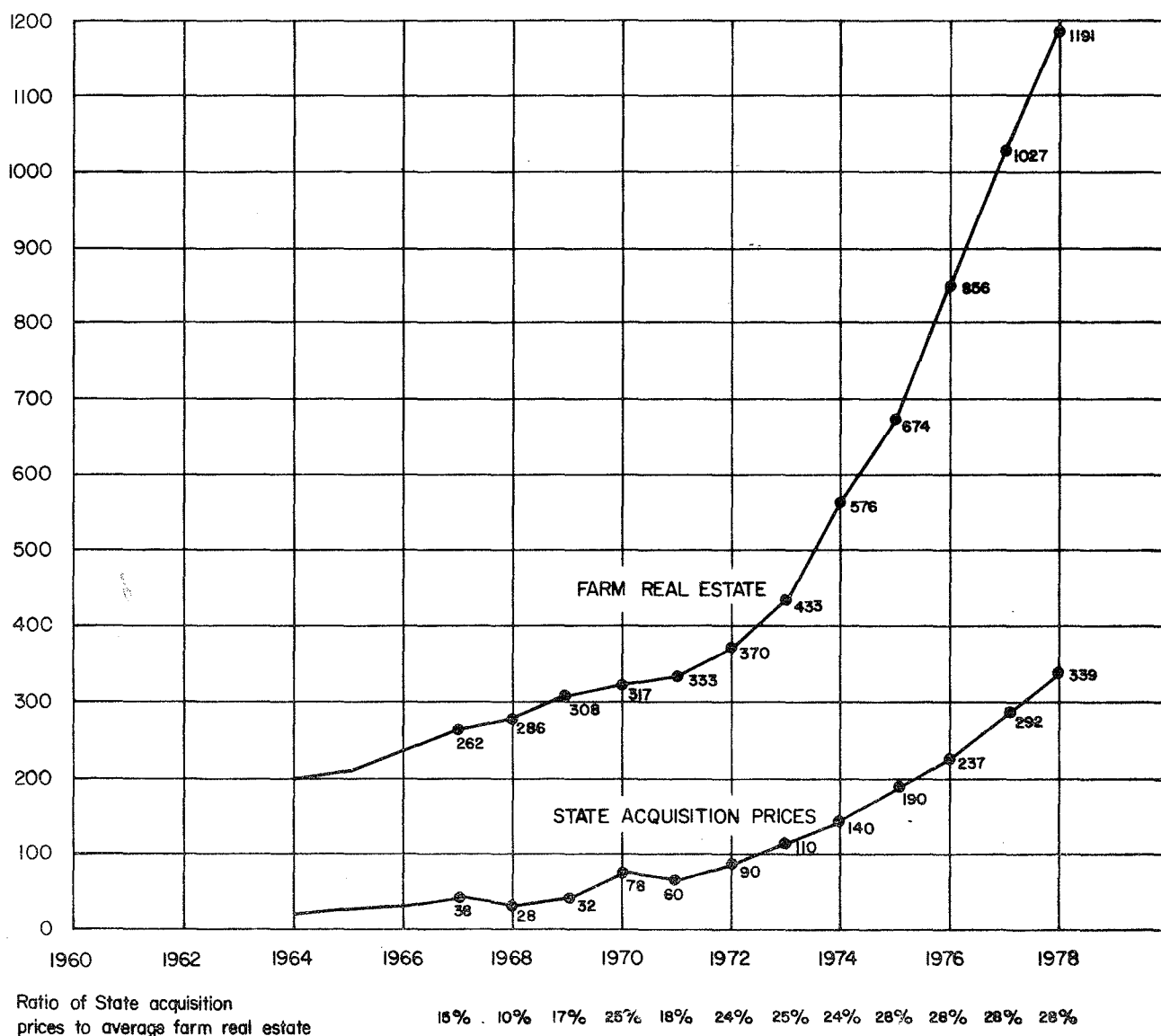
Rising Land Values

At the onset of the acquisition program, the DNR was paying an average of \$18/acre for woodland. Land values have increased in recent years to an average of \$339/acre of woodland in 1978 (Figure 3). In part, the result has been a significant lag in the acquisition program; increased appropriations have not kept pace with land values.

Rising land values can be attributed to inflation and real estate trends throughout Minnesota. Figure 3 shows farmland prices in southeastern Minnesota and corresponding State acquisition prices. The prices paid for State Forest land paralleled the trend in rising land prices.

AVERAGE VALUE PER ACRE OF FARM REAL ESTATE IN SOUTHEAST MINNESOTA & STATE ACQUISITION PRICE

The farm real estate figures are from "The Minnesota Rural Real Estate Market in 1978" (by Raup and Christianson). The State acquisition cost are from DNR records.



The appraisal process the State must follow in purchasing land would indicate the State is a step behind land prices rather than establishing a precedent. The appraisals are based on comparable private land sales. The State must make an offer to the landowner based on the appraised value. The State can negotiate a sale price up to 10% above the appraised value. A negotiator must have reasonable justification to exceed the appraised price. Only about 60% of the State offers for forest land are accepted by landowners.

Competing Land Uses

The most acclaimed competition for land use in the Dorer Memorial Hardwood State Forest is between agriculture and forest. The State has purchased cultivated land along with forested land in some instances. This has been difficult to avoid because of the irregular land use patterns and the prevailing desire of property sellers to sell their total land holdings.

Roughly 8 percent of the State Forest land in the southeast is tillable land. However, the DNR has enlisted the help of the U.S. Soil Conservation Service in preparing management plans for those cultivated areas purchased and the State has leased these to nearby farmers. In accordance with the SCS recommendations, those lands with severe limitations because of steep slopes or periodic flooding have been planted to trees, developed for wildlife habitat or planted to forage species, thereby stabilizing the soil and enhancing water quality.

Minnesota Laws of 1977, Chapter 421, section 13, subd. 5 required all agricultural land in SCS classes I, II, and III, that is over 10 acres in size and is adjacent to a public road or other tillable land be offered for sale or trade. This statute applies to lands purchased after August 1, 1977, with the appropriated 2.76 million dollars. Future legislation is expected to contain similar requirements.

Grazing of forest lands in the southeast was once a widespread practice and considered competitive with forest production. This practice is declining as woodlands are recognized as poor grazing sites. Due to the timber types, soils, slopes, and climate of southeastern Minnesota, the grazing of woodlands is not compatible with good forest management. Grazing compacts the soil, causing erosion because of increased runoff. The compacted soils reduce reproduction and tree growth because of less aeration of the soil.

PART III

FOREST MANAGEMENT

The DNR, Division of Forestry is responsible for the management of State Forest lands. Major responsibilities include: 1) management of timber and other natural resources, 2) forest recreational development, 3) administration of timber sales and leases, 4) reforestation, 5) protection against forest insects and disease, 6) supervision of auxiliary, municipal and school forests, 7) rural fire protection and suppression on public and private lands, and 8) technical assistance to private landowners.

The various aspects of State Forest management are briefly explained in the following sections. The criteria used to identify and assign priority to the forest compartments where lands should be purchased is discussed in conjunction with the management function. Not all functions related to criteria selected for compartment analysis.

1) Management of Timber and Other Natural Resources

Timber

An objective of the Richard J. Dorer Memorial Hardwood State Forest management is the growing, managing, and harvesting of wood to help stabilize the forest industry of southeastern Minnesota. This objective is best accomplished by intensifying forest management of the more productive sites where investment returns are substantial.

The purpose of intensified forest management is to produce increased quantities of higher quality wood. A forester can control the species of trees grown in the stand by planting or favoring a particular species for natural reproduction through cutting techniques. For example, in certain natural hardwood stands, not all the merchantable trees should be removed at once, as is often the case in private timber sales. Some mature trees must remain until new, desirable trees are established in the logged areas. Otherwise weed trees or heavy brush will replace the forest stand.

A tree with a tall, straight trunk with no branches is considered a high quality tree. Proper spacing and pruning techniques are used to improve the quality of wood produced.

High quality wood as well as particular species such as red and white oak, black walnut, and cherry is what the industry is demanding and what will bring the State and counties a substantial forest income.

The productive forest sites have the greater potential for timber management because these forests respond better to forest management practices in producing higher yields.

The better sites are generally those north-facing and east-facing slopes where shaded slopes retain moisture and support lush vegetation. The vegetation has improved and built up the soils on those slopes. The bottom land sites are very productive for growing trees of the bottomland hardwood types. The ridgetop sites are often productive sites. The south-facing and west-facing slopes, on the other hand, are exposed to the sun and experience excessive moisture loss and in many instances are devoid of any woody vegetation.

Criteria for State Forest Compartments

The compartments with the highest number of acres of north-facing and east-facing slopes and bottomlands are given great consideration in establishing the priority compartments.

Watersheds

Watershed management is one of the ever-increasing needs of the area within the Hardwood Forest. It is important not only forest managers but all public and private land managers be conscious of watershed management. The following discussion explains watersheds and management opportunities.

Every watershed is a product of many natural processes, including rock weathering, soil formation, erosion, and biotic succession, all of which have been operating under the impact of climate over the ages. Because of local differences in the climate, the resistance of rock to weathering and such other features as the aspect, length and steepness of slopes, and present and past uses, differences have developed in the character of the plant cover and soil mantle, and in run-off and erosion. In some drainage basins, streams fluctuate but little, either seasonally or annually, and carry negligible quantities of sediment. Others are frequently in violent flood stage and are generally muddy. Still others exhibit run-off and siltation between these extremes. Where such variations are clearly the result of different degrees of control established by nature, there is little watershed management can do to control them.

It has been definitely established, however, that many of the floods and much of the sediment load carried by streams are not of normal proportions in the southeast. They have been magnified by the disturbance of plant cover and soil mantle of the watershed slopes and in valley bottoms.

Watershed management can reduce water discharges and siltation rates, but only to the extent that they have been increased by watershed deterioration. Snake Creek, a case study done in Wabasha County is an example of the potential destruction then restoration of a resource (See attachment).

Water Quality and Watershed Management

Deteriorating water quality is a reliable indicator of improper land use. Water quality in the southeast is primarily impaired by sediment loads above the amount that occurs naturally. Sediment loads increase following vegetation disturbances that result in increased run-off and subsequent soil erosion. Great amounts of sediment cause a murky stream

or river and lower the aesthetic value and attractiveness of water for recreation use. The public is deprived of a suitable streamside environment for various outdoor experiences.

Increased sediment loads in streams are extremely detrimental to the aquatic habitat. Sediment smothers stream-bottom plants and covers eggs and fry in the gravel. The general health and size of the fish are also reduced.

The impact of increased sediment loads is felt many miles downstream from the source. The degrading effect is compounded when small tributary streams all bring their sediment loads together in the main stream.

As water run-off from the land subsides, stream waters slow, depositing their sediment load in the streambed. The stream's capacity to carry water is reduced. The water begins to overflow the banks during heavy rains and flooding becomes ever more frequent.

The flooding hazard increases downstream. Thinking in broad terms, considerable improper land use in Minnesota is causing great hazard to residents of states south along the Mississippi River.

There are economic factors as well as environmental factors to consider. Sediment-laden streams reduce the water storage capacity of reservoirs, thereby increasing the cost of treatment of water withdrawn for municipal use. Silt causes excessive wear on turbines, pumps, and irrigation sprinklers which means an increased expense to water users. Deposition of sediments in rivers increases the need for costly dredging to keep channels open for waterborn transportation.

The water quality can be better maintained by the management of forested areas. Most forested lands occupy the sloped areas and border streams. These forests can have a buffering effect of the water courses. The forest soils can absorb run-off from the hilltop fields, thereby reducing the overland water flow that carries the soil to the streams. Also, water draining from a healthy forest environment provides high-quality water input to streams most of the time.

Criteria for State Forest Compartments

The larger forest areas occurring on sloping, shallow soils are most critical for proper forest management. Those forest areas adjacent to designated trout streams were given particular consideration.

Wildlife

Stability in wildlife populations is dependent on a healthy environment. Wildlife diversity is improved and maintained by manipulating vegetation to provide distribution of a variety of habitats. The existing mixture of pastures, croplands, abandoned fields, fence rows, brush and shrub areas, and woodlands provide diverse habitat. Habitats are improved by managing State Forest lands to provide and sustain timber stand diversity

of the woodland areas. Silvicultural practices can be applied to increase food supplies and nesting conditions for various species of birds and mammals. Scattered openings are beneficial to provide food plots for deer and wild turkey populations, which are important game species in this area.

Scattered food plots are provided, especially standing corn, for winter feeding for deer and wild turkeys. This improves their health and contributes to lower winter mortality rates and higher reproduction.

Standing corn on State land benefits the individual farmer as well as hunters. Feeding pressures in cornfields and apple orchards are reduced lessening the farmer's financial losses. (Some farmers have lost up to \$5,000 annually in crop damages.)

The DNR initiated a program to establish wild turkeys in southeastern Minnesota in the early 1960's. Establishment has been a success, and the first turkey season opened in the spring of 1978 in limited areas. State Forest land is necessary to continue and expand the wild turkey range by providing forest land that will remain undeveloped.

Marsh land occurs relatively infrequently east of the Mississippi River. These areas, which constitute a small part of the forest, should be managed and protected as waterfowl and furbearing animal habitats.

Criteria for State Forest Compartments

Forest areas particularly suited for management of wild turkey, waterfowl, and furbearing animal populations should be made part of State Forest management areas.

2) Forest Recreational Development

Generally, primitive forms of recreation are provided by State Forest areas, including trails, land base for hunting, berry picking, campgrounds, scenic areas, access points to water-related activities, especially fishing and canoeing. These recreational activities are compatible with timber management. All the woodlands in the southeast possess a certain recreational value. The recreational potential, in terms of both development and user capacity, is increased as the amount of public land is increased to provide land base for a variety of recreational uses.

Throughout the forest regions are unique areas, such as those designated scientific and natural areas. These and other areas of particular interest or historical significance are considered when developing areas for recreational use. Public ownership of these areas is desirable and sometimes essential to preserve particular sites for future generations by controlling the land use.

In addition, State Forest lands are valuable buffers for other recreational units that cater to more intense visitor use. A forest buffer improves aesthetic quality and provides protection for other public recreational units by preventing further private development adjacent to the unit. As

a buffer, State Forest land can also disperse excessive amounts of recreational use. Specific kinds of recreation that can be successfully dispersed are trail use and orienteering.

The public can benefit by Forestry administering forest lands adjacent to or in the proximity of other recreational units. Forest management may be demonstrated and interpreted more effectively in the vicinity of areas that already attract and serve the public. This would be part of a major thrust to improve the DNR environmental education and forest management programs.

Criteria for State Forest Compartments

The large forest areas have greatest potential for recreational development, especially if road access is good. Forest areas close to fishing streams and canoe routes were given great consideration. Consideration was given to areas with adjacent established recreational units.

3) Administration of Timber Sales and Leases

The Division of Forestry must conduct the timber sales on State lands. The forester has the responsibility of knowing the amount of wood on State land, its age and condition, and plan for periodic harvest of the wood on a sustained yield basis. This means the amount of wood cut in a short time period must equal the amount growing during the same time period. The sustained yield must also be applied to a particular species.

The forester prepares a cutting plan which specifies the species and the quantity to be harvested. Individual timber sales are drawn up and sold to private loggers. The forester must mark the trees to be cut or mark the boundaries of the sale area and prescribe certain conditions of the harvest operation. The conditions vary and may include site preparation, time of the year for harvest, road layout and design standards, and clean up.

In the Dorner Memorial Hardwood Forest, a forester is also responsible for administering agricultural land leases. He coordinates these leases with the Soil Conservation Service. Other leases include gravel and an occasional residential lease.

4) Reforestation

The Division of Forestry is responsible for managing the forest planting program. This includes operation of State tree nurseries to provide planting stock, determining the area of land in need of reforestation, preparing sites for planting, planning species to be planted, supervising the actual planting, and monitoring the plantation to insure survival.

It is important that harvested lands are put back into forest production immediately.

5) Protection Against Forest Insects and Disease

All forest lands need monitoring to detect any incidence of disease or insect infestations. Many kinds of infestations exist in forests without causing extensive damage. However, certain insects and diseases can wipe out miles of forests in a single year or eliminate an entire species in a mixed forest. It is critical to detect such diseases before they become widespread.

Control measures generally available to a forester are applications of pesticides and removal of infected trees. Silvicultural practices can be used to reduce the risks of infections. Early detection may be the single most important factor for effective control.

6) Supervision of Auxiliary, Municipal and School Forests

Auxiliary forest lands are primarily private forest industry lands under contract with the counties to obtain a tax break for forest production. The Division of Forestry monitors the forest management activities on auxiliary forests including preparation of annual harvest reports.

The Forestry Division assists in the establishment and development of municipal and school forests. Foresters are available to help plant and manage forests and oversee harvest operations. These forests are valuable in promoting forest management and environmental education in rural areas.

7) Rural Fire Protection and Suppression on Public and Private Lands

The Division of Forestry is responsible for controlling wildfires statewide. Foresters must be trained in combating wildfires, special equipment must be maintained and ready, fire detection systems are employed, and forest fire conditions must be monitored. All functions are critical in preventing potential wildfire disasters. When wildlife danger is high, the Division initiates regulatory measures such as burning bans.

Especially in the southeast, Forestry works cooperatively with local fire departments to provide wildfire training to rural firemen and coordinate local fire department procurement of Federal excess large vehicle equipment. Title IV federal funds are administered to local fire departments for purchasing wildfire control equipment.

The Division has cooperative arrangements with federal agencies and Canada for inter-state mobilization of fire fighting crews and wildfire training of personnel.

8) Technical Assistance to Private Landowners

The Division of Forestry administers the Private Forest Management Program (PFM) which provides free technical advice to woodland owners upon request.

Foresters examine private woodland, prepare a management plan according to the landowner objectives, designate timber to be cut, scale or measure the wood cut, and provide market advice and assistance. In addition, planting stock can be purchased from the DNR at cost. Equipment such as planting bars, pruning saws, and tree planters can be borrowed or rented from the DNR.

Foresters administer federal cost-sharing programs available to landowners through the Agricultural Stabilization and Conservation Service offices in most counties. Under the Forest Incentives Program (FIP) and Agricultural Conservation Program (ACP), landowners may share the costs of planting, pruning, thinning, fencing, and site preparation.

Under current fencing laws, Hardwood State Forest land is treated like private land. Foresters administer the equal cost sharing of construction and maintenance of a fence between the properties.

ATTACHMENT I

History of Snake Creek as a Brook Trout Stream

Snake Creek, Wabasha County, is a small, short stream (average width of 5 feet and length of 3½ miles) which flows into McCarthy Lake Wildlife Management Area, which is connected to the Mississippi backwater system. Residents report fishing trout in the 1930's and 1940's. A retired warden reported stocking trout in the 1940's. Snake Creek was probably a native brook trout stream.

The valley was settled and used for agricultural purposes like most valleys in southeastern Minnesota. Many hillsides were logged and grazed and frequency of floods increased.

In 1946, a stream survey by the Minnesota Conservation Department found Snake Creek unsuitable for trout and management was discontinued. At this time, the valley bottom was used for pasture and crops. Only 10% of the stream was shaded, flow was low, and water temperatures became unsuitable for trout. Flooding was common (a high water mark of 10 feet was present) and produced severely eroded banks and stream siltation. Recommendations to improve the stream for trout were to add shade, control erosion, and to restrict grazing and hog wallowing. The final remark was: "There is nothing about this stream to prevent floods from washing out every trout in the stream".

In summary, improper land use had caused the characteristics which made Snake Creek a trout stream to deteriorate enough to eliminate the native brook trout population. A resource had been lost.

In 1968 the Division of Forestry of the Minnesota Conservation Department began acquisition in Snake Valley for inclusion in the Richard J. Dorer Memorial Hardwood State Forest. Practices to decrease flooding were initiated. Land use was improved on State and private land. Eight water detention structures are present on State land and three on adjacent private land. The stream bank is now protected and has greatly recovered from past abuse.

A 1975 DNR-Fisheries stream survey documented the improvement of Snake Creek for trout due to changes in land use and decreased flooding. The reduction of intensive agriculture on the stream bank has increased shade, reduced the high water mark (from 10 to 3 feet), decreased water temperatures to a suitable range for trout, and decreased bank erosion and stream bed siltation.

Brook trout were re-introduced in 1975 and their success is evidence of the increase in stream quality. This population has increased to 50 pounds per acre - a respectable figure for a small brook trout stream - and is still increasing. These trout were seen spawning in the fall of 1976, their first year of maturity. The response of the brook trout population has been dramatic enough to warrant a habitat improvement project to further increase the productivity of Snake Creek. A lost resource has been restored.

C O N C L U S I O N S A N D R E C O M M E N D A T I O N S

of the

SOUTHEASTERN MINNESOTA NATURAL RESOURCES ADVISORY COMMITTEE

...that the pre-eminent issue confronting hardwood forest preservation is the competing land use demands being placed on the resource.

...that the state, private citizens, and local government need to engage in a formal planning process to discuss and establish a long-term resource management plan for the forested area.

...that a successful long-term forest preservation policy requires a mutual, cooperative management program between local government, private landowners, and the State of Minnesota.

...that the field staff of DNR in southeastern Minnesota is too limited to accomplish the management responsibilities they are supposed to achieve.

...that the State of Minnesota needs to shift its emphasis from an almost sole reliance on acquisition to management and development activities.

...that the State needs to develop its policies and hardwood forest preservation program on the principles of:

- limited state ownership, but broad management responsibilities
- significant private ownership, recognizing the key and critical role of individual management responsibilities.
- local government involvement and responsibility in the management process.

...that the DNR prepare a long-range, comprehensive resource management plan for the Richard J. Dorer Memorial Hardwood Forest within the next year.

...that DNR continue its "willing sellers only" acquisition policy.

...that the State of Minnesota continue to exclude "eminent domain" authority for the purposes of state forest acquisition.

...that the purchase/appraisal procedure of the DNR be reviewed to determine areas for improvement and understanding locally.

...that several "special projects" be undertaken by the DNR, including:

- the increase of a "private individual incentive program".
- an accelerated community information and education program
- continue the assistance of the Soil Conservation Service in preparing a "soil conservation" plan for the agricultural component of the forested area.
- identification and marking of private/public boundaries
- assess the fencing needs for publically owned lands and provide funding for installation and maintenance.

...that there be a periodic reassessment of DNR acquisition/development/management plans through a public hearing process.

...that development and attention to operations plan an increasingly important role in the DNR resource management program.

...that a combination of tax incentives, leases/easements, and cost-sharing programs be added through legislation to assist the State's flexibility in managing the Hardwood Forest.

...that Chapter 89.036, Funds to County, be clarified so that townships, counties and school districts are certain that rebated dollars derived through DNR sales and leases are returned in proportion to taxes lost and that the 50/50 formula be changed to a 100% turnback to local units of government. The state should establish a dedication fund to provide a steady annual income to local units of government. Deficits, if any, should be compensated from the general revenue.

...that the State Planning Agency set aside funds from the Minnesota Land Use Planning Grant Program to support county analysis of ordinance and regulations affecting the forested portion of individual counties.

...that the Minnesota Department of Natural Resources should increase the production of northern and southern hardwood trees especially the species of red and white oak to make them available to the public and private sector in the hardwood forest area.

...that if existing nursery traditions limit the propagation of hardwood seedlings, then the state should develop facilities on a site favorable to produce hardwood planting stock.

...that during this next year, acquisition be strictly limited to the fifteen (15) "consolidated blocks" and to only those locations where current "scattered" parcels would be brought together to form a management unit, as identified in the September, 1978, draft of "A Plan for State Forest Acquisition: Richard J. Dorer Memorial Hardwood Forest," but those parcels set in motion as of January 10, 1978, are excluded from the restrictions.

NOTE: The Committee vote on this recommendation was
7 to 5 for approval