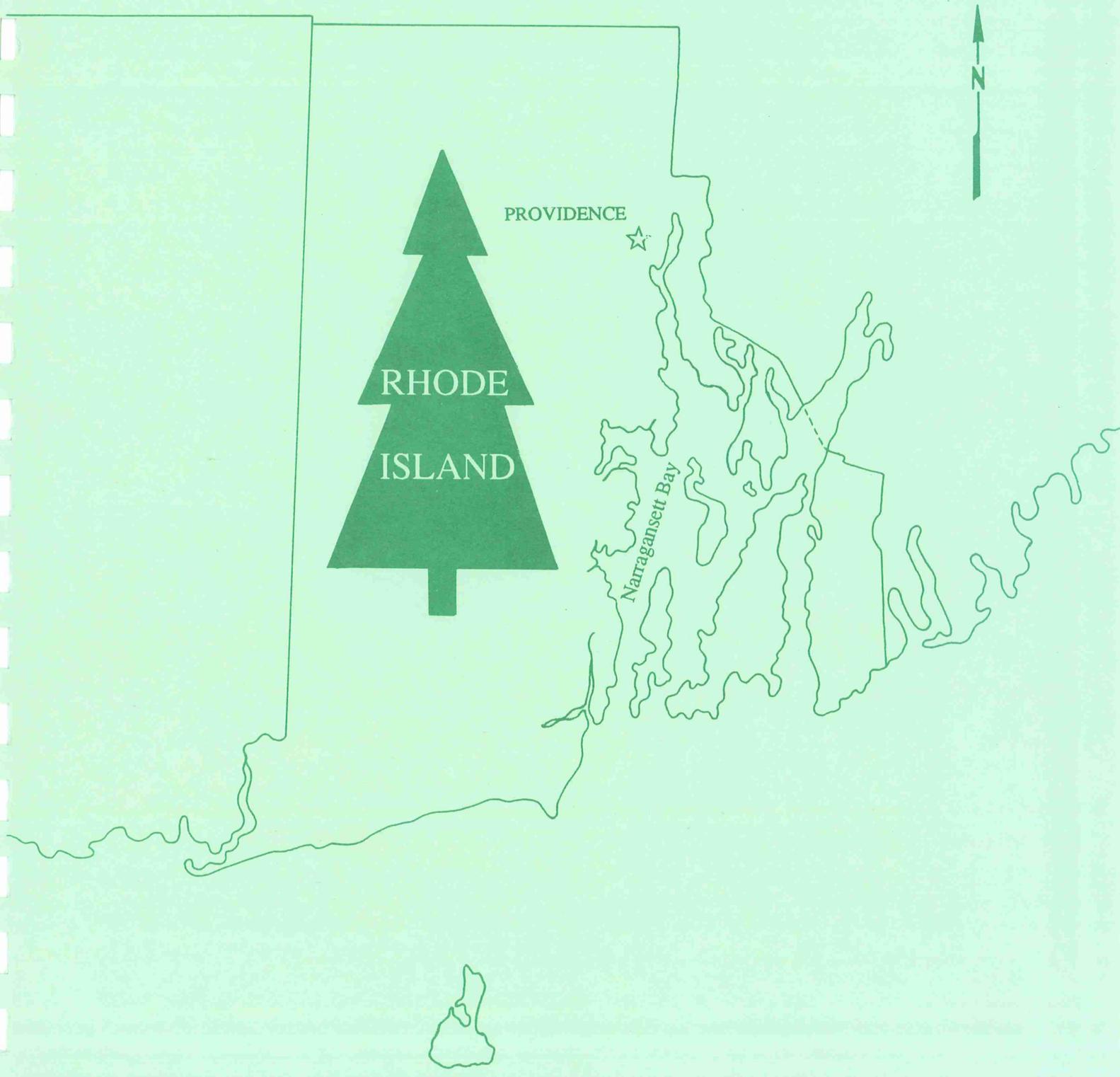


FOREST LEGACY

Needs Assessment





DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20250

December 30, 1993

MEMORANDUM TO: F. DALE ROBERTSON, CHIEF, FS

FROM: Mike Espy
Secretary *Mike Espy*

SUBJECT: Approval of Rhode Island Assessment of Need,
Eligibility Criteria, and Two Forest Legacy
Areas Under the Forest Legacy Program

Pursuant to Section 1217 of Title XII of the Food, Agriculture, Conservation and Trade Act of 1990 (Public Law 101-624:104 stat. 3359), I hereby approve the establishment of a Forest Legacy Program in the State of Rhode Island.

The Assessment of Need approved by the State Lead Agency, the Division of Forest Environment of the Rhode Island Department of Environmental Management, is hereby approved as fulfilling the requirements set forth in the Law and implementation guidelines.

The Eligibility Criteria for forest lands qualifying for the Forest Legacy Program, as set forth in the Rhode Island Assessment of Need, are hereby approved.

The two (2) proposed Forest Legacy Areas, as described in the Rhode Island Assessment of Need, are hereby instituted as approved Forest Legacy Areas. The two (2) areas are: Mainland and East Bay.

RECEIVED

FEB 16 1994

DIVISION OF FOREST ENVIRONMENT

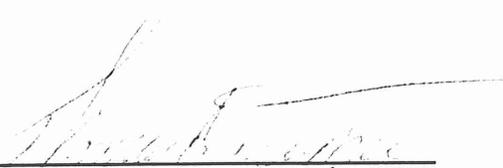
DIVISION of FOREST ENVIRONMENT
1037 HARTFORD PIKE
NORTH SCITUATE, RI 02857

FOREWARD

As long as man has inhabited this area, Rhode Island's forests have provided him a wide variety of resources. Since early times man has been able to count on an adequate supply of fuelwood, wood products, an abundance of game and non-game wildlife species, recreational opportunities, and scenic enjoyment. Today due to an increasing population and demand for land for development, our forests are being fragmented at an alarming rate. Consequently, traditional forest values are in jeopardy.

The U.S. Forest Service, through the Federal Forest Legacy Program, is attempting to preserve traditional forest values through the acquisition of interests in lands threatened by conversion to non-forest uses. The Forest Legacy Needs Assessment for Rhode Island represents Rhode Island's commitment to the preservation of one of our most valued resources, our forests.

As appropriate periodic review of, and revision to this assessment will be made to meet the future needs of the State of Rhode Island.



Thomas Dupree, Chief
Rhode Island DEM
Division of Forest
Environment

Robert Sutton, Chief
Rhode Island DEM
Division of Planning
and Development

8-25-93

(Date)

ACKNOWLEDGEMENTS

This document was prepared by Paul M. Ricard, Wildlife Biologist, under the general supervision of Thomas Dupree, Chief, Division of Forest Environment, with additional direction from the RI Forest Legacy Subcommittee.

Some of the text included in this document was directly excerpted from several Rhode Island State Guide Plan Elements, and various other publications, including the Massachusetts Forest Legacy Needs Assessment (see references). A special debt of gratitude is owed to all those who assisted in the preparation and development of those publications.

The original Geographical Information System (GIS) data maps used in this plan were supplied by George Johnson, Principal Planner, and Mark Vincent Senior Environmental Planner, Rhode Island Division of Planning. Thank-you both.

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FOREST LEGACY NEEDS ASSESSMENT FOR RHODE ISLAND

I. INTRODUCTION

Forests provide a wide range of benefits and values, some of which are easily measured, such as the income derived from timber or fuelwood harvesting, the production of other forest products such as pulpwood, pallet wood, bark mulch, maple syrup, or evergreen boughs, or the quality of wildlife habitat, and the diversity and abundance of both game and non-game species of wildlife. Other values and benefits provided by the forests are not so easily measured, such as aesthetics, the protection and enhancement of water quality, available recreational opportunities, or simply the indescribable feeling one may get just being amongst the trees. Regardless of how you quantify it, forests provide significant values and benefits to society.

Like forested land throughout the region, the traditional values and benefits provided by Rhode Island's forested land are threatened by the conversion of the forests to non-traditional forest uses such as commercial, industrial, and residential development. The reasons for this conversion can be varied and complex, however the results are not; the loss of the forest's benefits and values. This loss has far reaching effects.

The U.S. Forest Service's Forest Legacy Program was initiated to help preserve the traditional values and benefits provided by forests, through the purchase of select property rights from willing landowners, or through outright purchase of the land. Of the two the former is preferred by the Forest Service.

In order to participate in this program each State must document the threat of loss of traditional forest values and benefits, and delineate a Forest Legacy Area which meets specific federal guidelines. This document will assess Rhode Island's need to be certified as a Forest Legacy state, and will propose an area to be designated as a "Forest Legacy Area." Landowners whose property falls wholly, or in part, in the designated Legacy Area may choose to sell any number of select "rights" to the Federal government, thus ensuring the future preservation of the benefits and values both directly and indirectly associated with those rights.

II. BACKGROUND

A. THE FORESTED LAND

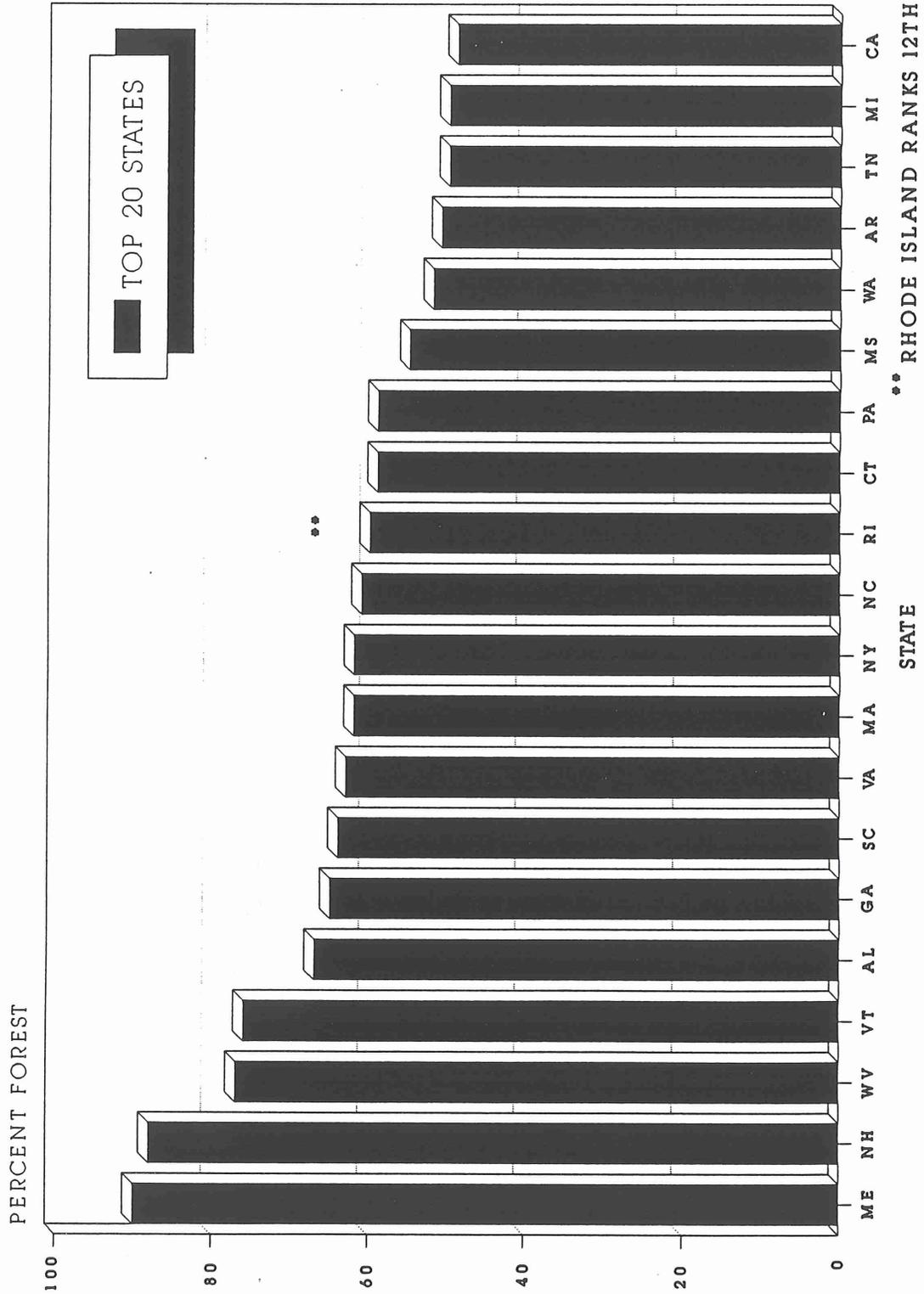
With one of the highest population densities of any state Rhode Island is fortunate to rank twelfth of all fifty states for forest acreage, by percent (Figure 1). The largest proportion of the population resides in or near urban centers. However, analysis of population demographics also show a tremendous population growth in rural communities in the last 20 years (Table 1), particularly within the proposed Forest Legacy Areas (see accompanying text). The "urbanization" of heretofore rural lands resulted in a steady decline in both the amount of undeveloped forested land, and of the average size of the forest tract. As a result of this trend the remaining forested lands in Rhode Island have had increased pressures to provide traditional forest products as well as the more recently recognized values and benefits.

TABLE 1. Population changes in the communities within the proposed Forest Legacy Areas.

<u>Municipality</u>	<u>1970 Census</u>	<u>1990 Census</u>	<u>2010 Forecast</u>	<u>Percent Change</u>
Burrillville	10,087	16,230	19,045	+47.0
Charlestown	2,863	6,478	8,583	+66.6
Coventry	22,947	31,083	35,727	+35.8
Cranston	74,287	76,060	79,647	+6.7
East Greenwich	9,577	11,865	11,613	+17.5
Exeter	3,245	5,461	5,479	+40.8
Foster	2,626	4,316	4,899	+46.4
Glocester	5,160	9,227	11,633	+55.6
Johnston	22,037	26,542	29,702	+25.8
Little Compton	2,385	3,339	3,953	+39.7
Narragansett	7,138	14,985	17,002	+58.0
North Kingstown	29,793	23,786	30,512	+2.4
North Smithfield	9,349	10,497	12,516	+25.3
Richmond	2,625	5,351	7,207	+63.6
Scituate	7,489	9,796	10,414	+28.1
Smithfield	13,468	19,163	21,733	+38.0
South Kingstown	16,913	24,631	23,954	+29.4
Tiverton	12,559	14,312	16,001	+21.5
Westerly	17,248	21,605	22,428	+23.1
West Greenwich	1,841	3,492	4,282	+57.0

Sources: U.S. Bureau of the Census: 1970 and 1990 counts.
R.I. Division of Planning: 2010 projection.

FIGURE 1. Forest acreage, by percent of total land area.
 Facts and figures, American Forest Council, 1991 annual
 statistical report.



1. Historical perspective

The earliest estimate of forest area by county in Rhode Island was made in 1767. At that time 31 percent of the state was forested. In 1908 the State Forest Commissioner estimated that there were 256,000 acres of forest land or 38 percent of the state's total land area. In 1935 the Rhode Island State Bureau of Forestry determined that there were 419,000 acres of forest land or 62 percent of the state.

As these early figures indicate, approximately 70 percent of the state was cleared for agricultural use during the colonial period. By 1935, 31 percent of this farmland was abandoned and permitted to naturally revert to forest land.

Sawmilling is one of the oldest industries in the state. The first water powered sawmills were operating prior to 1700. The introduction of the steam engine in the mid-1800's revolutionized the sawmill industry; however, by this time more than half the state had been cleared for agriculture, depleting available timber supplies. In the 1870's portable steam-operated sawmills were cutting timber at a rate that elicited concern from the state agricultural experiment station. In 1907 Jesse Mowry, the first State Forest Commissioner, stated that "Between the forest fires and the portable sawmills, the valuable pine-oak forest has gradually given place to sprout hardwoods, which do not grow rapidly on our types of soil."

Lumber production in Rhode Island reached its peak of 33 million board feet (MMBF) in 1907, and then declined to a low of 4 MMBF in 1937. Over the last several years lumber production has remained fairly stable at 25 MMBF per year.

2. Recent trends

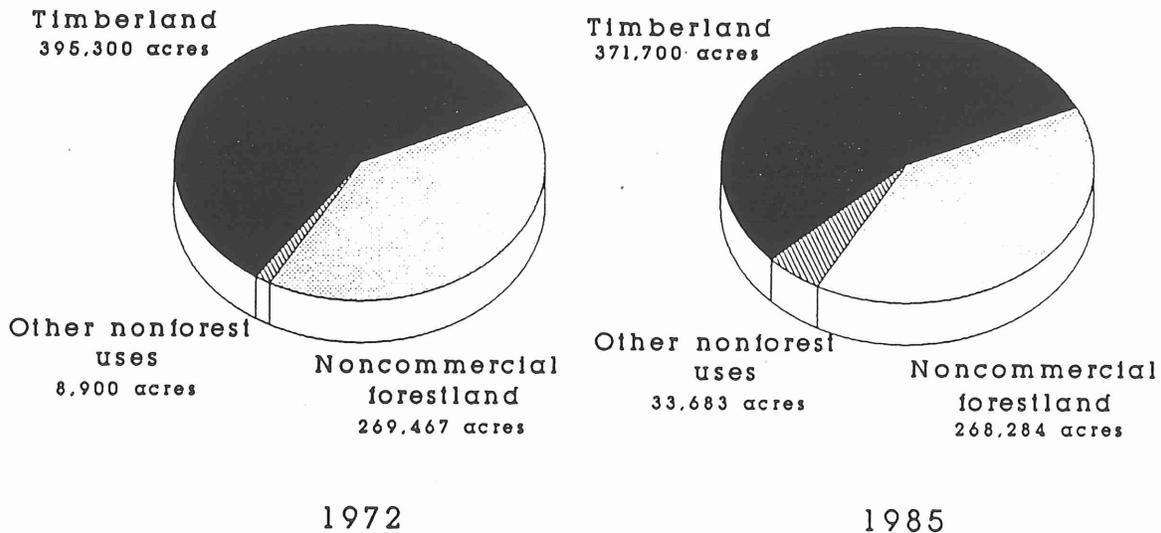
The State of Rhode Island had its forest resources inventoried by the U.S. Forest Service in 1952, 1972, and 1984. In 1952 Rhode Island had 430,000 acres of commercial forest land which comprised 67 percent of the state's total land area. In 1972 Rhode Island's timberland decreased to 395,300 acres or 59 percent of the total land area. In 1984 timberland further decreased to 371,000 acres or 55 percent of the total land area. However, total forested land area remained the same from 1972 to 1984, at roughly 404,800 acres, or 60 percent of the land area (Figure 2).

The difference between the 1972 and 1984 timberland figures is largely due to the conversion of forest land to non-forest uses, primarily residential development. More recent figures indicate that between 1984 and 1990 an additional 3 percent of the forested land was lost due to the lucrative real estate market of the mid to late 1980's.

The reason for the conversion of forested tracts to non-forest uses can be attributed to a variety of factors. In order to capitalize on skyrocketing land values, some landowners opted to sell off houselots from larger parcels that they owned. Rising property taxes, which accompanied the rising land values, created a class of "land poor," people who own large parcels of land but could no longer afford to pay the property taxes. These landowners were forced to sell in order to stay out of debt.

The resulting forest fragmentation and subsequent development has severely impacted the values and benefits provided by Rhode Island's forests.

FIGURE 2. Area of timberland, as a percent of total acreage, 1972 and 1985.



B. THE RESOURCE BASE

The future of Rhode Island's forest resources is related to the composition and ownership of the forested land. In order to preserve, protect, and manage the current resource base, knowledge of the existing forest composition, ownership patterns, and trends is required.

1. Forest composition

In Rhode Island there are seven major forest types: Oak-Hickory, Elm-Ash-Red Maple, Oak-Pine, White Pine-Red Pine,

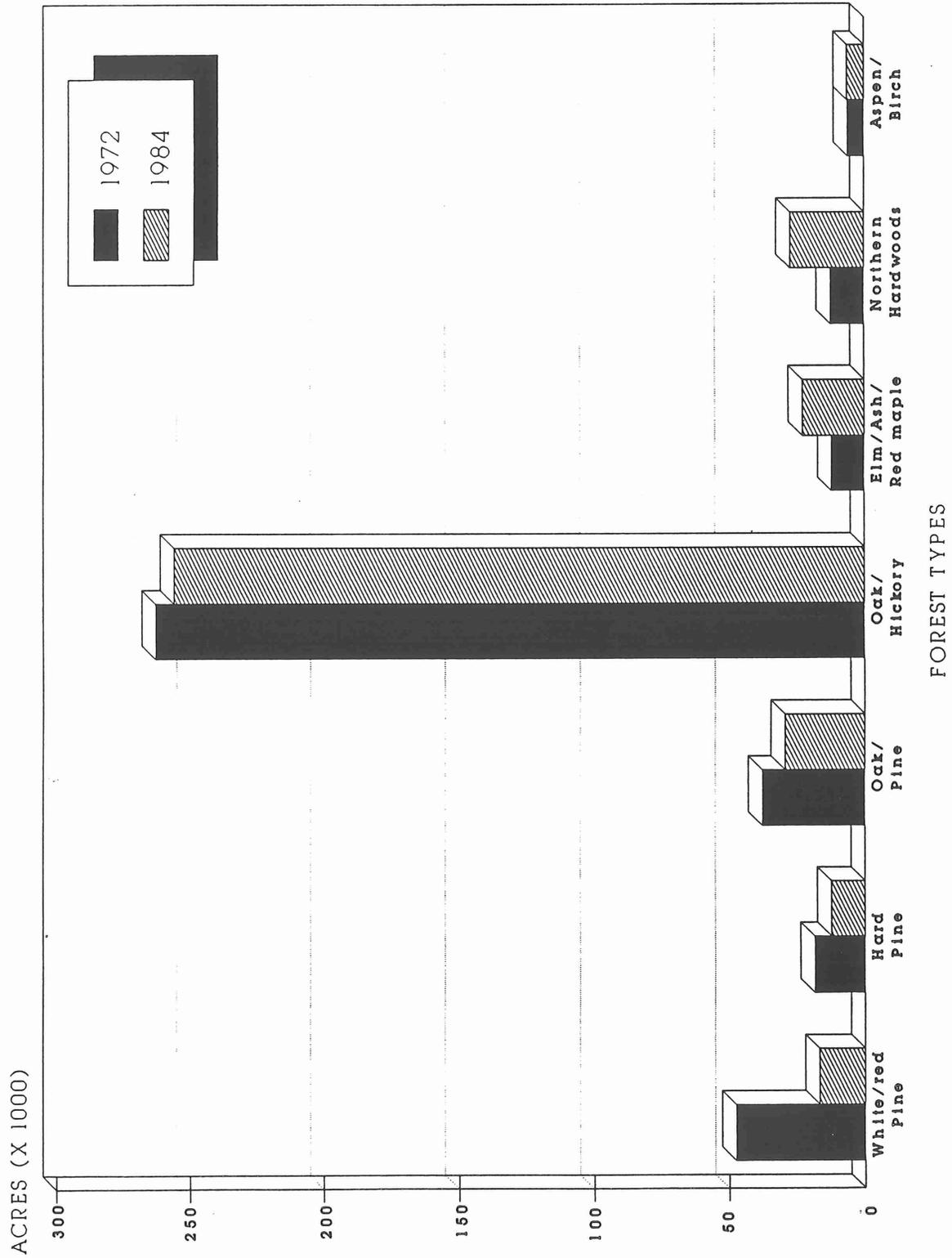
In Rhode Island there are seven major forest types: Oak-Hickory, Elm-Ash-Red Maple, Oak-Pine, White Pine-Red Pine, Pitch Pine, Northern Hardwoods, and Aspen-Birch. The relative abundance and total area of these forest types has changed significantly between the 1972 and 1984 forest inventories. The most significant changes were in the loss of area of forest types that contained Red, White, or Pitch Pine, and in increases in area of forest types that contained Northern Hardwoods (Figure 3).

There are several reasons for this change. During the Arab oil embargo of the mid- 1970's, many households turned to alternative energy sources for home heating needs. Woodstoves became more economical to operate than ever and the Oak forest provided a ready supply of fuelwood. Pine was not the preferred species due to its low heating efficiency and high pitch content. You would expect that the 1984 figures would reflect a diminished abundance of Oak. In fact, although the relative abundance of all forest types which contain oak did decrease, the percentage of Oak within those forest types increased.

Within the Oak/Pine forest type the increase in abundance of Oaks was minor compared to the reduction in abundance of Pine. Why? If you compare timber harvesting figures there is no significant difference in the amount of Oak harvested in 1972 and 1984. Although Oak defoliation and mortality due to gypsy moth infestation from 1981 to 1983 was widespread, it did not significantly affect forest cover types, and cannot account for the difference.

The answer lies in the Pine forest site. Most sites are fairly level and well drained. Most people find Pine stands to be aesthetically pleasing. These factors make Pine forests ideal locations for residential development!

FIGURE 3. Relative abundance of the major forest types in Rhode Island, 1972 and 1984.



2. Forest ownership

In 1972, 92 percent (363,000 acres) of Rhode Island's 395,300 acres of commercial forest land, was privately owned by 14,200 owners, for an average of 25.9 acres/owner. In 1984, 87 percent (323,400 acres) of Rhode Island's 371,700 acres of timberland, were owned by 32,800 private landowners (Figure 4), for an average of 9.9 acres/owner. Most of the increase in number of owners was in the 1-9 acre size class, which increased from 6,700 individuals in 1972, to an astonishing 26,200 in 1984!

Of the southern New England States, Rhode Island has the largest concentration of small ownerships. An estimated 80 percent of the owners have fewer than 10 acres of forest each, and collectively have 60,800 acres of timberland! Of these owners, 91 percent were individuals who owned 81 percent of the commercial forest land in the state.

As can be seen in Figure 5, other important changes in ownership patterns occurred in the other ownership classes. The 7500 private ownerships in the 50 to 499 acre size class in 1972 decreased to 6600 in 1984, a 12 percent reduction.

Publicly owned land increased in 1984 to 44,600 acres (12 percent), from 32,100 acres (8 percent) in 1972. The single largest landowner was the State, with roughly 31,000 acres.

The remaining lands, about 4000 acres, were owned by forest industry. This figure represents less than 1 percent of the total of the forested tracts.

FIGURE 4. Commercial timberland in Rhode Island, by ownership class, 1972 and 1984.

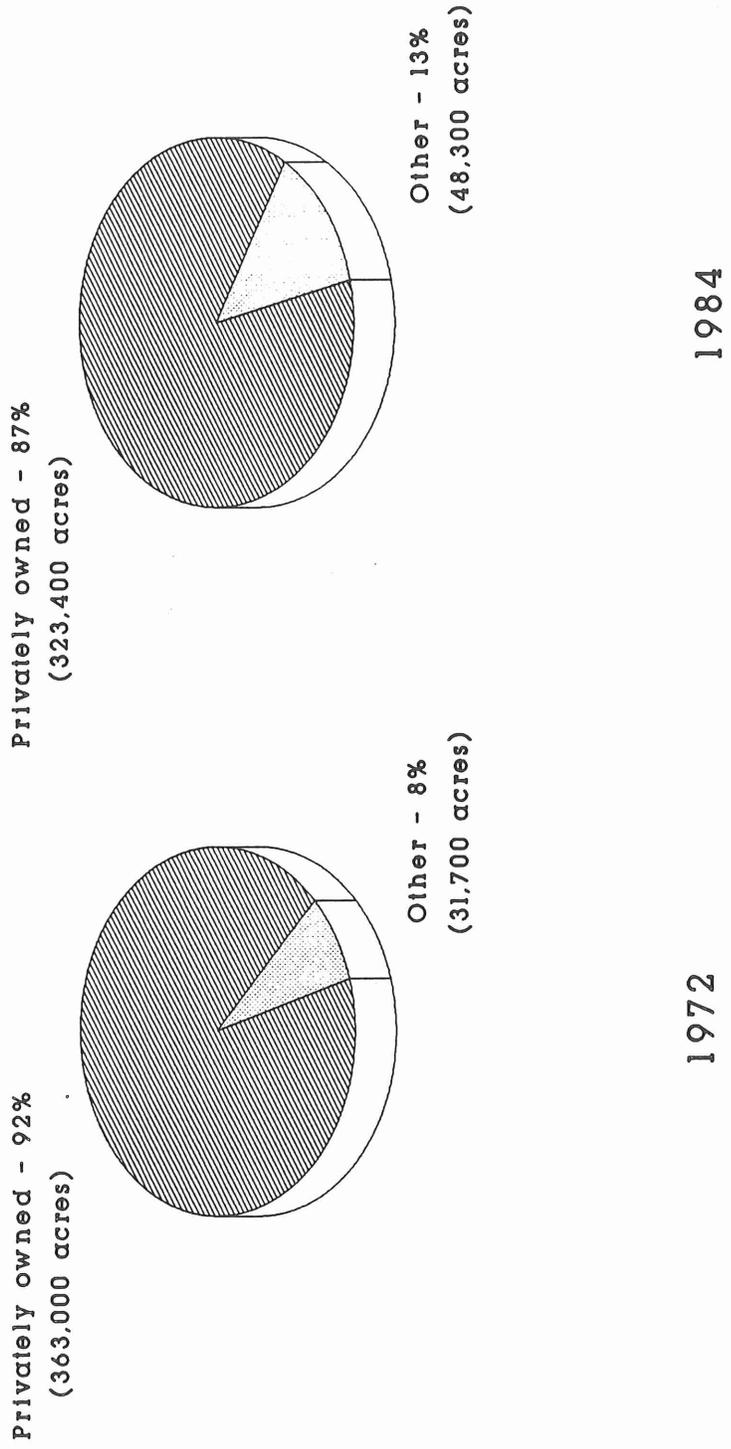
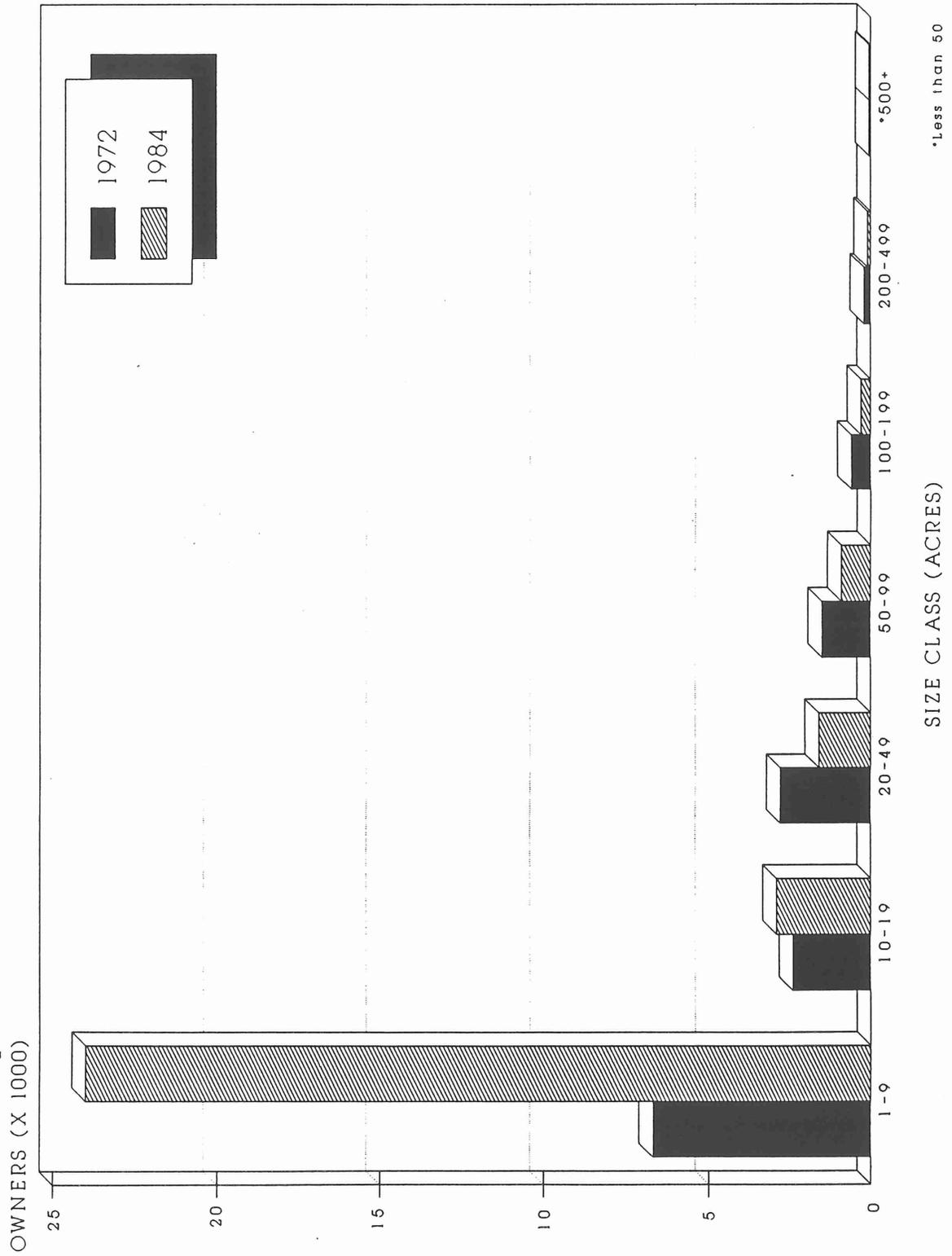


FIGURE 5. Distribution of forested lands in Rhode Island, by size class, 1972 and 1984.



3. Characteristics of owners

Demographic characteristics of individual forest landowners can be related to their diverse abilities to practice forest management, to respond to incentive programs, and to harvest in the future. Many studies have attempted to predict ownership response from owner characteristics such as occupation, age, education, and income. In addition, such variables as residence, date of acquisition, and number of tracts owned have been explored as predictors of harvesting intention. In 1984 Birch conducted an extensive survey of forest landowners throughout New England. The results of that survey provide a lot of information about the characteristics and attitudes of forest landowners.

Thirty-five percent of the individually owned forest land is held by professionals, executives (not including business owners), and white collar workers. These owners own forest land primarily for reasons other than timber production, though they are not generally opposed to timber harvest. This group has the greatest potential to practice forest management on their lands if properly motivated.

Retired owners account for 12 percent of the individual owners, they control 22 percent of the individually owned forest land. Retirees who are not interested in wildlife or general forestry topics may be motivated by programs on taxation, estate planning, and marketing forest products. Information on selecting and working with consulting foresters could also be of interest to this group.

An estimated .3 percent of the individual owners, whose primary occupation is farming, own 3 percent of the individually owned acres of forest land.

Craftsmen and other blue collar workers represent 18 percent of the individual owners, and collectively hold 10 percent of the individually owned timberland. Service workers are 13 percent of the individual owners and have 5 percent of the individually owned timberland. Owners whose occupation is unknown make up the remaining 34 percent of the individual owners; they hold 31 percent of the individually owned timberland.

Other demographic information provides a general description of Rhode Island's individual forest landowners. Half of the individual owners are over 45 years old, and 13 percent are over 65. Over 58 percent of the owners are education beyond high school, while only 5 percent have 8 years or less of formal education. The median income of the individual forest landowner is between \$30,000 and \$50,000 per year. Nearly half of the owners reported spending their first 12 years in a city with over 10,000 population.

C. THE FOREST AS A RESOURCE

Rhode Island's forests provide a wide array of resources. Besides the obvious timber and wood products, our forests are expected to provide recreational opportunities, aesthetic and scenic vistas, and protect critical watersheds of public drinking water supplies. As the amount of forested land dwindles, the remaining tracts are required to meet the increasing demand to satisfy sometimes conflicting interests.

1. Lumber

In 1907 Rhode Island lumber production peaked at 33 million board feet (MMBF) per year. From 1907 lumber production steadily declined, dropping to 4 MMBF per year in 1937 and to 2.5 MMBF per year in 1952. In 1972 lumber production reached a low of 2.4 MMBF per year. Approximately 1.8 MMBF of hardwoods, primarily red oak, and 0.6 MMBF of softwoods were sawn for lumber in 1972.

For the years 1979-1980 DFE estimated that there were 20 MMBF of sawlogs harvested in Rhode Island, worth an estimated \$9 million in product value, and comprised of 15 MMBF of hardwoods and 5 MMBF of softwoods. In 1989, 20 MMBF of sawlogs were harvested. Rhode Island sawmills now saw 25 MMBF of lumber per year with approximately 10 MMBF shipped in from out of state and 5 MMBF of Rhode Island sawtimber sent to out-of-state sawmills.

No doubt some of the difference between the most recent figures and earlier figures is the result of administrative changes in the way timber harvesting and lumber production is reported by the DFE. However the data does suggest that there has been a significant increase in lumber production in recent years.

2. Pulpwood

The U.S. Forest Service surveys determined that 400,000 and 369,000 cubic feet of timber were harvested for pulpwood in 1952 and 1972 respectively. Approximately 60 percent of this timber was hardwood and 40 percent softwood. Most of the pulpwood processed in Rhode Island at that time came from out of state sources, approximately 3.2 million cubic feet per year. At the time of the 1952 and 1972 surveys, the only major pulpwood producer in Rhode Island manufactured building or tar paper. However, this facility is no longer operating in this state.

3. Fuelwood

In 1952, the U.S. Forest Service estimated that 11,700 cords of fuelwood were cut annually in Rhode Island. The

1972 U.S. Forest Service Survey determined that only 7,150 cords of fuelwood were harvested. In 1990 this figure was 75,000 cords, a tenfold increase!

As part of the New England Resource Conservation and Development Fuelwood Study sponsored by the USDA Soil Conservation Service and Economic Research Service, the Division of Forest Environment conducted a fuelwood survey of approximately 300 households during the fall of 1979. This survey determined that fuelwood consumption had increased dramatically since 1972. An estimated 84,000 cords were burned in the winter of 1976-1977, 98,000 cords in 1977-1978, and 110,000 cords in 1978-1979. Heating of homes by fuelwood represents a significant use of a forest product in Rhode Island.

Division of Forest Environment figures, based on "Intent to Cut" filings, estimate that in 1989, 1990, and 1991, there were approximately 90,000, 90,000, and 75,000 cords, respectively, harvested for fuelwood.

4. Christmas Trees

The Division of Forest Environment estimated that 77,300 native grown Christmas trees worth approximately \$700,000 were cut and sold in 1990. There are now about 150 Christmas tree growers in Rhode Island devoting more than 1000 acres of land to Christmas trees. It has been estimated that the Christmas tree business will increase in the future. From 1976 to 1983 membership in the Rhode Island Christmas Tree Growers Association doubled. In 1990 there were 110 registered members and interest in the group continues to increase. The demand for native grown trees exceeds the supply since the native trees are fresher, have less needle drop, and are less susceptible to fire hazards. In addition, many Rhode Islanders enjoy selecting and cutting their own Christmas trees.

5. Other Forest Products

Rhode Island's primary and secondary forest products industry employs approximately 2,000 people and has an estimated value of \$39.8 million per year. The 25 million board feet that are sawn at the state's 33 sawmills have an estimated value of \$7.5 million. In addition the 80,000 cords of fuelwood that were burned in 1990 are worth approximately \$8 million. Other forest products such as posts and pilings have an estimated value of \$4,000 per year. The total annual value of the primary forest products in Rhode Island equals \$20.1 million.

The state's secondary wood-using industry, or those engaged in the manufacturing of plywood, cabinets, furniture, etc., utilized 27 million board feet with a value

of \$18.9 million in 1979. Moreover, 60,000 tons of woodchips worth \$640,000 were also utilized for a total secondary wood manufacturing value of \$19.7 million. It should be noted that many of the state's 58 firms involved with secondary wood manufacturing use wood that was shipped in from out of state.

Other forest products include items such as: pilings, posts, pallets, railroad ties, charcoal, ship timbers, wood chips, and other specialty items. According to the 1952 U.S. Forest Service survey, the amount of growing stock utilized in the production of other forest products amounted to 28 thousand cubic feet or only 2 percent of the annual cut for that year. In 1972, 12,000 cubic feet were utilized for other forest products comprising only one percent of the growing stock removals. Pilings and posts accounted for only 2,000 and 1,000 cubic feet respectively. The remaining 9,000 cubic feet were not broken down by product. Figures for 1984 show little change in either the amount of growing stock utilized for the production of other forest products or its percentage of total stock removals for that purpose. The 1984 survey provides the most recent data available for other forest products. Due to the high demand for fuelwood and sawtimber, the percentage of the available growing stock utilized for other forest products in Rhode Island is not anticipated to increase significantly. As indicated by the small percentage of the growing stock removals (2 percent in 1952 and 1 percent in 1972) that are utilized, other forest products do not constitute a large industry in Rhode Island.

6. Wildlife and fish resources

Among the prominent features of Rhode Island's natural diversity are its native wildlife populations. The state's woodlands, fields, lakes, streams, marshes and coastal waters harbor over 400 species of birds, mammals, fish, reptiles and amphibians, at least during part of their lifecycles.

Excluding the migratory and pelagic birds, there are 283 breeding species of vertebrate animals in the state. It is estimated that approximately 145 or 51 percent of Rhode Island's breeding species are at least partially dependent on forest land to fulfill their habitat requirements. If freshwater fish are excluded, the percentage of wildlife that require forested habitat increases to 59 percent. It should be noted that the required or preferred habitat of many wildlife species includes more than one habitat type. For example, the whitetail deer is an animal of the forest, but optimum deer habitat is considered to be comprised of 50 percent shrub/sapling, 25 percent nonforested land (pasture, old field, agricultural) and 25 percent forested land.

This abundance of wildlife provides many important, if difficult to measure, values to Rhode Islanders. Chief among these are wildlife values of food, hides and other products consumed or used directly by people. Less direct, but equally important is the function of wildlife in supporting recreational pursuits of hunting, fishing, and nature observation--activities enjoyed by between six (hunting) and thirty (nature observation/photography) percent of the population according to the 1985 Participation Survey. Wildlife also play important roles in controlling the populations of the few "nuisance" species such as rodents and mosquitos; in research and education efforts, and as indicators of the quality of the environment. Beyond these tangible benefits are the aesthetic and spiritual values of wildlife, captured and conveyed through art, literature, music and other cultural interpretations.

Although there is a wide variety of wildlife inhabiting the state's forests, only a small percentage are of importance to hunters and trappers. Most of the state's wildlife management efforts are directed towards these game species. Those species that are most actively managed include: White tailed deer, waterfowl, wild turkey, upland gamebirds, snowshoe hare, mourning dove, and rabbit.

Of the fourteen most commonly hunted species in Rhode Island, nine are dependent upon forest habitat. Eight of the eleven furbearers that are trapped in the state have at least some dependence on forest habitat.

Non-game species of wildlife are another important living resource. This group of wildlife represents the largest segment of the state's wildlife population and includes mammals, birds, reptiles, and amphibians. These species are not hunted for food or profit. Since these species are not hunted, they do not generate funds, via license sales and taxes, for wildlife management programs. Therefore, the state directs most of its management efforts toward game species of wildlife.

It is difficult, if not impossible, to place an economic value of non-game wildlife. However, these species, in addition to being a vital part of the ecological system, provide an immeasurable value to those who enjoy observing and studying wildlife in a natural and undisturbed setting. A survey of Rhode Island forest land owners recently determined that 60 percent of the respondent's recreational use of their forest land was for the purpose of observing nature, with a high interest in wildlife. Only 17 percent of the forest land owners used their land for hunting and 16 percent for fishing. This survey clearly indicated the high value that forest land owners have for observing nature.

Threatened and endangered species in Rhode Island are catalogued by the Department of Environmental Management's Natural Heritage Program. A State endangered species is one whose prospects of survival and reproduction are in immediate jeopardy in Rhode Island. A State threatened species may become endangered within the foreseeable future if current trends in habitat loss remain unchanged.

There are 24 species of animals that are listed as either endangered or threatened in Rhode Island. Five of these species, the Cooper's hawk, Black-throated Blue Warbler, Cerulean Warbler, Bobcat, and Buck Moth, depend on forests for their primary habitat. Also, there are 113 species of plants listed as endangered or threatened in Rhode Island, with nearly 1/2 of these dependent on forest habitats.

In addition to those species listed as endangered or threatened, a total of 156 plants and animals are categorized by the Natural Heritage Program as State Special Interest and Special Concern. Forests provide habitat for approximately 40 percent of these rare species.

Over 43,000 people purchase licenses for hunting, fishing, and trapping in Rhode Island each year. These sportsmen contribute approximately \$500,000 annually for fish and wildlife management, through license fees and excise taxes on hunting and fishing equipment.

7. Watershed protection and enhancement

The forest serves as an excellent watershed cover. The protective mantle of woodlands which surrounds streams, ponds, wetlands and reservoirs helps to insure runoff of high quality. The leaf litter associated with the forest floor serves as a soft, absorbent surface to absorb rain or melting snow thus helping to: regulate streamflow, reduce the rate of surface water runoff, prevent soil erosion and sedimentation, and mitigate flooding.

Undisturbed forest soils provide the medium by which precipitation is naturally filtered and stored. Some of the water in this storage area is available for use and transpiration by trees and other plant life. The excess water supply slowly filters through the soil and eventually re-enters the ground and surface water supplies.

The permanent loss of forest cover to other land uses can lead to increased stormwater runoff and contribute to flooding, soil erosion, loss of nutrients from the soil, and increased turbidity in water resources. Precipitation which falls on areas devoid of vegetative cover is not readily absorbed into the soil. Without the protection of the forest floor, soils rapidly become exposed and the porous nature of

the soil will be inhibited. Valuable topsoil and silt can be washed into streams, ponds, wetlands, and reservoirs. The accumulation of silt and increased turbidity associated with siltation adversely affects water quality and the water holding capacity of various water resources. This is of particular concern when the forest is within the bounds of a public drinking water supply watershed.

There are three major drainage basins within the proposed "Mainland" Forest Legacy Area. At least portions of the two southernmost of these basins serve as sources of public drinking water supplies. From north to south they are the Blackstone River basin, the Pawtuxet River basin, and the Pawcatuck River basin, which includes the Wood River and the Pawcatuck River watersheds, as well as several others.

Watersheds within the Pawtuxet River basin comprise the most significant public water supply watershed in Rhode Island. Those located within the proposed Forest Legacy Area are the Scituate Reservoir, Big River Reservoir, and Flat River Reservoir watersheds.

The Scituate Reservoir watershed deserves special consideration. Located in the north central part of Rhode Island, this public water supply resource covers 92.8 square miles, and comprises portions of the communities of Scituate, Foster, Glocester, Johnston, Cranston, and Smithfield. The Providence Water Supply Board (PWSB) is charged with managing this watershed which supplies public drinking water to over half of Rhode Island's population, including the major metropolitan areas of the state.

The amount of land currently reserved as open space within the watershed is 16,600 acres or 28 percent. The PWSB owns and manages 23.93 square miles, or roughly 25 percent of the land in the watershed. This land completely surrounds the Scituate Reservoir and three tributary reservoirs, and is actively managed for the protection of the resource. However, the land is traversed by state and local roads, which reduce the buffering capacity of the forest land to mitigate contamination sources.

The PWSB maintains a pro-active approach to resource protection and has developed its own criteria for the acquisition of critical lands. The designation of a Forest Legacy Area to include the Scituate Reservoir watershed would augment their existing efforts.

The Big River watershed lies in the west-central part of the state, between the Scituate Reservoir and Wood-Pawcatuck River watersheds. It is currently undeveloped as a water supply resource. The eastern portion of the watershed is in a highly populated industrial area, in strict contrast to the predominantly undeveloped western part. In the mid

1960's the state began condemnation and acquisition proceedings against privately owned parcels, with the intent of flooding the area for use as a public drinking supply reservoir. Nearly 9000 acres have been acquired.

While properties within the Big River Reservoir watershed were originally condemned and purchased as part of a project to augment the Scituate Reservoir water supply, serious opposition to the project based on the environmental impacts of the proposal have indefinitely postponed any attempts at further development along those lines. This area still has the potential to fulfill public water supply needs in some fashion, represents a large recreational resource, and is a significant open space site owned by the State.

The Pawcatuck River basin is located in southwestern Rhode Island and portions of southeastern Connecticut. The basin totals 194,000 acres, approximately one-quarter the size of Rhode Island, and encompasses ten Rhode Island and four Connecticut towns, each of which has experienced a tremendous population growth in the last decade. Nevertheless, the land within the basin manages to maintain a rural character.

The basin is drained by seven major rivers and their tributaries, the most significant of which are the Wood River Pawcatuck Rivers. These rivers, in addition to the lakes ponds, wetlands and streams in the basin, serve as important wildlife habitat, recreational resources, and water supplies for public drinking water as well as for agricultural production.

Significant groundwater resources underlie a large portion of the basin. Much of the groundwater is stored in aquifers composed of stratified sand and gravel deposits that are capable of yielding large amounts of water. Groundwater is the sole source of drinking water for the people living within the watershed and supplements supplies beyond the watershed's boundary. In 1988 the U.S. Environmental Protection Agency designated the groundwater resources of the watershed a Sole Source Aquifer. This designation signifies that over 50 percent of the drinking water supply of the area is from groundwater and no reasonable alternate source of drinking water exists. Thus protection of this resource is of utmost importance.

To emphasize this point one need only go back to the spring and summer of 1990. Contaminated groundwater which was the result of leaking underground fuel storage tanks at a gas station in nearby Connecticut, caused the shutdown of two of the Town of Westerly's four public water supply wells. The threat to public health and the inconvenience of the ensuing water use bans caused a public outcry for greater water supply protection within the watershed.

It is fortunate that the State owns large areas of land within this watershed. However, additional measures to protect this sensitive area are highly desirable.

8. Recreational opportunities

Rhode Island offers a wide range of recreational opportunities with a great diversity of facilities. The Plan for Recreation, Conservation and Open Space, which serves as the State Comprehensive Outdoor Recreation Plan (SCORP), determined that roughly 103,000 acres, (one sixth of the state's 671,000 acres) of public and private land is held for recreation, conservation, or open space purposes, such as parks, beaches, water supply areas, wildlife habitat reserves, forest management areas, etc., scattered over 1,649 sites. The state owns 49,490 acres of recreational land. Approximately 57 percent of this land is comprised of 23 forested management areas.

The SCORP identified and analyzed 18 outdoor recreation activities. Ten of these activities can either occur in, or within close proximity to, a forested setting. Snowskiing, horseback riding, and freshwater swimming, in that order, were determined to be the most popular forest recreation activities.

A user survey of the Arcadia Management Area, conducted by the Division of Forest Environment (DFE) between the fall of 1981 and the summer of 1982 determined that approximately 108,000 people visited this area during the course of a year. The DFE believes that recreational usage, particularly canoeing, has been increasing at the Arcadia Management Area over the past few years, although there is no data to substantiate this trend.

User surveys have not been conducted for all of the state management areas and recreational areas, however there is some data regarding the number of people entering the most heavily utilized facilities. The Division of Parks and Recreation maintains records on the number of cars entering certain state management areas (Table 2). The numbers for all sites only reflect the hours between 8:00 a.m.-4:00 p.m. It should be noted that people do enter these sites after these hours, particularly Lincoln Woods. The Lincoln Woods site is most heavily used for picnicking and swimming. Burlingame is most heavily used for camping, accommodating approximately 65,000 campers in 1982. George Washington and Pulaski are utilized for a variety of recreational uses. The Great Swamp is open to hunting and fishing but is also utilized for hiking, canoeing, and bird watching.

The numbers do not reflect a specific type of recreational use but do provide an indication of the total usage of a given facility for the year 1982. The limited

data that is available suggests that these sites are heavily used. Over 425,000 people visited 7 forested state management areas and/or parks in 1982. Although there is no accurate data for the remaining 15 forested management areas and/or parks, it is reasonable to assume that these sites are used by thousands of Rhode Islanders each year for a variety of recreational purposes. Studies have shown that as economic times become more difficult people tend to recreate more frequently in areas closer to home. It is therefore reasonable to assume that during the current poor economy, the numbers of recreational users of all recreational areas, public and private, has increased significantly since the 1982 data, and that the increased pressures upon public lands to provide more recreational opportunities may overwhelm the limited area's ability to provide it.

Even though landowners use their own property for forest recreation they are unwilling to allow the general public access for recreation, even if the users attempt to seek permission of the landowner. The willingness of private landowners to allow the public access to their land for recreation places an additional strain on publicly owned forest lands and increases the need for sound multiple use management on state owned forest lands. Securing easements granting recreational opportunities to the general public on private lands would greatly ease the burden on existing facilities.

For a complete listing of all available recreation facilities within the proposed Forest Legacy Area, or statewide, refer to the maps which accompany the "Ocean State Outdoors: Recreation and Conservation Strategies for Rhode Island," State Guide Plan Element 152.

TABLE 2. Number of cars entering various State owned recreation areas.

1. George Washington	-	9,037
2. Pulaski Park	-	18,758
3. Lincoln Woods	-	178,648
4. Burlingame	-	102,792
5. Great Swamp	-	<u>11,262</u>
Total		320,498

9. Aesthetic and scenic resources

Scenic vistas are being lost across Rhode Island. The pastoral landscapes and striking seascapes which typified a great portion of Rhode Island until quite recently are retreating in the advance of urban development, shoreline construction, and highway improvements.

Scenic roads throughout rural Rhode Island are losing their rural character in large part because of proliferating suburban development and resulting highway improvements needed to support the increasing traffic volumes. Federal standards, which must be adhered to where federal funds are used to upgrade or make safety improvements on roads, improve safety and traffic flow, but can result in loss of the scenic characteristics possessed by many of our rural roads. The increased availability of federal funding for highway improvements since 1983 has enabled Rhode Island to schedule safety improvements and upgrading of many of its older rural routes, some of which had not been improved for decades. Plans for improvement to some roadways have met with public opposition on the basis of the work's effects on the scenic characteristics of the existing road.

A group called "Scenic RI" has been working to identify the location of scenic roads in RI and endorsing their existence through scenic roads legislation. The RIDEM has also identified over 130 noteworthy scenic areas in the state, many located within the proposed Forest Legacy Areas.

10. Cultural resources

Rhode Island has a remarkable legacy of historic and archaeological sites, buildings, districts and landscapes. It is the responsibility of the Rhode Island Historical Preservation Commission to identify and work for the protection of these cultural resources.

Currently there have been over 45,000 historic structures and 1500 archaeological sites identified, and over 10,000 properties listed on the National Register of Historic Places. In addition the Commission has obtained at least 135 historic preservation easements, some short term (20 years), others in perpetuity. Although, when questioned about historic sites most Rhode Islanders would first think of historic Newport or Providence's east side, many historic sites are scattered throughout the state and represent Rhode Island's rich past, including early native American history through historic mill villages.

Many of these sites are located within the proposed Forest Legacy Area, and in most instances it is the juxtaposition of the forest to these historic areas that add to their cultural as well as aesthetic appeal.

11. Soil productivity

The U.S. Forest Service defines "land that has soil capable of growing wood at the rate of 85 cubic feet or more/acre/year, under proper management, in natural stands, and is not in urban or built-up land uses or water," as Prime Forest Land. The Forest Service further defines unique forest lands as "lands which do not qualify as prime forest land on the basis of producing less than 85 cubic feet/acre/year, but are growing sustained yields of specific high value trees or trees capable of producing specialized wood products under a silvicultural system that maintains soil productivity and protects water quality." Since none of the soils found in Rhode Island can meet the 85 cubic feet/acre/year productivity value, the State Forestry Planning Commission adopted a value of 55 cubic feet/acre/year as representing the most productive soils for Red Oak in Rhode Island.

The Rhode Island Forest Resources Management Plan considers soils highly productive if they support the growth of tree species that are rare or uncommon to the State of Rhode Island, such as Black Spruce, Tulip, and Balsam Fir. Lands that contain these soil types are defined in Rhode Island as prime or unique forest lands. Although these sites have not been delineated, the U.S. Department of Agriculture Soil Conservation Service has mapped the soils in this state that would be suitable to support prime and unique forest lands. There are 13 soil series in the state comprising 31 percent of the land area that meet this definition.

12. Geology, topography, and outstanding geologic features

Rhode Island lies at the foothills of the Appalachian mountain range. It is relatively flat, the highest point (Jerimoth Hill) being +812' mean sea level. The last period of glaciation which ended 10,000 to 12,000 years ago, and the affects of erosion and deposition since, have combined to produce the State's current surficial geology, topography, and outstanding geologic features.

Largely unknown to most Rhode Islander's, this state has a long and interesting history concerning its mineral resources. At one time or another the following minerals were mined or quarried for profit in Rhode Island: bog iron, soapstone, coal, granite, limestone, sand, and gravel. The latter four are the only ones still commercially mined, sand and gravel being the most economically important by far. The limestone deposits, more properly referred to as marble, exist as lenses and beds within the Blackstone Series, are worked today in the area known as Limerock, at the north-easternmost area of the Mainland Forest Legacy Area. It is not mined anywhere else in the state due to its scarcity.

Granite is still quarried from a few places, predominantly in the southern end of the Mainland Forest Legacy Area, in the Towns of Westerly, Hopkinton, and Richmond. It is not likely that the mining of this mineral will increase as less expensive building materials are now used as a substitute. However, due to its high quality, measures should be taken to assure protection of nearby forest resources in the event that future demand for granite makes this mineral economically feasible to mine.

Unlike the previously mentioned minerals, sand and gravel mining continues to be a very profitable industry today. Sand and gravel is found throughout the Mainland Forest Legacy Area. Some of these deposits are still mined today. Due to the nature of a mining operation, serious impacts to other forest resources are inevitable. Interests in sand and gravel mineral resources may need to be purchased to protect the associated forest resources.

In addition to the mineral resources found in Rhode Island, there are also a number of outstanding geologic features. Because of the "plucking" action of the last glacier, there are innumerable small ravines, many with cascading brooks, scattered throughout the western portion of the state. Throughout the state there are escarpments of exposed bedrock, quartz veins, and large erratic boulders. Additionally, there is a glacial end moraine (ridge of rocks, clay, and sand) at the southern end of the state which marks the location where the last glacier's advance equaled its melting rate. There are few areas in the country where this geologic feature can be examined.

III. THE FUTURE FOREST

A. FOREST FRAGMENTATION

The overall size and species composition of the Rhode Island forest are becoming far less of a concern for forest planners than the changing pattern of forest ownership and the impacts that this pattern will have on community land use in the future. The division and sale of large forested tracts in southern New England threatens the integral value of forest ecosystems. "Parcelization" of woodland in Rhode Island is corroborated by the results of the Forest Service's landowner surveys of 1972 and 1984. In many cases the fragmentation of forest ownership into smaller holdings precedes conversion of that forestland into non-forest uses. The speed of that conversion is also cause for alarm.

As discussed in the section on forest ownership, the number of forest owners increased dramatically during the 12 year period, while the average size of the forested tract decreased significantly. Rhode Island has the dubious

distinction of having the largest concentration of small ownerships in southern New England.

These small parcels are usually uneconomical to manage and may lead to forced sales to the highest bidder, a developer or speculator with little intent to keep the property in its natural state. Though the tract may not be developed or parcelled immediately, its speculative ownership removes it from the roster of lands managed for future productivity and open space. With shrinking acreage of contiguous ownership, management and productivity of forest lands will be increasingly difficult and less cost-effective. The future of the region's already weak forest products industry is at stake, while clean air/water, recreation, wildlife, and aesthetic values are threatened.

The problems caused by fragmentation of forest land must be addressed. One solution is the formation of landowner organizations that would form and link small parcels to achieve the benefits of larger parcels. Increased aesthetic, recreation, and wildlife benefits would be achieved while improving the economics of scale for timber production. Municipalities that presently own large tracts of forestland can already benefit under this scenario. Local land trusts offer an opportunity for the practice of sustainable forestry. They have the ability to protect land from development, and to join tracts of land to be held under one trust. The main thrust of the Forest Legacy Program is to "reconstitute large forestland acres by purchasing development rights to smaller abutting parcels through conservation easements."

Purchase of conservation easements under the Legacy Program from willing owners of adjacent parcels would protect in perpetuity valuable woodland from conversion to non-forest uses. Moreover, since each easement requires a Forest Stewardship plan that addresses traditional forest uses and public values, private working forests would be insured, concomitantly, protecting environmental values and rural economies.

B. MANAGEMENT POTENTIAL

The potential to manage forestlands is based on a variety of factors, including size of the tract, economics, and landowner tenure, abilities, and attitudes.

When we look at intention to harvest by individual owners, 37 percent, with 63 percent of the timberland owned by individuals, intend to harvest trees from their land in the next 10 years. Owners who intend to harvest trees at sometime in the future but with indefinite plans at present represent an additional 25 percent of the landowners, with 15 percent of the forest land owned by individuals.

Most management practices result in multiple benefits. For instance timber stand improvement work (cuttings and thinnings), usually increase the general health and vigor of the forest stand while potentially yielding income from the sale of firewood or other wood products. Decaying tops and other slash return nutrients into the food chain. Succeeding amounts of sprout growth and successional growth require vast quantities of nutrients, which are taken up through root systems, cleansing stormwater runoff of impurities. The increased structural diversity greatly increases wildlife habitat quality for most species, and is generally considered more aesthetically pleasing than a monotypic environment. These features in turn attract the recreational user for hiking, bird watching and other uses.

1. Timber and wood products

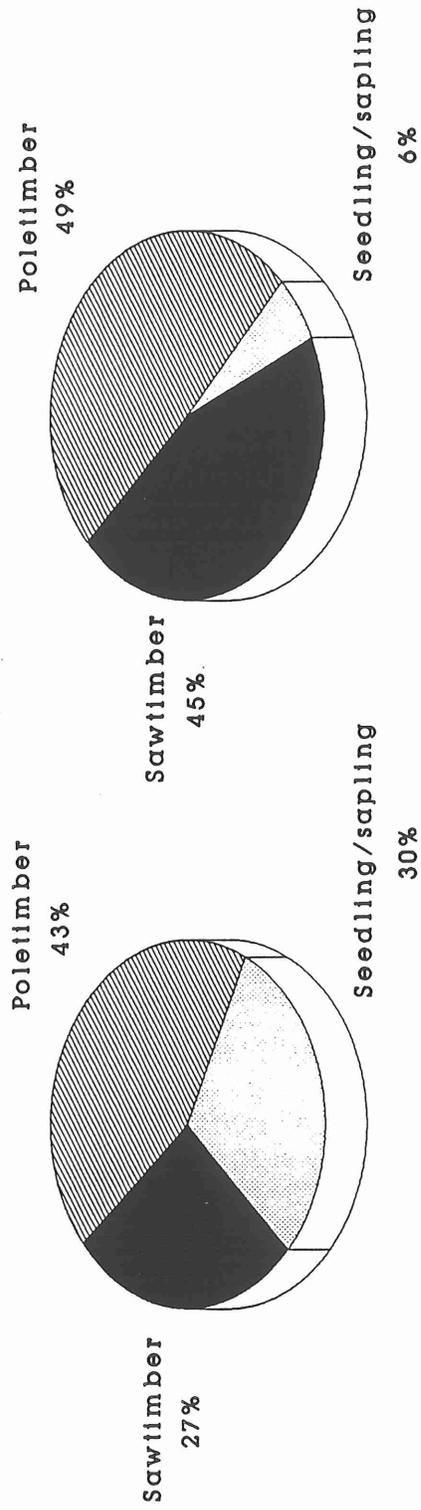
When you compare changes in volume between the 1972 and 1984 forests, although there was a 19 percent increase in net volume of growing stock, and a 36 percent increase in sawtimber, there were disproportionate changes in the softwood and hardwood stocks. Softwoods showed a general but significant decline, while hardwoods increased.

Also of note is a comparison of the stand-size classes of the 1972 and 1984 forests. In 1972 the seedling/sapling size class represented 30 percent of the forested land. In 1984 that figure dropped to an amazingly low 6 percent! Poletimber stand-size class figures remained relatively stable for the two years at 43 percent and 49 percent respectively. On the other hand, sawtimber stands grew in relative abundance from 27 percent to 45 percent, nearly double! (Figure 6).

The 1972 seedling/sapling and poletimber classes obviously matured without comparable harvest of the mature timber. The result is an overmature forest with low reserves of replenishment stock. This condition is significant when considering the general health of the forest.

These figures clearly indicate that Rhode Island forests have a much higher growth rate than removal rate. This is not a desirable condition for proper forest management. If good forest management were being practiced the amount of timber removals would be increased to replace mature slow growing stands with younger more vigorous stands. In addition, timber stand improvement operations should be periodically conducted to thin overstocked stands and to remove diseased, dead, and trees of poor growth form.

FIGURE 6. Area of timberland in Rhode Island by stand size class, 1972 and 1984.



2. Fuelwood

Rhode Island's forests are capable of meeting the current demand for fuelwood. However, it is doubtful that they would if the demand for fuelwood and/or sawtimber increases in the future, mainly due to the lack of active fuelwood management. There could already be some overcutting of fuelwood in localized areas throughout the state.

3. Wildlife

Rhode Island's original rich wildlife heritage was diminished in the mid-nineteenth century by deforestation and exploitation; however, the state is currently enjoying an unexpected resurgence in the population of some wildlife species, mostly game species. Game species utilized for hunting and fishing have long been managed through research, habitat expansion and improvements, and carefully planned reintroductions. Non-game species have received less attention, primarily due to the lack of a source of funding to support management efforts.

The resurgence of wildlife at a time when land development and associated habitat destruction is also highly evident is testimony to the resiliency of many species. However, not all forms of wildlife are thriving; indeed populations of a number of species are in decline, some to the point of being threatened or endangered. Man's activities - insensitive development, environmental pollution, and (illegal) exploitation - often result in habitat fragmentation and loss, and are among the major current threats to the stability and diversity of our wildlife resource.

Despite the apparent increase in most wildlife populations, the potential for even greater wildlife management exists which could yield increased wildlife populations for Rhode Island forests. Only 12 percent of the state's forest land is publicly owned and subject to management by state foresters and/or wildlife biologists. Over 87 percent of the state's forest land is privately owned. Much of this land is not managed for timber or wildlife purposes. With proper management, privately owned forest land can yield increased wildlife populations while the owners obtain an economic gain from the sale of cut timber and/or fuelwood, wood products, hunting leases, etc.

4. Recreation

There are over 40,000 acres of state owned management areas designated for hunting and fishing in Rhode Island. According to the Plan for Recreation, Conservation and Open Space, there are sufficient facilities available to meet both the existing and future hunting and fishing pressure.

However, the Department of Environmental Management feels that existing hunting and fishing pressure may already be a strain on existing state owned facilities. It has been projected that both hunting and fishing will increase significantly between now and the year 2000. The design day for freshwater fishing has been estimated to increase from 7,002 people per day in 1980, to 8,936 in 2000. The design day for hunting is projected to increase almost two fold from 2,680 people per day in 1980 to 5,030 in 2000. A "design day" is an average of the five highest participation days (e.g. days that people hunted or fished) that occurred during the year. These projections clearly indicate increasing hunting and fishing trends. The forest land must be managed accordingly to continue to accommodate these recreational uses.

5. Water quality and quantity

Water quality is strongly correlated with land use. As land use densities become more intensive within any watershed, the surface and ground water quality will become more degraded.

The primary function of a water supply watershed is to collect and convey water that falls or flows within its topographic boundaries to surface impoundments for storage that can be tapped for a drinking supply. The goal of watershed management is to minimize or prevent land uses that can contaminate drinking water. No one would willingly drink water that runs off an oil stained parking lot or a lawn with a failed septic system. However since a reservoir collects and stores water that runs off the land, we could ultimately be drinking water that came in contact with a contamination source.

The ultimate land use within a water supply watershed is forest land. Any conversion of this natural cover type to a more intensive use can disrupt the natural hydrological cycle, increase stormwater runoff, and promote the scouring of stream channels. This in turn leads to erosion and sedimentation problems, the destruction of wildlife habitat, and the degradation of water quality.

The conversion of forest land to residential development also introduces contamination sources that previously did not exist. Septic systems, fertilizers, pesticides, and commonly used hazardous materials such as gasoline, motor oil, and strong cleaning solvents are all threats to contaminate a drinking supply. As the population in a given area increases so does the need for commercial services which further increases the potential risks.

It would be impossible for any entity to convert existing developments back into forest land. It is also

impossible to completely stop the spread of future development. The best one can hope to do is regulate land use within the critical areas and obtain the cooperation of willing landowners to preserve the existing forest cover.

Within the watersheds of the public drinking water supplies, land use regulating measures in the form of local ordinances and tax incentives have been enacted to protect the water supply. Public education of the value of the forest cover type, and active fee simple and conservation easement acquisitions continue the effort to preserve these valuable resources. Additional acquisitions of this nature and continued public education and land use controls are necessary to insure future water quality and quantity.

6. Scenic Resources

Because it is a gradual process involving many subjective factors, the loss of scenic areas is a difficult problem to resolve. We cannot stop the progress which is reshaping the land and redefining our landscape. Perhaps, however, we can sensitize governments and the private sector to the aesthetic values being scarified and stimulate a greater appreciation for retaining echos of our pastoral heritage to "soften the edges" and humanize our modern urban environments.

IV. CURRENT MEASURES TO PROTECT RHODE ISLAND'S FOREST RESOURCE

The protection and preservation of open space and natural areas has become a vital issue facing Rhode Island. The variability in land use and form throughout the region is the result of historic settlement and use patterns, building upon the natural diversity of the environment. The landscape of small mill villages set within a wooded, rural-agricultural countryside is a feature sought by many existing and prospective landowners seeking to "get away to the country." In the last ten years, through both local and statewide referenda, Rhode Islanders have authorized millions of dollars to be spent on the purchase of open space lands for a variety of purposes, from preservation and protection, to shoreline access and recreational development. However in these more financially difficult times it is evident that a variety of means must be incorporated to protect our resources.

Generally speaking, there are three major avenues whereby land development can be controlled, lessening the associated impacts of the development, and hopefully maintaining or enhancing the existing resource(s). These are: 1. the purchase of interests in land ownership, 2. regulation or legislation, and 3. education.

A. INTERESTS IN LAND OWNERSHIP

Interests in land ownership include the outright purchase of land (fee simple), or the acquisition of select interests in the land through easements or purchase of development rights. The single largest purchaser in Rhode Island of both of these types of interests is the Rhode Island Department of Environmental Management (DEM).

DEM, utilizing funds from several sources, including those authorized by the people of Rhode Island in landmark statewide bond issues, actively seeks and considers the purchase of many tracts throughout the state. To that end, DEM has developed its own criteria for the acquisition of available land. DEM concentrates on lands that complement existing state owned parcels, lands that would improve land management efforts, and lands that contain any number of unique or critical resources (for example, lands which contain prime agricultural soil, habitat for endangered species, or trout streams).

1. Resource protection in the 1980's

Through the sale of state bonds in the 1980's, Rhode Islanders have had powerful resources at their disposal for the protection of the state's open space resources. Over \$110 million has been made available since 1986 for open space and recreational land acquisition, and recreational facilities development and renovations, enabling the state and many localities to acquire many threatened and irreplaceable acres of river corridors, salt ponds, wildlife habitat, and farm and forest lands. In the last five years, DEM has added over 6,000 acres of protected public open space and parks to its holdings.

The 1987 state bond (at \$65.2 million dollars, the largest in a series of open space and recreation bonds in the 1980's), was accompanied by the passage of local open space/recreation bonds in 36 of the state's 39 communities. The overwhelming support for these initiatives clearly indicates the commitment the people have for the preservation of our state's resources.

Despite this positive direction, there are some shortfalls. The state's share of the 1987 bond, \$15 million, has already been spent. Local grant money remains, but given the state's current financial situation, it is unlikely that these funds will be distributed through another grant round in the near future.

2. Private Land Trusts

In addition to DEM's land protection efforts, considerable acreage has been acquired or protected by the

state's many private, non-profit land trusts. These land trusts, many of which were started by municipalities and local citizens within the last decade, provide an invaluable service to the preservation of open space. In fact, many landowners would rather sell interest in their land to a land trust than to the DEM.

There are two major statewide organizations and many local private ones in Rhode Island whose primary purpose is the setting aside or protection of land and the wildlife, plant life, and other natural features associated with undeveloped open areas. The statewide groups are the Audubon Society of Rhode Island (ASRI) and The Nature Conservancy (TNC). ASRI has been in continuous operation since 1897 and currently holds or controls about 6,000 acres in 60 separate properties throughout the state. TNC, a national and international organization, opened its Rhode Island field office in 1989, but has been active in the state since it completed its first project in 1967. TNC has been involved with the protection of over 50 properties in cooperation with the Rhode Island Department of Environmental Management since that date. TNC owns or controls about 800 acres in eight wildlife habitat preserves for species which are endangered, threatened, or of concern in Rhode Island.

In addition to these statewide groups, there are now at least 22 local private land trusts functioning in 21 Rhode Island cities and towns. There are also 2 municipal land trusts controlled by city or town governments. These private land trusts, both statewide and local, all accept donations of land or rights in land to be held in perpetuity as open space maintained in as natural or undisturbed state as possible. They also purchase lands on occasions, often using funds from DEM's Open Space grant program, when rare or particularly unique features are at risk and the possibility of a gift of the land or an easement does not exist.

3. Drinking water protection

In order to protect drinking water quality in the state, legislation was passed in the late 1980's establishing a one cent per 100 gallon assessment on water usage. The funds collected through this assessment will be used by water supply boards throughout the state to acquire land and development rights in their watersheds to provide additional protection for the state's water supplies. Watershed management plans have been drawn up to identify priorities for protection.

4. The new decade

The current economic downturn has slowed the state's development binge and reduced land values. While these positive consequences have given the state a chance to

reflect on its successful land saving actions of the preceding years, the slowed economy has tightened land acquisition and management budgets at all levels of government. Much land remains to be added to Rhode Island's open space system. The job is far from being complete.

Federal funding for land acquisition in Rhode Island has unfortunately not kept up with identified needs. The Land and Water Conservation Fund, long a major source of money in Rhode Island, now provides such a small amount (approximately \$200,000 in 1991) that the state distributes the funds to municipalities for recreational development projects rather than towards resource protection. Fish and Wildlife funds continue to contribute significant funding for acquisition of lands to be used for hunting and fishing. However, a significant void remains for the protection of prime forest resources. An active federal presence in this state to preserve forest resource values would not only complement existing efforts, but would fill that void in funding programs to protect the forest as an integral element of the ecosystem.

B. REGULATION/LEGISLATION

There are many regulations and laws, federal, state, and municipal, which protect forest resources. Most all have the common thread of controlling land use and development. Another type of land use control is in the form of programs designed to provide incentives in the form of tax credits or cost share monies to open space landowners willing to enroll their parcels in the programs. The response to these programs has been very favorable in Rhode Island.

In the past the different levels of government have each focused on different issues which may or may not complement one another. Federal programs have been geared towards assisting private landowners in the management of their lands through cost share incentives and resource management planning assistance. Programs such as the Forest Stewardship Program, the Forest Management Program, the Tree Assistance Program, and the Conservation Reserve Protection Program are but a few of the many offered.

Other federal programs, such as the Safe Drinking Water Act of 1974, The Clean Water Act, and others, were intended to protect the health and welfare of the general public, but have had the additional benefit of protecting forest resources. Many of these types of regulations spawned resource specific regulations and laws on both the state and federal level. Two of these which have had a direct impact on resources located within the proposed Mainland Forest Legacy Area are the Sole Source Aquifer Act, and the National Wild and Scenic Rivers Act.

Similarly, state protection of the forested land has been either through laws enacted to protect an environmental resource directly, or through legislation and regulation which regulates land use and therefore mitigates environmental impacts. For instance the Freshwater Wetlands Act targets a specific resource, while the State Comprehensive Land Use Planning Act coordinates land use planning across municipal boundaries, protecting a variety of resources.

Another important piece of legislation useful to the preservation and protection of this state's natural resources is the Farm, Forest, and Open Space Act. This act allows individual towns to assess property taxes at a rate which reflects the current use of the property as open space, should the parcel meet the requirements, as opposed to being assessed at the highest and best use of the land. The tax savings to the individual landowner can be substantial. However, communities are not obligated to enroll a landowner in this program, and in some communities the savings are more substantial than in others.

Unfortunately some efforts at protecting the health and safety of the general public work against the protection and preservation of our forest resources. One of the most noteworthy of these deals with road construction and maintenance.

Scenic roads throughout rural Rhode Island are losing their rural character in large part because of proliferating suburban development and resulting highway improvements, needed to support the increasing traffic volumes. Federal standards, which must be adhered to where federal funds are used to upgrade or make safety improvements on roads, improve safety and traffic flow, but can result in loss of the scenic characteristics possessed by many of our rural roads. The increased availability of federal funding for highway improvements since 1983 has enabled Rhode Island to schedule safety improvements and upgrading of many of its older rural routes, some of which had not been improved for decades. Plans for improvement to some roadways have met with public opposition on the basis of the work's effects on the scenic characteristics of the existing road.

In order to deal with this unique situation, in 1985 an act relating to scenic highways was passed by the state legislature. The bill creates a board to develop standards for scenic highways, and authorizes the Director of Transportation or any municipal legislative body to apply to the board for designation of a road as a scenic highway. This law is a first step in the protection of scenic roads.

Insuring that highway improvements do not destroy the scenic character of roadsides will not, however, guarantee

the protection of our rural landscapes in the absence of local controls on the types and character of the development which is allowed in rural areas. Many open and scenic vistas have been lost as old farm and pasture lands are abandoned and the land reverts to a uniform forest cover type (or to suburban development). Haphazard clearing and leveling of land in anticipation of future development has also diminished the attractiveness of Rhode Island's countryside. With the exception of standard height and bulk requirements and special requirements for historic districts and structures, most local zoning and development controls do not address aesthetic considerations of new development, or control the aesthetics of such activities as land clearing and leveling. Agricultural, woodland and open space zones, buffer requirements, and design specifications are all needed to ensure that new development in rural areas reflects the character and aesthetics of the landscape, and avoids the incongruous character of development which all too often mars the view. The additional protection of conservation easements will assure in perpetuity the scenic qualities associated with our forested resource.

C. EDUCATION.

The education of the general public to the values and benefits derived from the forest resource comes in many forms. From helping their children with their homework, environmentally educational television programs, newspaper articles, or recycling programs at home or in the workplace, it is impossible in this day and age not to be conscious of some of forested lands intrinsic values. However, when the private landowner wants more detailed information on the values of his or her own property, there are several places where he/she can turn.

The University of Rhode Island Cooperative Extension Service has a lot of information, in the forms of fact sheets and helpful professionals, to assist individuals. The Extension service is not capable of providing some of the more detailed work often sought by individuals, such as woodlot assessments, management plans, etc. For these types of services an individual must contact either a private consultant forester, or a state service forester or wildlife biologist employed by the Rhode Island Division of Forest Environment. It is by working with these professionals that many landowners obtain a greater knowledge of the values of the resources that they own.

Another source of education for the private landowner is through state and local non-profit organizations, such as Conservation Land Trusts, or groups formed to protect a specific resource, such as the Wood Pawcatuck Watershed Association. These groups of dedicated people often have valuable information to share with a private landowner.

V. ASSESSMENT OF NEED DEVELOPMENT

On Tuesday, October 1, 1991, Tom Quink, Southern New England Forest Legacy Program Coordinator, made a presentation regarding the Federal Forest Legacy Program (FLP), to the Rhode Island State Stewardship Coordinating Committee (SSCC). Prior to that time the SSCC had been briefed on the Program by Tom Dupree, Chief of the RI Division of Forest Environment. SSCC members were interested in the FLP and invited Mr. Quink to their next meeting for more details of the Program.

After Mr. Quink's presentation and some discussion, the SSCC voted to pursue the matter and formed the Forest Legacy Program Subcommittee. Any member of the SSCC was invited to participate. Actual membership is listed on the inside front cover of RI's Assessment of Need (AON). The goals of the FLP Subcommittee, as authorized by the SSCC (see Appendix H), were 1) to assist the Division of Forest Environment staff member in the development of the AON, 2) to determine and delineate Forest Legacy Areas (FLA), and 3) to identify a system to prioritize areas for acquisition, and 4) to provide a five year estimate of financial need.

On January 21, 1992, the FLP Subcommittee met, reviewed and accepted the draft AON (with modifications), and delineated the FLA boundaries. The draft method for prioritizing acquisitions was refined, and an estimate of financial need was determined.

After making the modifications requested by the Subcommittee, the final draft of the AON was presented to the SSCC at their meeting on Tuesday, April 7, 1992. At that meeting each SSCC member was presented a final AON as well as an Executive Summary of the AON. The SSCC approved the AON and the FLA boundaries as presented, as well as the other items the Subcommittee addressed.

On Wednesday May 6, 1992, the AON was presented to the Governor's Greenspace 2000 Task Force, an advisory committee whose charge is to identify the best remaining open space for preservation, to establish the sweeping goal of an integrated open space system for Rhode Island's future, and to outline specific actions to be taken to safeguard particular types of resources. The Greenspace 2000 Task Force accepted the RI AON and amended their Task Force report to include approval of the Forest Legacy Program as a means to conserve and protect important resources in Rhode Island. The Greenspace 2000 Task Force's report to the state Department of Administration is included as part of the State Comprehensive Outdoor Recreation Plan (SCORP).

The SCORP is a statewide planning document that assesses the status of outdoor recreation issues and

problems, and identifies public and private sector actions to advance the public's opportunities for accessing and enjoying the state's natural legacy of land and water. It also identifies existing and future open space and recreational needs and opportunities, as well as existing and potential measures to meet the identified needs. The plan establishes a policy framework for short and long term problem solving, and includes a five-year Action Agenda of specific capital and non-capital proposals. The Forest Legacy Program was mentioned six times in the SCORP.

Although much of the mention regarding the FLP centered on the ability of the Program to conserve forest resources such as timber and forest recreational opportunities, we know that our forests provide a much broader based resource than that. Therefore the Legacy Program could have had even greater prominence. The SCORP strongly recommended the funding of the Forest Legacy Program as a means to meet the open space and recreational needs of the state.

The AON was then presented to the Department of Environmental Management's Land Acquisition Committee (LAC). The LAC is responsible for coordinating the acquisition of lands and for the determination of funding for all parcels to be held or managed by the Department of Environmental Management (DEM). The LAC enthusiastically accepted the Program as "another tool to be used to conserve Rhode Island's open space and forest resources".

Once the AON was accepted by the State Stewardship Coordinating Committee, the Greenspace 2000 Task Force, the Rhode Island Department of Administration, and the R.I. DEM Land Acquisition Committee, it was sent to the U.S. Forest Service, Northeast Area State and Private Forest Headquarters. Once we received notice that the AON was initially approved by the Forest Service, each member of our Congressional delegation was forwarded a copy.

VI. PROPOSED FOREST LEGACY AREAS

A. METHODOLOGY

Maps of Rhode Island's significant forest tracts, watersheds of public drinking water supplies, public open-space tracts and recreational areas, location of rare, threatened and endangered species and/or their habitats, and significant mineral resources were analyzed (ref. maps Appendix A). Then, utilizing population growth statistics, communities experiencing significant population increases were identified and compared with the forest resource data. Once this information was assimilated, the Forest Legacy Subcommittee met, and keeping in mind the Forest Legacy Program's intent, the need for public involvement, and the

participation of willing landowners, and utilizing the Committee's expertise and personal knowledge of the state's significant resources, the proposed legacy area boundaries were drawn. Appendix B. contains a summary of the important resources to be protected, public benefits to be derived, and entities who may be given monitoring responsibility for an individual parcel.

B. DESCRIPTION OF PROPOSED FOREST LEGACY AREAS

The proposed Rhode Island Forest Legacy Areas include two separate pieces and will be referred to in this document as the "Mainland" and "East Bay" areas. Each of these will be discussed separately. See the attached USGS metric topographic maps (1:100,000) which have the proposed Forest Legacy Areas delineated. For a reference map and detailed boundary descriptions of each of the proposed Legacy Areas refer to Appendix C.

1. Mainland

The northern and western boundaries of the Mainland Legacy Area are delineated by the state boundaries between Rhode Island and the State of Connecticut and the Commonwealth of Massachusetts. This geopolitical boundary was not selected because it was merely a convenient line. Most of Rhode Island's remaining forested tracts are located abutting this boundary, as is a significant amount of public open space. The two adjacent States have forested tracts and open space abutting Rhode Island's border as well. Therefore using these lines as a boundary is consistent with the intent of the Legacy Program to wherever possible recombine significant forest tracts artificially separated by political boundaries.

The southwestern portion of the Mainland Legacy Area includes the watershed of the Wood-Pawcatuck Rivers system, an important public drinking water supply aquifer and recreational and wildlife species resource.

The southern boundary nearly coincides with a drinking water aquifer and includes forested lands located in an area that has seen higher development pressure than any other lands mentioned.

At the southeastern region of the proposed Mainland Legacy Area, lie the towns of South Kingstown and Narragansett. These towns are characterized by clusters of development, particularly near the shoreline and the major roadways, which extend inland towards the University of Rhode Island. The FLA boundary in this area skirts the major developments around the urban centers, but is intended to include significant forested tracts which may add to the character of historic towns such as Peacedale and West

Kingston. The boundary line actually extends to the forested shoreline of Narragansett Bay and includes the Pettaquamscutt River watershed wherever possible. This area has extremely high wildlife and other forest values and faces a severe threat from development pressure. The U.S. Fish and Wildlife Service maintains a wildlife refuge on a portion of the river. Also included within this general area are several historic farms.

As one travels north, FLA boundary turns inland, skirting major development and meets and follows the eastern boundary of the Scituate Reservoir Watershed, the State's single most important public water supply watershed. The boundary line continues running in a northerly direction, intersects the watershed boundary of the Slatersville Reservoir watershed and follows this line northerly to the intersection of State Routes 7 and 104. Following Route 104 north to Route 5 north to the beginning, completes the circuit. These roadways are nearly identical to the watershed boundary of the Slatersville Reservoir.

2. East Bay

The East Bay Legacy Area is located largely within the Town of Tiverton, and to a lesser extent the Town of Little Compton, and includes the last remaining significant forest tracts in this area. This area contains many of the same resources, and is experiencing the same types of development pressures as the Mainland area.

The eastern boundary of this tract corresponds with the state line between Rhode Island and southeastern Massachusetts. Once reaching the shoreline the boundary continues along the north shore of Quicksand Pond to Mullen Hill Road, and continues westward to the intersection of Long Highway where it turns north. The line continues north onto Lake Road and turns westerly onto State Route 179, and continues westerly onto Neck Road and encompasses the Sapowet Management Area. Travelling north from Sapowet Avenue to state Route 77, boundary turns easterly onto State Route 177 then northerly again on Fish Road to Eagleville Road. From Eagleville Road to Stafford Avenue and northerly to the state line and thence to the point of origin. Enclosed within this area several key open space areas, a state management area, and several rare, threatened and endangered species habitats.

C. CRITERIA FOR SELECTION AS A FOREST LEGACY TRACT

In the keeping with the intent of the Forest Legacy Program, that is, to preserve the traditional forest resources from the impacts of such influences as forest fragmentation, and in the spirit of regional uniformity, the Rhode Island Forest Legacy Committee approved the use of the

criteria adopted by the Massachusetts Forest Legacy Committee, in conjunction with the RI DEM Open Space Evaluation Criteria. These models led to the development of an evaluation form (Appendix D) for use by the SSCC, that examines the parcel's natural resources and the landowner's conservation abilities both subjectively and objectively. Considering that some of the proposed Forest Legacy Area for Rhode Island abuts the Massachusetts state boundary, it is hoped that this approach will alleviate "management" conflicts for landowners whose parcels may fall within the two states.

Ideally, nominated Forest Legacy Area tracts would embody multiple and regional public values, be "acquirable" and enjoy public support for that purpose, be threatened with conversion in the short-term, abut existing public open space blocks and corridors, and be delineated by natural boundaries (physiographic, geologic, hydrologic/riparian) and contribute to bio-diversity. Too, the regional values may be expressed as societal benefits:

1. Linkages for recreational values, such as trails, especially along river greenbelts, mountain ridges and parcels which connect existing publicly-owned lands
2. Public access to boating and swimming areas relative to the needs of local population centers and the effects of projected land use change.
3. Public or private drinking water supply protection (ground or surface water) relative to the needs of local population centers and the effects of projected land use change
4. Scenic qualities having their basis in the traditional New England natural and cultural landscape

VII. THE PARCEL ACQUISITION PROCESS

At the state level the acquisition process will begin with an application from a willing landowner. A staff member from the Rhode Island Division of Forest Environment will then conduct a parcel evaluation. The staff member may be accompanied by any one of a variety of state or private entities that may be particularly interested in the specific forest resources that may be associated with the parcel. The evaluation is comprised of both a subjective and objective section so that a final decision will not be solely based on the "highest" scoring parcel (which may be the least threatened with conversion to nonforest use).

The application and evaluation will be forwarded to the Department of Environmental Management (DEM) Land Acquisition Committee (LAC) to determine state interest in the parcel, and potential sources of state cost-share funds. The LAC's findings will be forwarded with the application to the State Stewardship Coordinating Committee (SSCC).

The SSCC will review the application, prioritize the desired interests to be acquired, and then return the application to the LAC. The LAC, cooperatively with the Forest Service, shall then begin negotiations with the landowner. Upon agreement among the landowner, the LAC, and the Forest Service of the estate to be purchased, the appraisal process will begin. The LAC may request Forest Service assistance in the appraisal process, have the parcel appraised by state authorized appraisers, or the landowner may have the parcel appraised as part of the in-kind contribution. Appraisals shall be conducted in accordance with federal appraisal standards. Final approval for acquisition rests with the SSCC.

VIII. FINANCIAL NEED

Estimates of financial need have been based on anticipated participation in the program, and on per acre averages of DEM purchases over the past several years. The first year estimate is intentionally low due to expected lack of program recognition and participation.

Over time, as the merits of the program become known, it is hoped and anticipated that a greater number of landowners will try to enroll. That is the basis for the later estimates, which may end up falling short of the need.

TABLE 3. Five year estimate of financial need for the Forest Legacy Program.

<u>YEAR</u>	--	<u>NEED</u>
1.	--	\$1,000,000
2.	--	\$2,000,000
3.	--	\$2,000,000
4.	--	\$3,000,000
5.	--	<u>\$3,000,000</u>
	Total	\$11,000,000

IX. DOCUMENTATION OF PUBLIC PARTICIPATION

A. GENERAL

Public input for the nomination of the proposed Forest Legacy Areas came in both direct and indirect forms. Directly, public input was heard through the Forest Legacy Subcommittee members, who represented a wide spectrum of interests, and through the public hearing process. Indirectly, public opinion was heard through many mediums--state legislation and regulation, local land use control ordinances, opinion polls, and approval of all manner of measures to preserve open-space and other dwindling resources throughout the state.

Further, public input was involved at the planning stages of many of the references used to produce this document. Many of these publications underwent in-depth public hearings before their adoption and for any amendments or revisions they may have undergone since. Some groups continue to hold public hearings as their plans evolve.

Still others, such as the Arcadia Management Council, whose membership is made up of state officials and an array of user groups, continue to work with the general public on a regular basis.

Another group whose work was relied upon during the compilation of this document is the Governor's "Task Force 2000" which is an advisory committee whose member list includes people from every conceivable federal, state, local, conservation, public interest, and user group. This committee's stated objective is "To provide a plan that sets priorities for acquisition and protection of open space as an integrated system, including greenways along rivers and connecting sites." For more information regarding the committee membership and the goals of this group refer to Appendix E. Appendix F contains an outline of the public participation process as conducted in Rhode Island.

B. MUNICIPAL PARTICIPATION

State law requires that every Rhode Island municipality develop and regularly upgrade a Comprehensive Land Use plan. This document is used as a blueprint for future land use within the town/city. Under the terms of the law the "Comp" plan must not conflict with the guidelines established by the state's series of Guide Plan Elements. The SCORP is one such Guide Plan Element.

In accordance with state law the RI Forest Legacy Program was reviewed by the RI Division of Planning for

consistency with other state plans. A determination was made that the FLP does not conflict with any other state guide plans.

In order to ensure that municipalities are afforded the opportunity to comment on all state guide plans, each element, and revisions thereof, are circulated to each and every municipality within the state for review and comment. Additionally a representative from the RI League of Cities and Towns is a sitting member on the review committee.

Following the comment period and final revision of the document, the SCORP is adopted. All future "Comp" plans must not conflict with the established blueprint. The SCORP document is updated every five years. Municipalities were allowed to review and comment on the Forest Legacy Program and the Rhode Island Assessment of Need through the inclusion of the Forest Legacy Program in the SCORP.

The SCORP document has been officially accepted after review and revision, without adverse comment from any of Rhode Island's thirty-nine cities and towns, with a few exceptions. Calls were received at this office to find out if the individual city or town had lands that were included in the Legacy Area. Those that had, were pleased, although some thought that more of their lands should be included. Those that did not have lands included were disappointed, but understood after the intent of the program was explained.

C. PUBLIC CONCERN/COMMENT

Following the direction recommended by the Forest Service, a public hearing was advertised in the state's major newspaper as well as several of the larger local newspapers that circulate within the Legacy Areas. Additionally several press releases also advertised the upcoming hearing. These advertisements led to many telephone calls requesting additional information regarding the program, which was supplied. However none of the callers expressed any concerns for the program, with one exception. One caller who represented a Forest Conservation Group, and who attended the meeting and reiterated his point there, felt that, although funds for acquisition were good, there would never be enough money from the government nor interest from landowners to meet the needs that the Forest Legacy Program was meant to address. He felt that more had to be done to provide the ways and means for an individual to retain ownership of his/her land, while at the same time conserving the natural resource values of the parcel.

The public hearing was attended by thirty-one individuals. Mr. Quink made a brief presentation of the federal aspect of the Forest Legacy Program, followed by a

short presentation of the state aspect of the program by RI State Forester Tom Dupree. A question and answer session followed. Questions generally concerned procedural aspects of the program, and the affect enrollment in the program would have on a landowner's personal tax situation. One participant, representing the Rhode Island Forest Conservator's Organization, expressed their opinion that while parcel acquisition programs are beneficial, they are inadequate to meet long term forest conservation goals, and that more attention needs to be focused on ensuring that forest landowners can retain ownership of their property. For a copy of the sign-up sheet at the hearing, a list of the questions raised at the hearing and the answers given, and a copy of the hearing minutes, refer to Appendix G.

X. APPENDICES

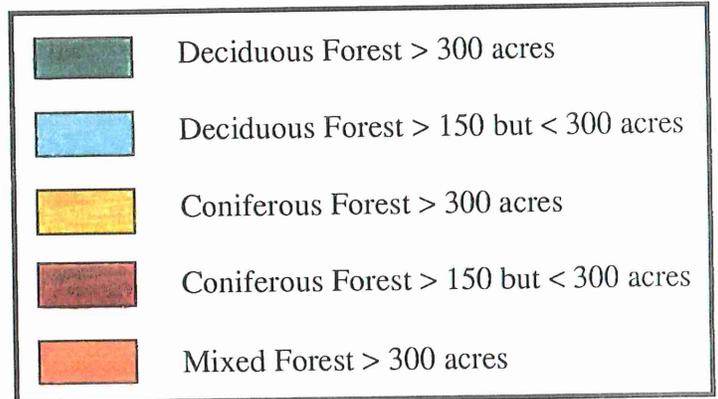
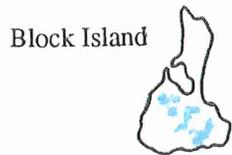
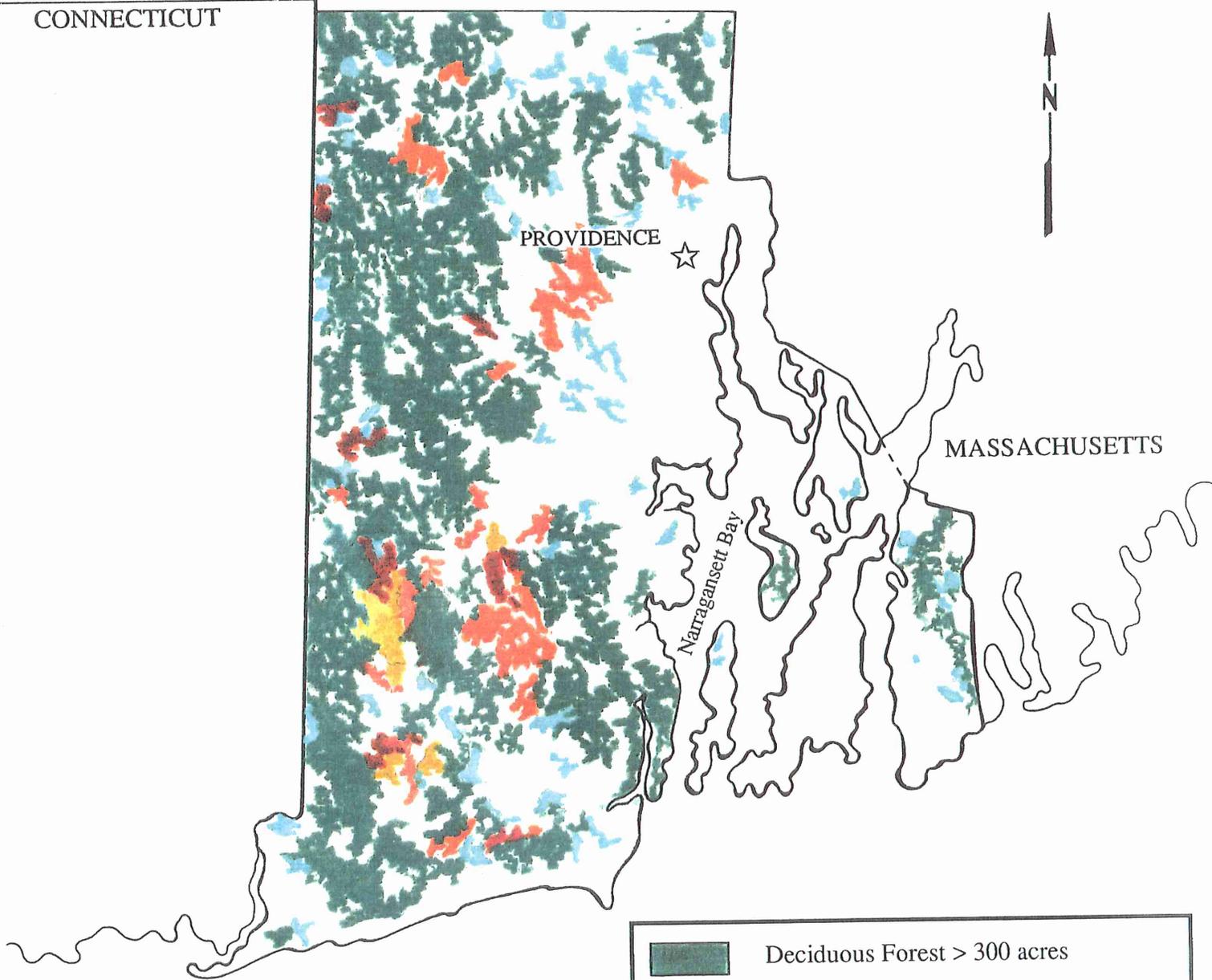
APPENDIX A.

Maps of Select Resources Within the Proposed Forest Legacy
Areas

STATE OF RHODE ISLAND

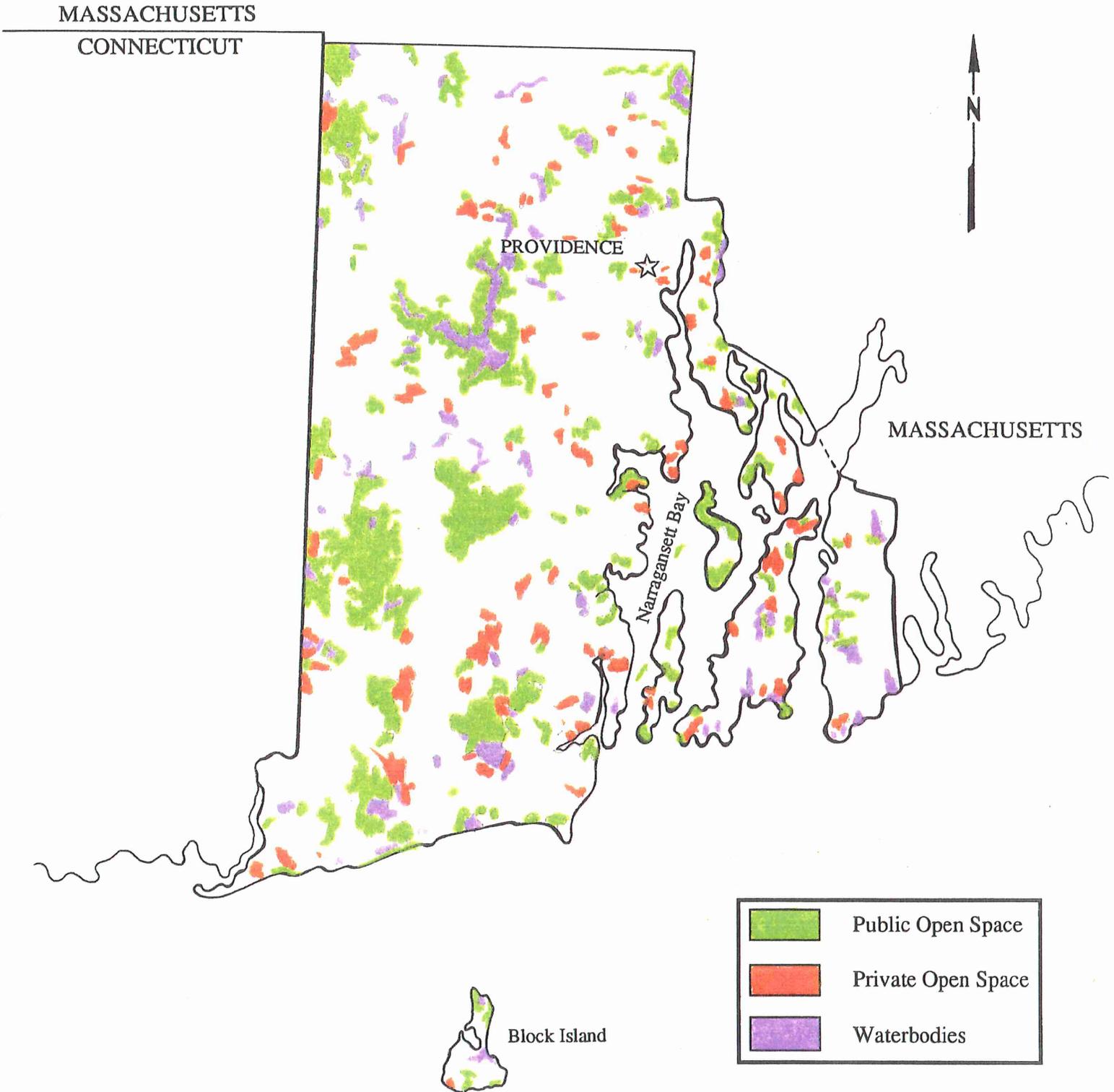
Forest Tracts

MASSACHUSETTS
CONNECTICUT



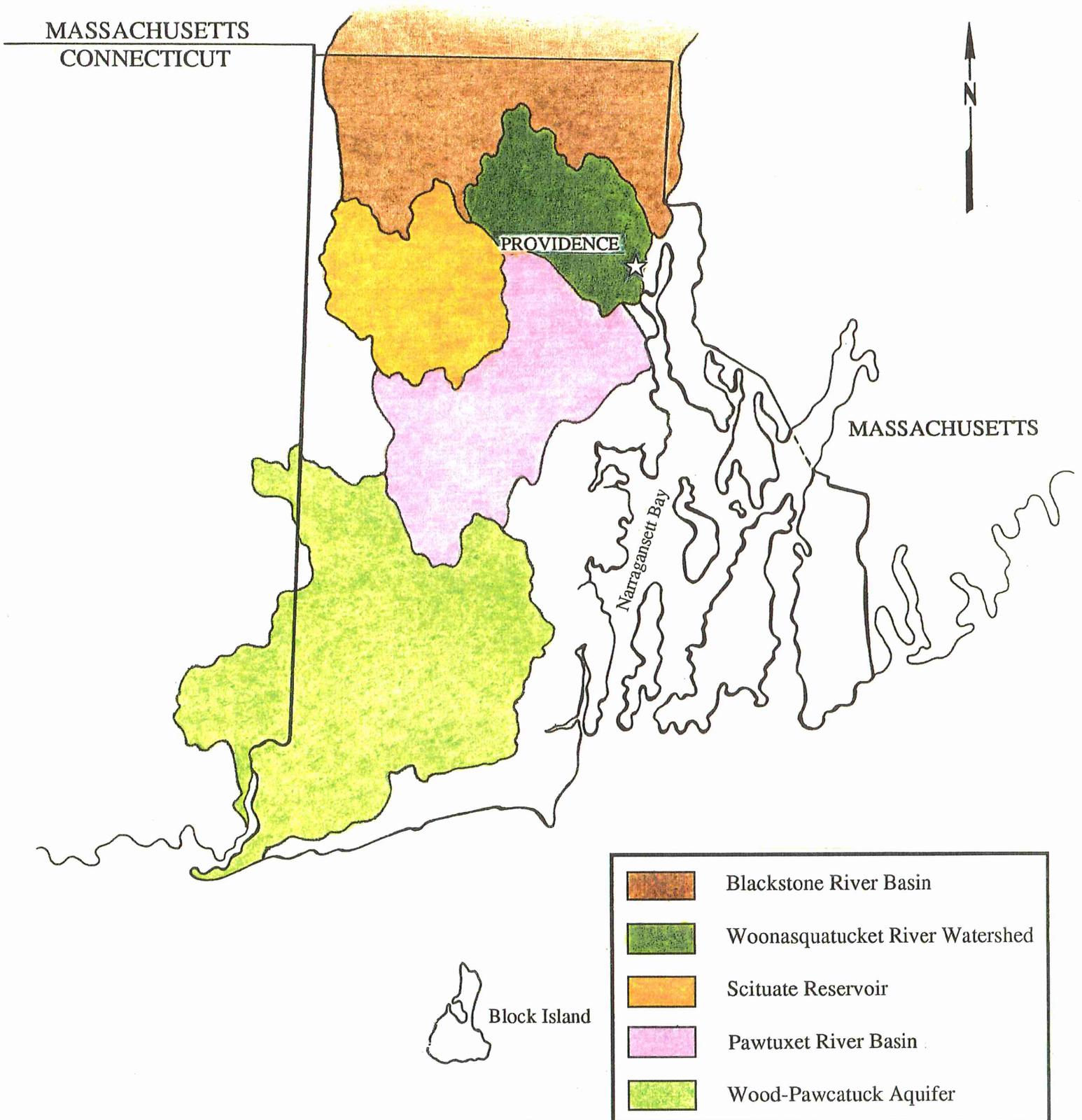
STATE OF RHODE ISLAND

Open Space Inventory



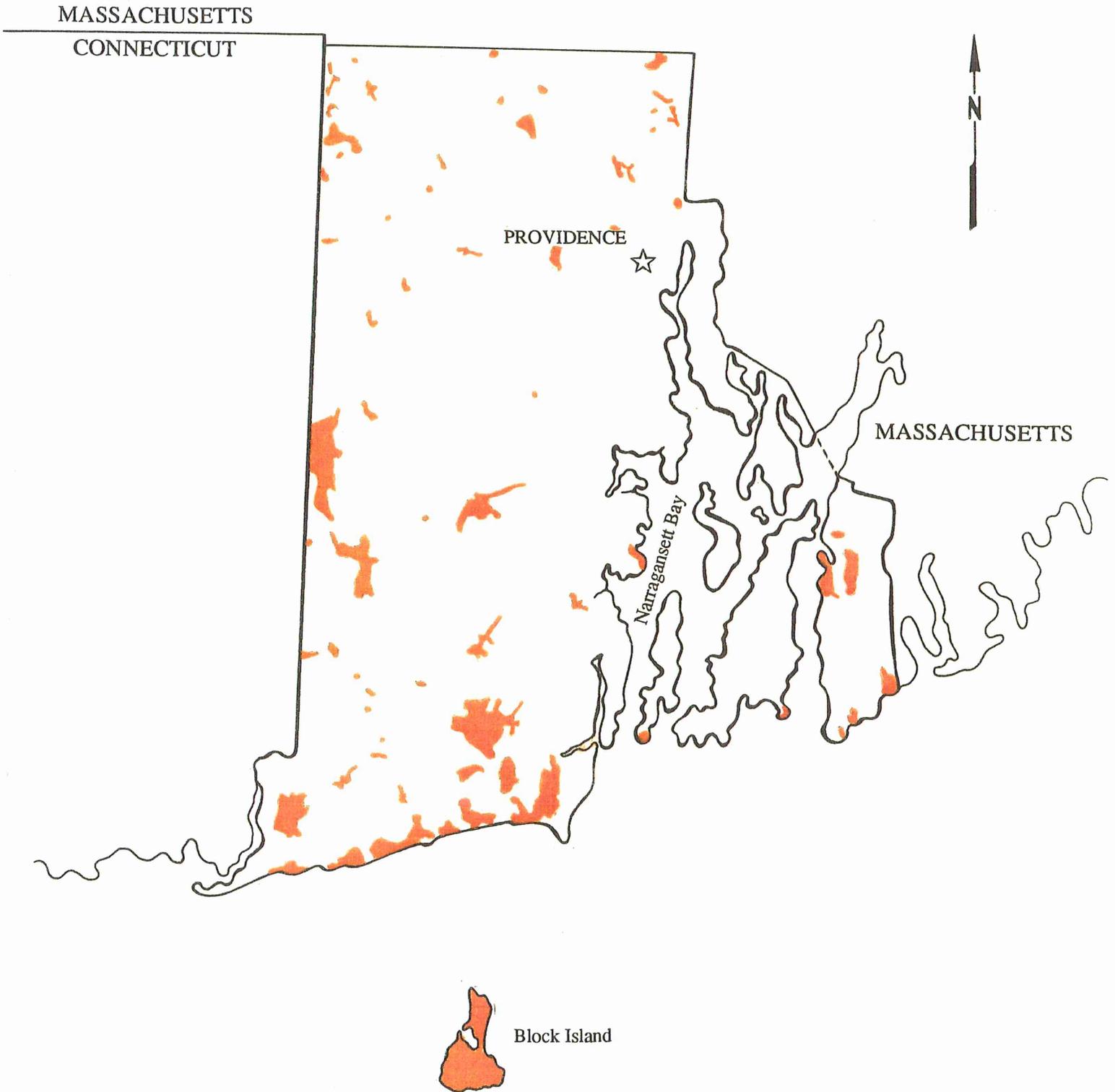
STATE OF RHODE ISLAND

Major Drainage Basins in Proposed Legacy Area



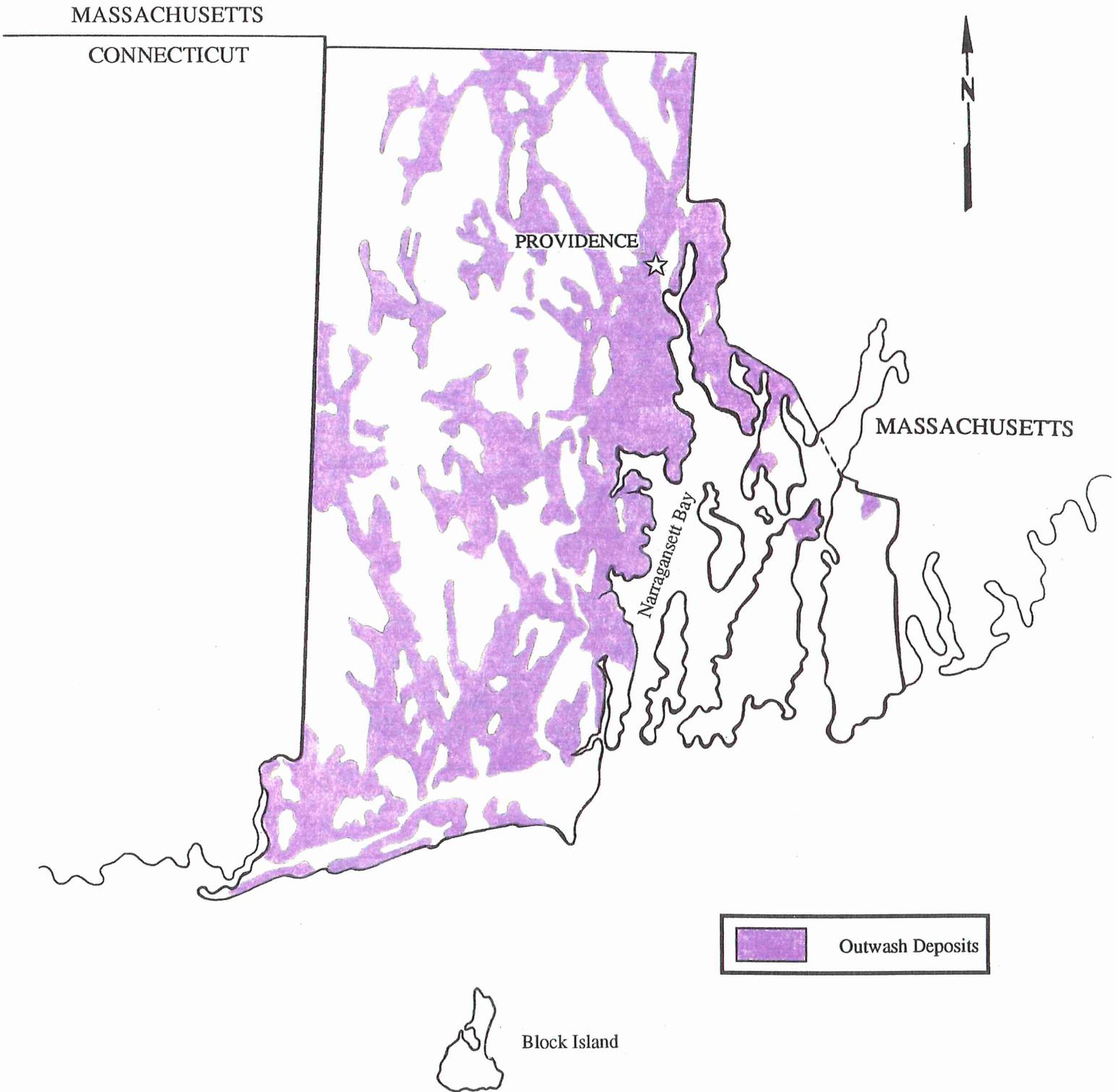
STATE OF RHODE ISLAND

Rare Species



STATE OF RHODE ISLAND

Mineral Resources



APPENDIX B.

Summary of important public resources to be protected in each of the two Forest Legacy Areas

"East Bay - FLA"

1. Description - The "East Bay" proposed area is about 20,000 acres and located in the towns of Tiverton and Little Compton in the southeast corner of the State, east of Narragansett Bay. Its eastern boundary follows the State line between Rhode Island and southeastern Massachusetts. The number of ownerships are in the low hundreds with most of the key areas contained in dozens of larger unfragmented forest tracts. See the attached USGS maps which has the proposed Forest Legacy Area boundary delineated.
2. Summary of important environmental values and how they will be protected - Enclosed within this area are several key open space areas, a state management area, and several rare, threatened, and endangered species habitats. It includes the last remaining significant forest tracts in this portion of the State. Although there is relatively little development now, pressures are increasing from the Newport, Fall River, and Providence expansions. This area comprises a significant portion of the watershed of the only public drinking water supply available to these two communities. Some of the interests that in these lands that will likely be acquired include, but are not limited to: development rights, public access (ROW's), scenic easements, and occasional fee simple acquisitions for tracts with many key resources.
3. Public benefits to be derived -
 - a. Protected habitats for fish and wildlife
 - b. Ground water aquifers
 - c. Rare and endangered species habitat
 - d. Scenic views/aesthetics
 - e. Recreation and recreation access
 - f. Traditional forest uses including vegetative manipulation
 - g. Jobs and economic developments (products and tourism).
4. Potential management responsibility entities - Many options exist in the area. Specific assignments will depend on the specific tracts identified when selection criteria are applied to candidates. They may include: U.S. Fish and Wildlife Service, local towns, DEM - Division of Forest Environment, and a host of other federal, state, and public entities.

"Mainland - FLA"

1. Description - The "Mainland" proposed area encompasses a large portion of the Western and southern portions of the State and is over 250,000 acres in size. Thousands of ownerships averaging less than 100 acres are contained in this area. Its western boundary borders Connecticut for about 40 miles, while the eastern boundary bisects the State about mid-point north to south. See the attached USGS maps which has the proposed Forest Legacy Area boundary delineated.

2. Summary of important environmental values and how they will be protected - Included in this area are most of the State's significant forested land, most of the major State-owned open spaces and other significant inland recreation areas, the watersheds of three (3) public drinking water supplies which service over half the State's population, many historic villages, a number of threatened and endangered species and/or their habitats. Fragmentation and conversion of the forest resource base continues as population growth and development pressure is felt primarily from portions of the eastern megalopolis. Potable water is an essential resource that needs to be protected. Major groundwater aquifers and surface reservoirs are present, such as the Wood-Pawcatuck Rivers System, the Scituate and Slatersville Reservoirs, and the watershed of the Big River Reservoir. Some of the kinds of interests in land that will likely be acquired after a tract by tract analysis in done include, but are not limited to: development rights, public access (ROW's), mineral rights, timber rights, scenic easements, and occasionally fee simple acquisitions for tracts with many key resource values.

3. Public benefits to be derived -
 - a. Potable drinking water
 - b. Protected habitats for fish and wildlife
 - c. Protected rare and endangered species habitat
 - d. Scenic views/aesthetics
 - e. Recreation opportunities and recreation access
 - f. Traditional forest uses including vegetative manipulation for forest products and other values
 - g. Jobs and economic development from forest products and tourism/recreational pursuits

4. Potential management responsibility entities - Many options exist in the area. Specific assignments will depend on the specific tracts identified when selection criteria are applied to candidates. They may include: U.S. Fish and Wildlife Service, DEM - Division of Forest Environment, State and local water supply boards, local town governments, and a host of other public and quasi-public conservation land trusts entities.

APPENDIX C.

Map and Boundary Descriptions of Rhode Island's Proposed Forest Legacy Areas

The Rhode Island Forest Legacy Areas includes all parcels either completely contained, or parcels and any contiguously owned tracts at least partially contained within the area described below. These boundary descriptions are to be used in conjunction with the official maps which are part of the Rhode Island Forest Legacy Needs Assessment. The maps of the Legacy Area boundaries (USGS Topographic, 1:24,000 quadrangle, or USGS Topographic, 1:100,000) are available for public view during regular business hours at the Rhode Island Department of Environmental Management offices of Forest Environment Headquarters, and Planning and Development. Map distances are rounded to the nearest one-tenth mile.

Mainland

A line which begins in the extreme northwest corner of the state of Rhode Island, at the Rhode Island-Connecticut border, and which runs in a southerly direction through the towns of Burrillville, Glocester, Foster, Coventry, West Greenwich, Exeter, Hopkinton, and into the town of Westerly, until reaching the intersection with R.I. Route 78, a total distance of 44.6 miles.

Thence easterly and southerly along R.I. Route 78, continuing as Airport Road, to the intersection of Winnapaug Road, a distance of 5.3 miles.

Thence southerly along Winnapaug Road to the intersection of Shore Road (R.I. Route 1A), a distance of .9 miles.

Thence easterly along Shore Road to the intersection of Noyes Neck Road (aka Nushka Road), a distance of 3.0 miles.

Thence southerly along Noyes Neck Road to the intersection of North Williams Street, a distance of .4 miles.

Thence easterly and southerly along North Williams Street to the intersection of South Williams Street, a distance of .3 miles.

Thence easterly along a straight line extension of South Williams Street to the shore of Quonochontaug Pond, a distance of .1 miles.

Thence following the north shore of Quonochontaug Pond to Schumann Road, a straight line distance of .7 miles.

Thence easterly along Schumann Road to the intersection of Donizetti Road, a distance of .2 miles.

Thence northerly along Donizetti Road to the intersection of Brahms Road, a distance of .5 miles.

Thence easterly along Brahms Road to the intersection of Rossini Road, a distance of .2 miles.

Thence southerly along Rossini Road to the intersection of Gershwin Road, a distance of .2 miles.

Thence following a straight line extension of Gershwin Road in an easterly direction to the shore of Quonochontaug Pond, a distance of .1 miles.

Thence along the shore of Quonochontaug Pond in an easterly direction to a point of intersection on Quonochontaug Road .6 miles more or less, south of the intersection of Quonochontaug Road and R.I. Route 1, a distance of 1.0 miles.

Thence following a line running easterly on a true compass bearing of 68 degrees, more or less, to the intersection of East Beach Road, a distance of .4 miles.

Thence northerly along East Beach Road to the intersection of R.I. Route 1, a distance of .5 miles.

Thence easterly along R.I. Route 1 to the intersection of Hoxie Road, a distance of .2 miles.

Thence southerly along Hoxie Road to a utility pole numbered NECo 12, a distance of .6 miles.

Thence following a line running easterly on a true compass bearing of 68 degrees, more or less, to the shore of Ninigret Pond, a distance of .1 miles.

Thence easterly along the north shore of Ninigret Pond to Colony Road, a straight line distance of 2.6 miles.

Thence northerly along Colony Road to the intersection of Arnolda Road, a distance of .5 miles.

Thence turning westerly and running northerly along Arnolda Road, and continuing on a straight line extension of Arnolda Road to R.I. Route 1, a distance of .7 miles.

Thence easterly along R.I. Route 1 to the intersection of a straight line extension of Green Hill Beach Road, a distance of 3.6 miles.

Thence turning southerly and running along Green Hill Beach Road, continuing across Matunuck Schoolhouse Road, to Carpenter Drive, a distance of 1.3 miles.

Thence turning southeasterly on Carpenter Drive to the intersection of Hilltop Avenue, a distance of .4 miles.

Thence following a true compass bearing of 80 degrees more or less, to the intersection of the property bound of the Trustom Pond National Wildlife Refuge, a distance of .1 miles.

Thence following said property bound southerly, to the shore of Block Island Sound, a distance of .6 miles.

Thence easterly along the shore to the intersection of a line which runs in a true northerly direction to a utility pole numbered NECo 30, on Card's Pond Road, a straight line distance of 1.7 miles.

Thence northerly along said line of intersection to Card's Pond Road, a distance of .4 miles

Thence easterly along Card's Pond Road to a utility pole numbered NECo 12, a distance of .3 miles.

Thence turning northerly (true) and running to the intersection with Matunuck Schoolhouse Road, a distance of .6 miles.

Thence easterly along Matunuck Schoolhouse Road to the intersection with Matunuck Beach Road, a distance of .3 miles.

Thence southerly along Matunuck Beach Road to the intersection of Antique Road, a distance of .4 miles.

Thence running easterly along a straight line extension of Antique Road to the shore of Potter Pond, a distance of .4 miles.

Thence following the shore of Potter Pond northerly to the point of intersection of Perch Cove and R.I. Route 1, a straight line distance of 1.2 miles.

Thence northeasterly along R.I. Route 1 to the intersection of Old Post Road at Brown's Brook, a distance of 2.3 miles.

Thence northerly along Old Post Road to the intersection with South Road, a distance of .6 miles.

Thence northerly along South Road to the intersection of Curtis Corner Road, a distance of 1.6 miles.

Thence turning easterly and following Curtis Corner Road and continuing easterly as Saugatucket Road, to the intersection of Broadrock Road, a total distance of 2.3 miles.

Thence southerly along Broadrock Road to the intersection of Oak Hill Road, a distance of .8 miles.

Thence turning easterly and following a straight line extension of Oak Hill Road to the power transmission line easement, a distance of .2 miles.

Thence turning southerly along the transmission line easement to an angle point, a distance of .4 miles.

Thence following a straight line in a southerly direction from the angle point, to its intersection with Albro Lane .1 miles north of the intersection of Albro Lane and Tower Hill Road, a distance of .1 miles.

Thence southerly along Albro Lane to the intersection with Tower Hill Road, a distance of .1 miles.

Thence easterly and northerly along Tower Hill Road (R.I. Route 1) to the intersection of Hillside Road, a distance of .4 miles.

Thence following a straight line extension of Hillside Road in an easterly direction to the Narragansett/South Kingstown town line, a distance of .5 miles.

Thence northerly along the Narragansett/South Kingstown town line to the Narragansett/North Kingstown town line, a distance of 6.6 miles.

Thence easterly along the Narragansett/North Kingstown town line to the intersection of Boston Neck Road (R.I. Route 1A), a distance of 1.0 miles.

Thence southerly along Boston Neck Road to the intersection of South Pier Road, a distance of .8 miles.

Thence easterly along South Pier Road to the shore of Narragansett Bay, a distance of .9 miles.

Thence northerly along the shoreline to the mouth of Wannuchecomecut Brook, a straight line distance of 4.0 miles.

Thence westerly along the brook to the intersection with Boston Neck Road, a distance of .4 miles.

Thence northerly along Boston Neck Road to the intersection of Annaquatucket Road, a distance of .4 miles.

Thence westerly along Annaquatucket Road to the intersection of Tower Hill Road, a distance of 1.5 miles.

Thence northerly along Tower Hill Road to the intersection of Ten Rod Road (R.I. Route 102), a distance of .4 miles.

Thence northwesterly along Ten Rod Road, continuing as Victory Highway, to the intersection of South County Trail (R.I. Route 2), a distance of 2.3 miles.

Thence northerly along South County Trail to the intersection of Division Road (R.I. Route 401), a distance of 5.5 miles.

Thence westerly along Division Road to the intersection of Crompton Road, a distance of 1.6 miles.

Thence northerly along Crompton Road, continuing as Arnold Road,

to Tiogue Avenue (R.I. Route 3), a distance of 2.8 miles.

Thence westerly along Tiogue Avenue to Sandy Bottom Lane (R.I. Route 33), a distance of .1 miles.

Thence northerly along Sandy Bottom Lane to Main Street, a distance of .6 miles.

Thence easterly along Main Street to Knotty Oak Road (R.I. Route 116), a distance of .1 miles.

Thence northerly along Knotty Oak Road to Main Street, a distance of 2.9 miles.

Thence easterly along Main Street, continuing as Hope Avenue and Hope Road, to Pippin Orchard Road, a distance of 3.1 miles.

Thence northerly on Pippin Orchard Road to Plainfield Pike, (R.I. Route 14), a distance of 3.4 miles.

Thence westerly along Plainfield Pike to Peck Hill Road, a distance of .1 miles.

Thence northerly along Peck Hill Road to the intersection of Byron Randall Road, a distance of .8 miles.

Thence northerly along a straight line which runs from the intersection of Byron Randall Road and Peck Hill Road, over the crest of Pine Hill to Bishop Road a distance of 1.4 miles.

Thence northwesterly along Bishop Road to Hartford Avenue (R.I. Route 6), a distance of .9 miles.

Thence westerly along Hartford Avenue to Hopkins Avenue, a distance of .2 miles.

Thence northerly along Hopkins Avenue to Winsor Road, a distance of 1.3 miles.

Thence westerly along Winsor Road to Steere Road, a distance of .5 miles.

Thence northerly along Steere Road to Snake Hill Road, a distance of .6 miles.

Thence westerly along Snake Hill Road to Sawmill Road, a distance of 1.9 miles.

Thence northerly along Sawmill Road to Putnam Pike (R.I. Route 44), a distance of 1.1 miles.

Thence westerly along Putnam Pike to Farnum Road, a distance of .7 miles.

Thence northeasterly along Farnum Road to Jim Evans Road, a distance of 1.3 miles.

Thence southeasterly along Jim Evans Road to Tarklin Road, a distance of .6 miles.

Thence northerly along Tarklin Road to Mann School Road, a distance of .7 miles.

Thence southeasterly along Mann School Road to Burlingame Road, a distance of .3 miles.

Thence northeasterly along Burlingame Road to Log Road, a distance of 1.6 miles.

Thence southerly along Log Road to Old Forge Road, a distance of .4 miles.

Thence northeasterly along Old Forge Road to Farnum Pike (R.I. Routes 104 and 5), a distance of .5 miles.

Thence northwesterly along Farnum Pike to Douglas Pike (R.I. Route 7), a distance of 1.3 miles.

Thence southeasterly along Douglas Pike to Providence Pike (R.I. Route 5), a distance of .8 miles.

Thence northerly along Providence Pike to the Rhode Island/Massachusetts State line, a distance of 6.3 miles.

Thence westerly along the Rhode Island/Massachusetts State line to the point of beginning, a distance of 10.6 miles.

East Bay

A line which begins at the easternmost point of the Newport County, Rhode Island, and Bristol County, Massachusetts, border, running westerly along said boundary to the intersection with Stafford Road (R.I. Route 81), a distance of 1.1 miles.

Thence southerly along Stafford Road to the intersection of Eagleville Road, a distance of .7 miles.

Thence westerly along Eagleville Road to the intersection of Fish Road, a distance of 1.8 miles.

Thence southerly along Fish Road to the intersection of Bulgarmarsh Road (R.I. Route 177), a distance of 2.3 miles.

Thence westerly along Bulgarmarsh Road to the intersection of Main Road (R.I. Route 77), a distance of 1.0 miles.

Thence southerly along Main Road to the intersection of Sapowet Avenue, a distance of 1.6 miles.

Thence westerly and southerly along Sapowet Avenue, continuing southerly and easterly as Puncatest Neck Road, and easterly as East Road (R.I. Route 179), to the intersection of Lake Road, a distance of 4.6 miles.

Thence southerly along Lake Road, continuing as Long Highway, to the intersection of Crosby Road, a distance of 3.5 miles.

Thence easterly along Crosby Road to the point where Cold Brook passes under Crosby Road, a distance of .6 miles.

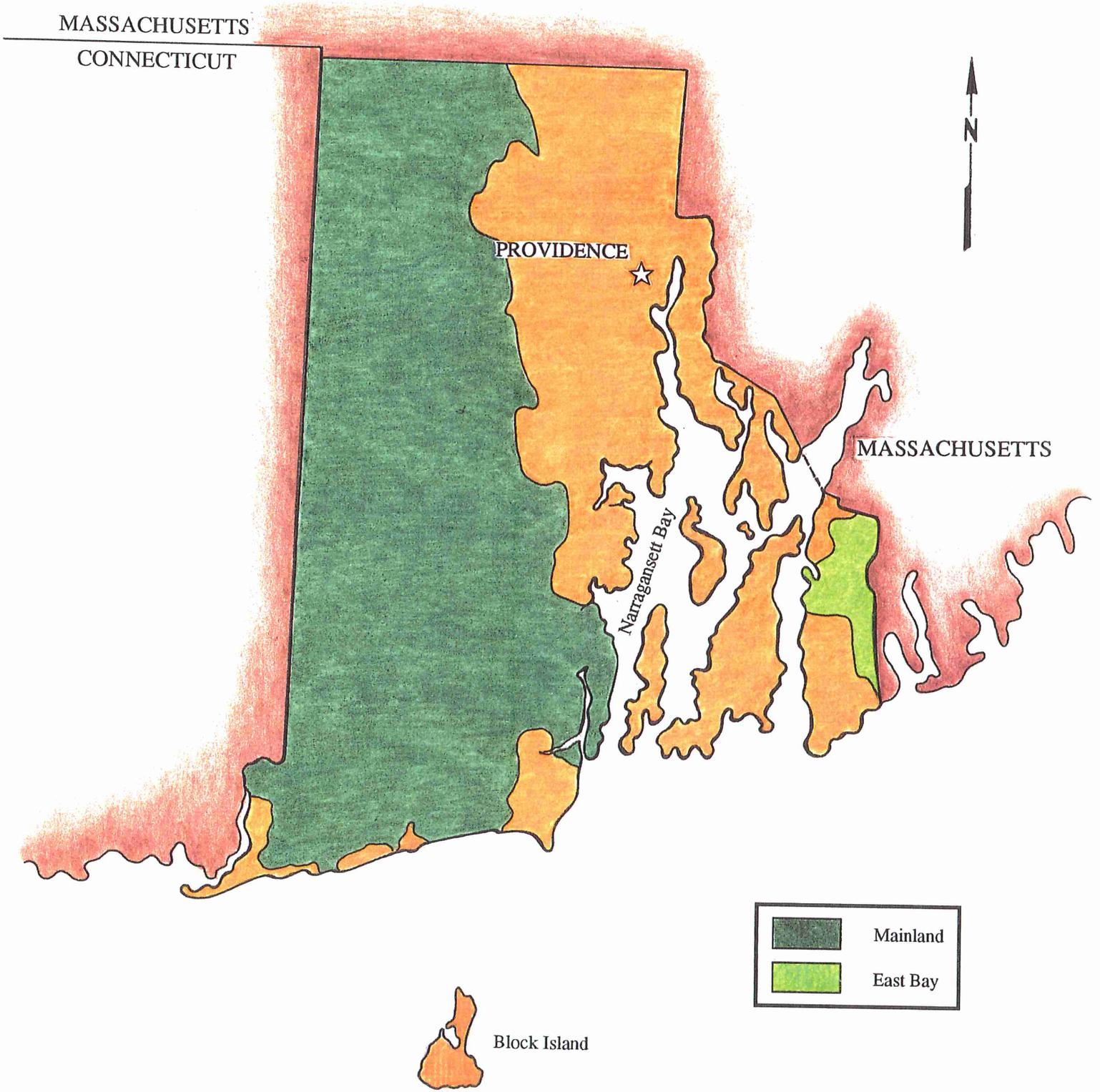
Thence following said brook southerly to the shore of Quicksand Pond, a distance of .3 miles.

Thence along the eastern shore of said pond to the intersection of Rhode Island/Massachusetts State border, a straight line distance of 1.5 miles.

Thence northerly along said border to the point of beginning, a distance of 11.2 miles.

STATE OF RHODE ISLAND

Proposed Legacy Areas



APPENDIX D.

Rhode Island Forest Legacy Program Tract Evaluation Form

**Directions for completing the Forest Legacy Program
Evaluation Package**

Cover sheet: The first part of the cover sheet is to be completed with information supplied on the enrollment application form. The landscape description is meant to include the physical characteristics of the surrounding area including topography, soils, and surface and ground water hydrologies; brief inventories of major vegetative groups, fish and wildlife resources, scenic resources, and any other forest resources; as well as surrounding land uses. The parcel description is meant to include an in depth description of the above mentioned items, but as they pertain to the parcel.

Office evaluation: These pages are to be completed by the state lead agencies, in consultation with the State Stewardship Coordinating Committee for presentation to the DEM Lands Acquisition Committee, and will be used to set the goals for acquisition of the parcel. This section may be completed before, after, or during the field evaluation.

Field evaluation: These pages are to be completed by the field personnel directed to do so by the DEM Land's Acquisition Committee, or state lead agencies, in consultation with other pertinent state and local agencies/groups.

Scoring: The final score should not be used as the sole factor determining which parcel/interest should be acquired, but merely as a guide to the relative values of resources evaluated.

FOREST LEGACY PROGRAM PARCEL EVALUATION PACKAGE

FLP File no.: _____ Date of evaluation: _____

Landowner's name: _____

Parcel location: _____

Town: _____ Plat: _____ Lot: _____

Investigator(s): _____

Landscape Description: _____

Parcel description: _____

Landowner name _____ File _____
 Evaluator(s) _____

RHODE ISLAND FOREST LEGACY TRACT OFFICE EVALUATION

I. Reasons for inclusion in the Forest Legacy Program. Prioritize the following reasons for enrollment of the parcel in the Forest Legacy Program:

<u>Proposed</u>	<u>Approved</u>	
_____	_____	Prevent development/fragmentation of an important forest resource
_____	_____	Protection of scenic resources
_____	_____	Enhance/procure public recreation opportunities
_____	_____	Protect/enhance an important drinking water supply
_____	_____	Preserve/protect an important riparian/hydrologic area
_____	_____	Preserve/protect fish and/or wildlife habitat
_____	_____	Preserve/protect habitat of rare, threatened, and/or endangered species of plant and/or animal
_____	_____	Preserve/protect important historic/archaeological site
_____	_____	Allow for the continuation of traditional forest uses
_____	_____	Ability to use the property for environmental education.
_____	_____	Other: _____

II. Degree of threat of forest fragmentation/conversion to non-forest uses.

<u>Yes</u>	<u>No</u>	
_____	_____	A. Parcel is in danger of conversion within 5 years
_____	_____	B. Parcel may remain wooded, but will become further fragmented
_____	_____	C. Parcel is currently on the open market, or listed by realtors
_____	_____	D. Securing one or more sites now will stem further development
_____	_____	E. Parcel is remote, but has the minimum required frontage on a town road
_____	_____	F. Parcel can only be developed under subdivision control
_____	_____	G. Parcel can be developed as a "cluster development"
_____	_____	H. Parcel is currently enrolled in the Farm, Forest, and Open-space program
_____	_____	I. Parcel may remain wooded, but is in danger of being high-graded
_____	_____	J. Other: _____

Landowner name _____

File _____

III. Factors affecting acquirability. These factors are to be taken into consideration when prioritizing parcels for acquisition.

<u>Yes</u>	<u>No</u>	<u>N/A</u>	
___	___	___	A. The property is specifically identified in terms of priority, timing, and cost in the local Recreation, Conservation and Open Space Plan, SCORP, Open Space Plan, or land trust master plan.
___	___	___	B. Parcel may be available at below fair market value.
___	___	___	C. Intensity and expense of management activities that would be required to preserve the property's values is economically feasible.
___	___	___	D. Preservation of the property would increase the protection of existing natural areas or enhance the linking of open space areas.
___	___	___	E. Property can accommodate proposed priority uses and/or management activities without endangering or degrading its natural value.
___	___	___	F. Property is defensible against future degradation by activities occurring on neighboring properties.
___	___	___	G. The applicant possesses the capacity to manage the property to preserve its scenic, natural, and ecological values.

Comments: _____

Landowner name _____ File _____
 Evaluator(s) _____

FOREST LEGACY TRACT FIELD EVALUATION

I. Parcel contains one or more of the following important public values (place check mark as indicated, circle appropriate score, and tally score in column to the right):

Yes No

A. Scenic resources (maximum score 55 points).

- | | | |
|-----|-----|--|
| ___ | ___ | (1). Parcel is listed in the RI Landscape Inventory as "Distinctive" (30 points), "Noteworthy" (15 points) or "Uncommon" (10 points) |
| ___ | ___ | (2). Parcel includes locally important panoramic views and/or exceptional short views (5 points) |
| ___ | ___ | (3). Parcel is situated along a designated scenic road (10 points) |
| ___ | ___ | (4). Example of a <u>Coastal Plain</u> (scale of 1-10). |
| ___ | ___ | (5). Example of a <u>Narragansett Lowland</u> (scale of 1-10). |
| ___ | ___ | (6). Example of a <u>Western Upland</u> (scale of 1-10). |

Scenic resources total score _____

B. Public recreation opportunities. (15 points each, maximum score 45 points).

- | | | |
|-----|-----|---|
| ___ | ___ | (1). Water-based recreation is present - boating, swimming, fishing, rafting, canoeing |
| ___ | ___ | (2). Trail based and/or day use recreational opportunities exist - hiking, picknicking, horseback riding, ice skating, cross-country skiing |
| ___ | ___ | (3). Natural resource based recreational activities are available - camping, hunting, nature touring |

Public recreation opportunities total score _____

C. Public/private drinking water supply values. (15 points each, maximum score 60 points).

- | | | |
|-----|-----|--|
| ___ | ___ | (1). Parcel is situated within the surface watershed, or groundwater aquifer, of an important public drinking water supply |
| ___ | ___ | (2). Parcel has been identified for acquisition by a public drinking water supply/management entity |
| ___ | ___ | (3). Parcel provides immediate watershed/water supply protection |
| ___ | ___ | (4). Parcel overlies a "Sole Source Aquifer" |

Public/private drinking water supply values score _____

Landowner name _____ File _____

Yes No

D. Riparian/hydrologic areas (15 points each, maximum score 60 points).

- ___ ___ (1). Parcel is situated on a major river or stream recognized by RI DEM inventories
- ___ ___ (2). Parcel has extensive (over 300') river or wetland shoreline
- ___ ___ (3). Parcel includes flood plain and natural valley (groundwater storage or recharge) components
- ___ ___ (4). Parcel contains a minimum 80' strip of native trees and shrubs as a natural buffer and sediment filter

Riparian/hydrologic areas total score _____

E. Fish and wildlife habitat (maximum score 58 points).

- ___ ___ (1). The property includes or directly abuts open or agricultural land which provides good habitat diversity supporting wildlife, or the property includes five or more contiguous acres which are suitable for the production of crops or livestock by reference to soil type or existing use (10 points).
- ___ ___ (2). The property is an uncommon, biologically fragile and/or critical habitat or is a unique ecological community in the state or region (10 points).
- ___ ___ (3). The property is an outstanding representative of other ecological community types in the state. This criteria seeks to preserve high-quality examples of commoner types that support productive and diverse biological communities (10 points).
- ___ ___ (4). Parcel exhibits connective habitats: corridors, habitat linkages, and/or those areas that reduce biological isolation (10 points).
- ___ ___ (5). The property includes sites of faunal or floral significance not included in other criteria. (Score 2 points for each item checked "Yes").

- ___ ___ Migratory Bird Concentration Area
- ___ ___ Wintering Waterfowl Concentration area
- ___ ___ Nesting Colonies of Non-listed Birds
- ___ ___ Breeding Ponds for Non-listed Amphibians
- ___ ___ Streams Supporting Anadromous Fish Runs
- ___ ___ Bat Roosts (Not in buildings)
- ___ ___ Unusual Invertebrate Populations
- ___ ___ Unique Genetic Variations of Unlisted Plants
- ___ ___ Exemplary Native Tree Specimens

Fish and Wildlife habitat total score _____

Landowner name _____ File _____

Yes No

F. Known threatened and endangered species, or species of special concern. Species to be considered under this criterion are those currently listed by the Rhode Island Natural Heritage Program, and those listed in the Federal Register. Score 50 points for one, 60 points for both.

- _____ (1). The property provides habitat supporting, or capable of supporting a single occurrence of rare or endangered species, or species of special concern.
- _____ (2). The property provides habitat supporting, or capable of supporting multiple occurrences of rare or endangered species, or species of special concern.

Endangered Species total score _____

G. Known cultural/historic areas (5 points each, maximum score 25 points).

- _____ (1). Parcel contains recorded archaeological site; e.g. burial, midden, fire pit, or artifacts of Contact, Woodland, or Archaic periods
- _____ (2). Parcel includes historic features; e.g. charcoal kilns, church or village sites, battle sites, historic forests, historic roads, paths, or lookouts
- _____ (3). Parcel is within a designated "Historic District" or has been listed locally as "Historic".
- _____ (4). Parcel contains elements eligible for, listed, or proposed for listing on the National Register of Historic Places

Cultural/historic areas total score _____

H. Other ecological values (5 points each, maximum score 25 points).

- _____ (1). Productive soils - Parcel contains productive soils for agriculture or forestry as determined by the U.S. Soil Conservation Service Technical Guide
- _____ (2). Parcel provides a mix of stable ecological communities (bio-diversity)
- _____ (3). Parcel includes declining ecological communities such as vernal pools, mature riparian flood plain forest, pine barrens
- _____ (4). Parcel contains late successional growth timber
- _____ (5). Other: _____

Other ecological values total score _____

Landowner name _____ File _____

Yes No

I. Provides opportunities for continuation of existing traditional forest uses. (50 points if either are checked).

____ (1). Parcel will remain available for sugar bush operation, cordwood or timber management under Stewardship Plan

____ (2). Other: _____

Traditional forest uses total score _____

TOTAL SCORE _____

Comments: _____

Recommendations: _____

APPENDIX E.

Greenspace 2000 Goals and Objectives, and Membership List,
1991.

Letter from George Johnson, Principal Planner, Department of
Administration, Division of Planning, to Tom Dupree, Chief,
DEM Division of Forest Environment.

April 12, 1991

Mr. Tom Dupree, Chief
DEM/Division of Forest Environment
1037 Hartford Pike
N. Scituate, RI 02857

Dear Colleague:

I am pleased to confirm your appointment by the Rhode Island
State Planning Council to the GreenSpace 2000 Advisory
Committee. The Committee is charged with developing a
visionary plan for a network of open spaces (greenspaces)
and corridors (greenways) which function as the
environmental safety net for our precious legacy of natural
resources, provide a framework for structuring future
development patterns, and insure that Rhode Islanders can
readily access, enjoy and appreciate their physical
environment.

The following broad goals have been established for the
plan:

- * to examine all open lands in the state, considering all
the values of open space, and identify the most
important open spaces for future protection;
- * to identify linkages which can serve to connect
preserved open space tracts with each other and with
populated areas of the state;
- * to coordinate the open space protection objectives of
the state, local governments, and private groups;
identifying priorities, responsibilities, resources and
cooperative strategies for realizing the plan's goals;

* to present this information as a collective vision of Rhode Island's open space future; a goal that can inspire and empower.

The last several years have witnessed remarkable progress in protecting Rhode Island's open space, as state and local governments, local land trusts, state and national private land protection groups and foundations have worked together to purchase or protect over 10,000 acres throughout the state.

We have now reached a critical juncture; our past successes are now confronted with the reality of scarce resources and uncertain economic times. This challenge also presents an opportunity--as breathing space--which will give Rhode Island a chance to announce a cogent plan of action for its open space future.

GreenSpace 2000 can be that blueprint. The plan will utilize the latest data and computer technology available to state government. It will break new ground in both policy and technical realms. For this reason, the knowledge, expertise and ideas of Advisory Committee members will be crucially important to guide selection of key open space areas; your knowledge of Rhode Island's landscape to identify critical linkages between open space and populated areas; your ideas and experience to forge cooperative strategies for achieving the plan's objectives.

The planning process is programmed to be a year-long effort. It is planned that the Advisory Committee will meet perhaps three to four times during the course of the project to review progress, make decisions, and provide direction for subsequent aspects of the project. Meetings will be in Providence, and will be scheduled at a time convenient to the majority of the membership.

I am pleased that you will be able to join with us in this important endeavor. We anticipate the first meeting of the Committee will be held in mid-May. Details concerning the data, time and location of the meeting will be provided to you as soon as we have finalized them. If you have any questions or wish to discuss any aspects of the project in the interim, please feel free to contact me at (401) 277-6479.

Yours truly,

George W. Johnson
Principal Planner

TASK:

TITLE: Open Space Systems Plan

OBJECTIVE:

To provide a plan that sets priorities for acquisition and protection of open space as an integrated system, including greenways along rivers and connecting sites.

PROGRESS:

Open Space has been a focus of public concern and action in recent years. Large open space bonds were passed in 1987 and 1989. Now, there is a need for a systematic, statewide assessment of open space protection needs.

During 1990, several preliminary steps were taken to support development of the Open Space Systems Plan. A review of local open space and recreation plans and a survey of local officials were completed to identify areas that local governments have identified for protection. Local zoning ordinances were reviewed to catalogue the techniques that are being used to protect open space.

Work began on the plan in FY 1991. The necessary computer software and hardware to develop the plan using the Rhode Island Geographic Information System (RIGIS) were acquired. A list was compiled of resource data to be utilized, most of which have been entered into the RIGIS. A methodology was developed to use the ARC/INFO software to manipulate the data sets and produce maps. A committee was formed to guide staff on the project.

PROGRAM FY 92:

1. Carry out the mapping analysis according to the methodology developed. This will involve an iterative process of assigning weights, to the various resources (existing parks, wetlands, floodplains, watersheds, groundwater resources, natural heritage sites, etc.) and portraying combinations of these. The process will result in preliminary and final "greenline" maps that depict existing protected sites and undeveloped areas possessing open space value (by type and value category).
2. Analyze high-value open space sites, to establish priorities. Develop criteria to screen sites for size, imminence of development threat, viability of alternative protection techniques, ownership fragmentation, and system integration potential (linkage with other existing or proposed sites). Prepare a final map illustrating a future integrated coastal and inland open space system and priorities for protection (primary and secondary open space

tracts, connectors, and complementary lands). Identify open space sites for strategic acquisition under state, local, and private programs.

3. Prepare an Open Space Systems Plan to provide a policy framework for open space system development; to explain the methodology; to examine protection options for various categories of open space; and to recommend cooperative federal, state, local and private-sector protection efforts.

4. Present the Open Space Systems Plan to the State Planning Council. Conduct public hearings, revise the plan, and adopt it as an element of the State Guide Plan.

ASSESSMENT:

This plan is needed in order to respond effectively to the threatened loss of significant open space and to direct available funds to the highest priorities.

The time required to prepare the plan is difficult to estimate because the computerized GIS mapping techniques are complex and are just being learned by staff.

GREENSPACE 2000 ADVISORY COMMITTEE
MEMBER/ALTERNATE ADDRESS LIST
as of 5/20/91

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Ms. Elizabeth Shields
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Cambridge, MA 02138

APPENDIX F.

Outline of the Public Participation Process

<u>ACTION</u>	<u>DATE</u>	<u>PUBLIC INVOLVEMENT</u>
Appointment of the Forest Legacy Subcommittee.	10/91	Member of the Coalition of Land Trusts, and various state and private groups.
Development of the AON and delineation of the FLA's by Division of Forest Environment staff and the Forest Legacy Subcommittee.	10/91 through 3/92	Using multiple state and private resources, each of which had a public participation aspect, most included extensive public hearings.
Presentation of the AON to the State Stewardship Coordinating Committee	4/92	Membership includes various public and private conservation groups. No negative comments received.
Forwarding of AON to Congressional Delegation.	3/92	For their review and response. Received favorable replies.
Presentation of the AON to the Greenspace 2000 Task Force.	4/92	Membership includes a wide array people representing every conceivable user group. AON enthusiastically accepted, Task Force report amended to include the Legacy Program.
Inclusion of the Forest Legacy Program in the SCORP.	6/92	For review and comment by each and every City and Town in the State, as well as by a host of legislative and conservation groups (see SCORP membership). Many calls, a few negative replies.
Press releases.	throughout	Commentaries from local groups (all favorable) re: the Legacy program. See Addendum #2.
Press releases.	3/93	Announcing the final public hearing. Three major articles in the largest state newspaper plus several other stories in local papers and conservation group newsletters. Few negative replies.
Public hearing.	3/93	For all interested landowners. Many questions (see text), few comments, overall acceptance.

APPENDIX G.

Public Informational Hearing Items

FOREST LEGACY PROGRAM
PUBLIC INFORMATION WORKSHOP
MARCH 30, 1993

Staff present: Tom Dupree, Chief, RIDEM, Division of Forest Environment, Tom Quink, Program Manager, Southern New England Forest Legacy Program, Paul Ricard, Senior Wildlife Biologist, Division of Forest Environment, Lisa Pointek, Supervisor, Land Acquisition Program, Division of Planning & Development.

At 7:00 PM, Tom Dupree welcomed the attendees to the public informational workshop for the Forest Legacy Program. He then introduced Tom Quink, who gave an overview of the Forest Legacy Program. Mr. Quink explained the 1990 Farm Bill which contained the Forest Stewardship Program and the Forest Legacy Program. The goals of the FLP are to protect and conserve forested areas which are threatened by conversion.

Mr. Quink then reviewed, in detail, the requirements of the FLP including the program's goals and objectives, the needs assessment and its components, and the Forest Legacy area. He also explained the process for evaluating parcels, types of interest to be acquired, property management and stewardship, and the cost sharing requirements. The project costs will be 75% federal, and 25% state, local, or private match.

A presentation of RI's Forest Legacy Program was then made by Tom Dupree. Mr. Dupree stated that we are expecting \$7 million to be distributed to seven states, mostly in the New England region. RI used the Greenspace 2000 Task Force to assist in the development of the needs assessment and the Forest Legacy area.

Mr. Dupree presented the mapped inventory of open space, endangered species, watersheds, forested tracts, and other natural resources developed by Statewide Planning. This natural resource information was used to develop the boundaries of the Forest Legacy area. The needs assessment has been presented and approved by the Greenspace 2000 Task force. Mr. Dupree then explained that funds have been appropriated but not yet allocated to the State.

Mr. Dupree then opened the forum to questions.

A question was raised relative to the time frame for the program funds. Mr. Dupree explained that we expect to have word by the end of April. Another person asked about the offers that would be made. Mr. Quink explained the appraisal process and that offers would likely be 75% of the fair market value of the property. Later he discussed that other potential funding sources for the 25% required state, local or private match. Groups such as The Nature Conservancy and Audubon may also be interested in participating in the program.

In response to a question on the ranking of projects, Paul Ricard reviewed the criteria and ranking system that will be used to evaluate projects.

A representative from the RI Landowners Association stated that his group does not support land purchase as a way to protect land. We should instead promote a favorable atmosphere for private land ownership by better tax treatment and changing our attitudes.

Mr. Dupree discussed the dilemma faced by landowners whose children inherit property and subsequently pay large inheritance taxes. He stressed the need for estate planning to reduce the tax burden.

Mr. Dupree encouraged people to respond with additional comments in writing or to contact his office.

There being no more questions or comments, the meeting was adjourned at 8:30 PM.

Respectfully submitted,

Lisa Pointek, Supervisor
Land Conservation & Acquisition Program

QUESTION

RESPONSE

When will the Forest Legacy Program be funded?

Hopefully in the beginning of May.

How much money will be offered for each parcel?

100% of the appraised value as determined by federal appraisal methods.

What is the application procedure?

Explained.

Who are the members of the State Stewardship Coordinating Committee?

Explained. List sent.

How is a parcel owned in more than one state going to be dealt with?

Unable to answer this question at this time due to lack of information.

Does participation in federal cost share programs such as S.I.P. or F.I.P. preclude a landowner from enrolling in the FLP?

No! Explanation given.

What is the time frame for the enrollment and acquisition procedure?

Impossible to tell at this time as the program is new. We anticipate on the order of six plus months.

In Forest Legacy Program money earmarked for the nonindustrial private forest landowner?

Yes.

Are we going to identify lands that we would like to own and then aggressively pursue the landowner?

No! Willing seller, willing buyer.

Are parcels already designated as open space factored into the evaluation process?

Yes as far as existing level of protection is concerned.

How is property enrolled in the FLP affected property tax-wise?

Final call is up to the local tax assessor, but even if taxed at highest and best use, that use will be limited by conservation restrictions. Best bet is to talk with your financial advisor.

Is a parcel survey necessary?

Yes but the cost of such can applied towards the in-kind match.

If the property changes ownership changes does the easement remain?

Yes, the restrictions are held in perpetuity.

Are there maximum/minimum lot size requirements for enrollment in the program?

No. Lot size will be factored into the parcel evaluation process.

Appendix H.

Letters of Authorization



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management
OFFICE OF THE DIRECTOR
9 Hayes Street
Providence, R.I. 02908

September 27, 1991

Mr. Dale Robertson, Chief
U.S.D.A. Forest Service
14th and Independence SW
P.O. Box 96090
Washington, DC 20090-6090

Dear Chief Robertson:

Please be apprised that I am designating the Department of Environmental Management as the state's lead agency for U.S.D.A.'s Forest Legacy Program as authorized under Section 1217 of Title XII of the Food, Agriculture, Conservation and Trade Act of 1990 (P.P. 101-624:104 stat. 3359).

I am asking that all information and other pertinent materials be forwarded to two specific divisions within the Department of Environmental Management. Henceforth, all information should be sent to Thomas A. Dupree, Chief, Division of Forest Environment, 1037 Hartford Pike, North Scituate, RI 02857 and Judith Benedict, Chief, Division of Planning and Development, 83 Park Street, Providence, RI 02903.

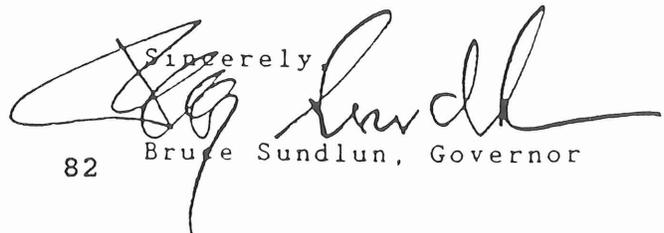
Because all conservation land acquisitions are coordinated by the Division of Planning and Development and the Division of Forest Environment plays the critical role of directing the state's Stewardship Committee, I feel it necessary to have two points of contact.

I have instructed the Department of Environmental Management to proceed with an assessment of need as required by the statute. I am also pleased that Southern New England has been selected as a project area for this timely forest-conservation program.

I want to thank you for support of state and private forestry programs, as these programs improve our local environment and contribute significantly to a healthier, cleaner planet.

Best personal wishes.

Sincerely,



Bruce Sundlun, Governor

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
INTER - OFFICE MEMO

TO: All Forest Legacy Subcommittee Members
FROM: Thomas A. Dupree, Chief 
DEPT: DEM/Forest Environment
DATE: January 21, 1992
SUBJECT: Meeting

There will be a meeting of the Rhode Island Forest Legacy Subcommittee on Monday, January 27, 1992 at 10 a.m. at the Division of Forest Environment headquarters. Items to be discussed are:

- 1) Designation of the Legacy area in R.I.
- 2) Criteria to be used in the selection of Legacy tracts.
- 3) Priority areas for acquisition
- 4) Estimated financial need to achieve #3.

If you have any questions, please contact Paul Ricard at 647-3367.

XI. REFERENCES

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