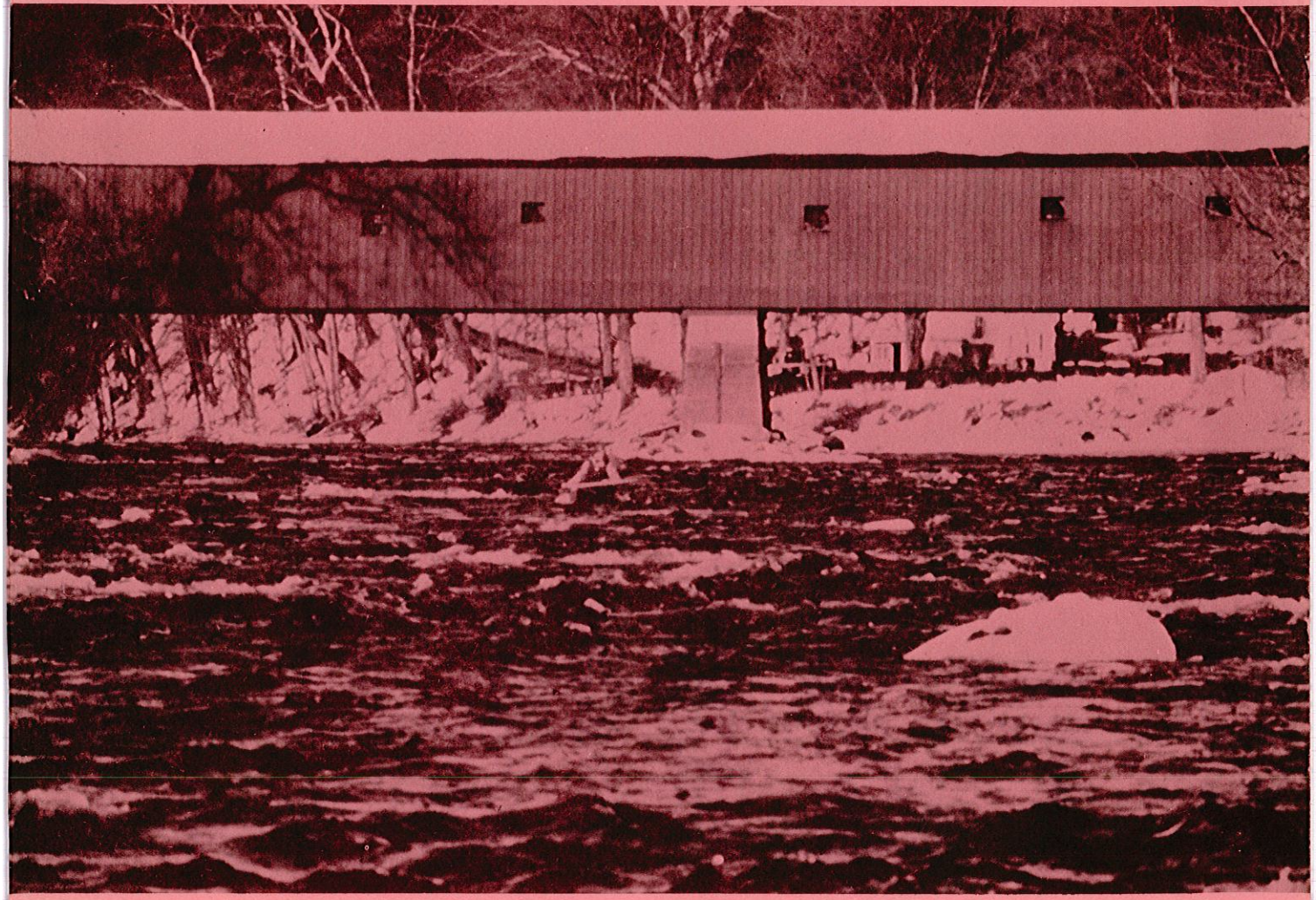
THE HOUSATONIC IN CONNECTICUT

A WILD AND SCENIC RIVER STUDY



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U. S. DEPARTMENT OF THE INTERIOR
Cecil D. Andrus, Secretary

NATIONAL PARK SERVICE
William J. Whalen, Director

FINAL REPORT

THE HOUSATONIC IN CONNECTICUT

A WILD AND SCENIC RIVER STUDY

August 1979

Prepared by:

U.S. Department of the Interior
Heritage Conservation and Recreation Service
(formerly Bureau of Outdoor Recreation)
Northeast Regional Office

Printed by the National Park Service

FOREWORD

On October 12, 1976, the U.S. Congress amended the Wild and Scenic Rivers Act (Public Law 90-542) to include for study the Housatonic River in Connecticut from the Massachusetts/Connecticut boundary downstream to its confluence with the Shepaug River. This action was the result of the initiative taken by the people of the Housatonic Valley to protect the natural beauty and cultural heritage of their river.

The Wild and Scenic Rivers System was established by Congress in 1968 to protect and conserve outstanding free-flowing rivers of this nation for the future. Its purpose as stated in the Act is "that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations."

This report evaluates the Housatonic River in Connecticut, discusses the actions required for conservation and protection of the river, and explains the procedures for designation of the eligible river segment as a National Scenic and Recreational River.

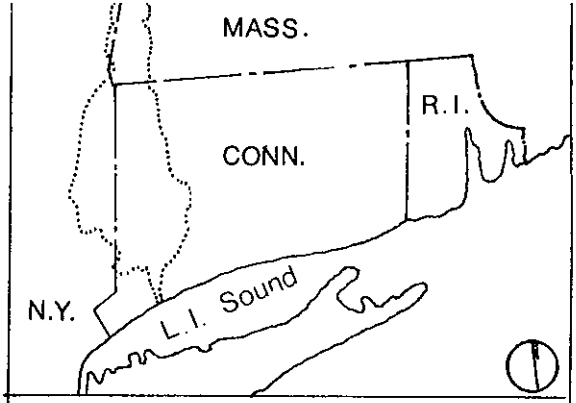
TABLE OF CONTENTS

APPENDICES

MAPS

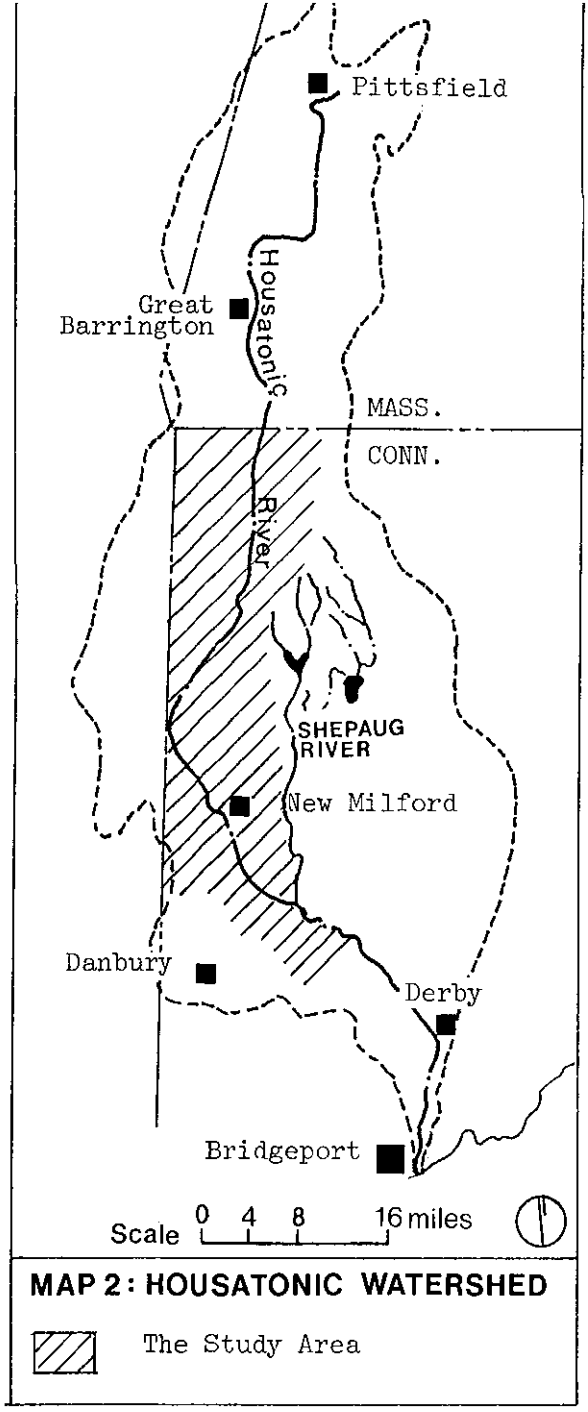
TABLES

PRINCIPLES & STANDARDS TABLES



MAP 1: LOCATION

The Housatonic Watershed



MAP 2: HOUSATONIC WATERSHED

The Study Area

SUMMARY

The Housatonic River basin lies principally in western Connecticut and southwestern Massachusetts with small sections extending into southeastern New York. Of the river's total 132 miles, only 51 miles in Connecticut were identified for this study. The general study area includes the towns of Salisbury, North Canaan, Canaan, Sharon, Cornwall, Kent, Sherman, New Milford, Bridgewater, Brookfield and Newtown. This area is well known for its charming rural character, historical heritage and natural beauty which is remarkable considering its proximity to the northeastern megalopolis. This hilly upland area was passed over as an urban corridor developed between Boston and New York along the flat coastal plain of Long Island Sound. Today, urban pressures are beginning to be felt here, as the nearby Danbury metropolitan area continues to expand rapidly, and as the popularity of river-oriented recreation continues to increase. The residents of the Housatonic Valley are aware of these pressures and their potential was brought about by their interest in preserving the Housatonic and has involved a full variety of public and private officials and citizens who are working together

Findings

The Housatonic River from the Massachusetts/Connecticut border to its confluence with the Shepaug River has been carefully studied by an interagency study team of representatives from several federal agencies, the State of Connecticut, regional planning agencies, and several recreation and conservation groups. This team found the following outstanding qualities and values of the river and its valley:

SCENIC QUALITY. The visual and spatial experiences of the river valley are highly diverse as the river flows through areas of steep forested mountains with prominent bedrock outcroppings near their summits, to areas of gently rolling hills and broad flood plains covered with agricultural fields and dotted with tiny villages.

HISTORICAL VALUE. The Housatonic Valley originally developed as a river-oriented agricultural area in colonial times and eventually played a prominent role in the 19th century iron industry. Reminders of these historical periods are evident today in the general appearance of the valley with its picturesque riverside villages of colonial homes and stores, and its old stone fences running through fields of crops. State and/or national recognition has been given to several historical sites in the valley.

ARCHAEOLOGICAL VALUE. Archaeologists maintain that the Housatonic Valley has an excellent potential to yield significant archaeological finds from prehistoric cultures and is a unique archaeological resource in this area of New England.

WATER QUALITY. The study segment of the Housatonic River has a general class "B" rating under the 1973 Water Quality Standards for Connecticut. This indicates the river's ability to support bathing and other recreational activities as well as to provide an excellent habitat for fish and wildlife including a cold water fishery. The 1976 water quality standards, however, downgrade the river to class "D" due to the high levels of PCB's (**polychlorinated biphenyl**) found in the fish. Efforts are being made to return this river segment to its original class "B" rating by 1979.

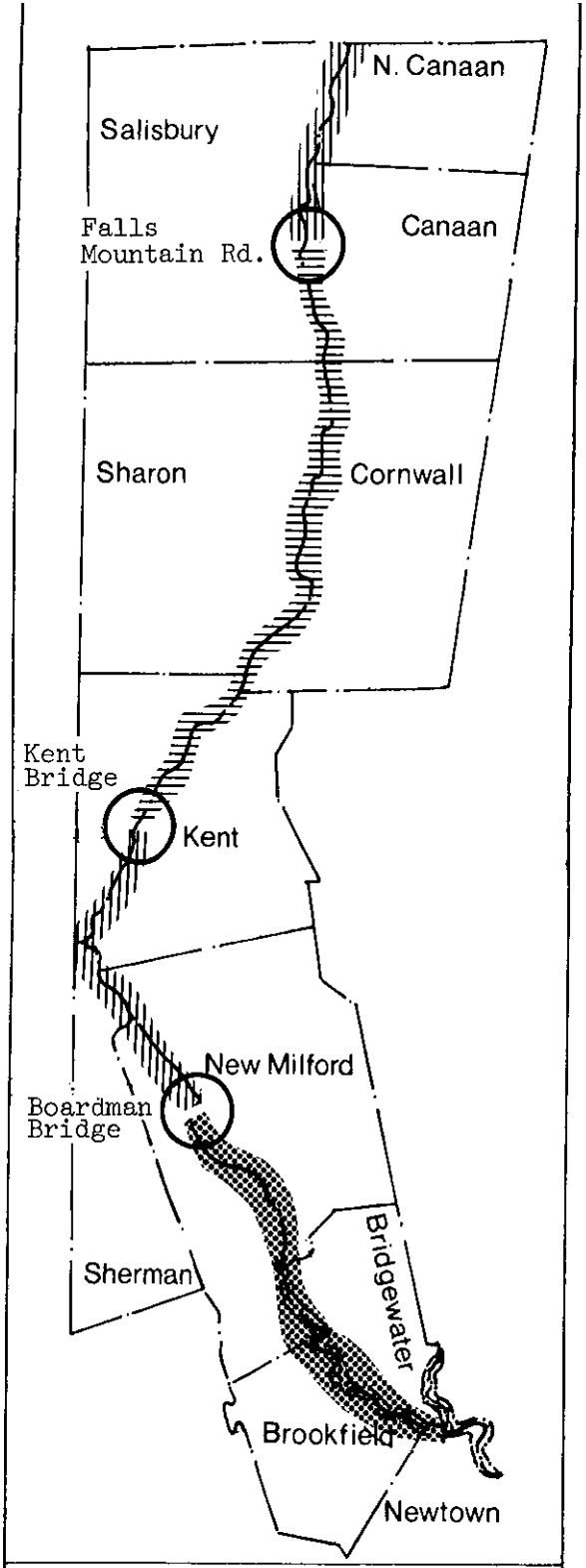
VEGETATION AND WILDLIFE VALUES. The Housatonic Valley contains certain unique environmental conditions that create suitable habitats for rare and endangered species of both plants and animals. Several of these sites are recognized as "critical habitats" by the State of Connecticut and are of scientific and educational significance of New England as a whole.

RECREATIONAL VALUE. The Housatonic River supports a full range of river-oriented activities and is well known in the Southern New England-New York region for canoeing, kayaking, trout and bass fishing, and fly-fishing. State park and forest lands in the area provide public access to the river and accommodations for camping, hiking, and hunting.

QUALIFICATION. The major purpose of the study team in evaluating the river was to make findings and recommendations concerning the suitability of the Housatonic River for inclusion in the National Wild and Scenic Rivers System. These major findings on qualification are as follows:

1. THE 41-MILE SEGMENT OF THE HOUSATONIC RIVER FROM THE MASSACHUSETTS/CONNECTICUT BORDER TO BOARDMAN BRIDGE NEAR NEW MILFORD MEETS THE ELIGIBILITY CRITERIA AND THUS QUALIFIES AS A COMPONENT OF THE NATIONAL WILD AND SCENIC RIVERS SYSTEM. HOWEVER, PROTECTION IS CONTINGENT UPON THE COMPLETION OF AN ACCEPTABLE MANAGEMENT PLAN THROUGH LOCAL ACTION.

2. THE 10-MILE SEGMENT OF THE HOUSATONIC RIVER FROM BOARDMAN BRIDGE TO ITS CONFLUENCE WITH THE SHEPAUG RIVER DOES NOT QUALIFY FOR INCLUSION IN THE NATIONAL WILD AND SCENIC RIVERS SYSTEM DUE TO THE COMBINED ADVERSE EFFECTS OF IMPOUNDED WATERS AND SHORELINE DEVELOPMENT. NEVERTHELESS, A MANAGEMENT PLAN FOR PRESERVATION OF THE SPECIAL VALUES OF THIS RIVER SEGMENT SHOULD BE PREPARED THROUGH LOCAL ACTION.



Eligible segment: scenic class

Eligible segment: recreational class

Ineligible segment

MAP 3 : HOUSATONIC STUDY SEGMENT

CLASSIFICATION. In addition to determing, the study team classified the eligible segment of the river into one SCENIC and two RECREATIONAL segments. This determination is based on the degree of development along the river as compared to other rivers in the National System. The scenic segment is the 20.5 miles of the river from Falls Mountain Road in Canaan to Kent Bridge. The recreational segments are the 8.5 miles from the Massachusetts/ Connecticut border to Falls Mountain Road, and the 12 miles from Kent Bridge to Boardman Bridge. This classification is not intended to indicate the "most scenic" or"best recreational" areas and does not affect the amount of protection extended to a river segment.

Recommendations

1. THE RESPONSIBILITY AND INITIATIVE FOR PREPARING A MANAGEMENT PLAN AND REQUESTING NATIONAL SCENIC AND RECREATIONAL RIVER DESIGNATION SHOULD BE WITH THE LOCAL TOWNS.

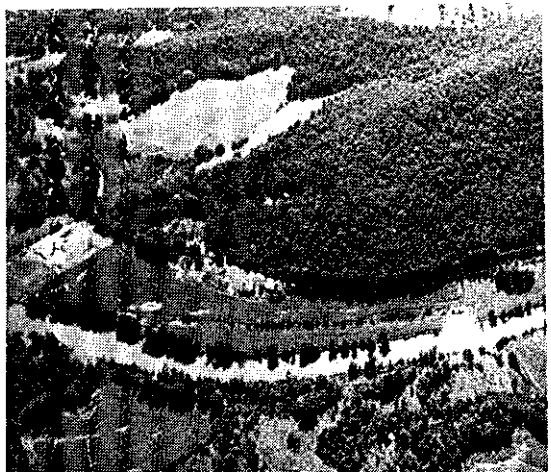
This report, therefore, includes guidelines to assist the towns in preparing an acceptable management plan and in requesting designation, if they choose to do so. Basically, an acceptable management plan should include programs to guide land use, recreation and water quality through administrative and legal actions of the federal, state and local governments and the voluntary cooperation of interested groups and individuals. Primary responsibility for implementing the management plan could be delegated to either the town governments, or the state governments, or a combined state/local arrangement. This managing agency should coordinate the actions of the towns, the State of Connecticut, the federal government, the regional

2. IF NATIONAL SCENIC AND RECREATIONAL RIVER DESIGNATION IS DESIRED, THE COMPLETED MANAGEMENT PLAN SHOULD BE PRESENTED TO THE LOCAL TOWNS FOR APPROVAL, AND THEN TO THE STATE LEGISLATURE FOR RECOGNITION AS A STATE SCENIC RIVER AND FOR LEGISLATION OFFICIALLY RECOGNIZING THE MANAGING AGENCY.

3. THE GOVERNOR SHOULD SUBMIT THE PLAN TO THE SECRETARY OF THE INTERIOR WITH A REQUEST FOR NATIONAL DESIGNATION AS A STATE-DESIGNATED UNIT, AS PROVIDED FOR UNDER SECTION 2(a)(ii) OF THE NATIONAL WILD AND SCENIC RIVERS ACT.

4. THE FINE SCENIC, CULTURAL AND RECREATIONAL FEATURES OF THE 10-MILE INELIGIBLE RIVER SEGMENT SHOULD BE RECOGNIZED AND LOCAL INTEREST IN ATTAINING ADDITIONAL PROTECTION FOR THIS AREA SHOULD BE SOUGHT.

The recommended management plan for this river segment should provide a coordinated state and local effort towards preserving its values and guiding its future, even though federal commitments through river designation cannot be made unless a special exception is granted by Congress.



The Housatonic River runs quickly through a scenic forested valley which reflects the rural-agricultural character of its New England colonial heritage. To thoroughly understand this river, a discussion of its natural resources and settlement pattern is presented here. This is the basic information on which the study team has formed the decisions and recommendations of the report and should provide a basis for management planning for the river.

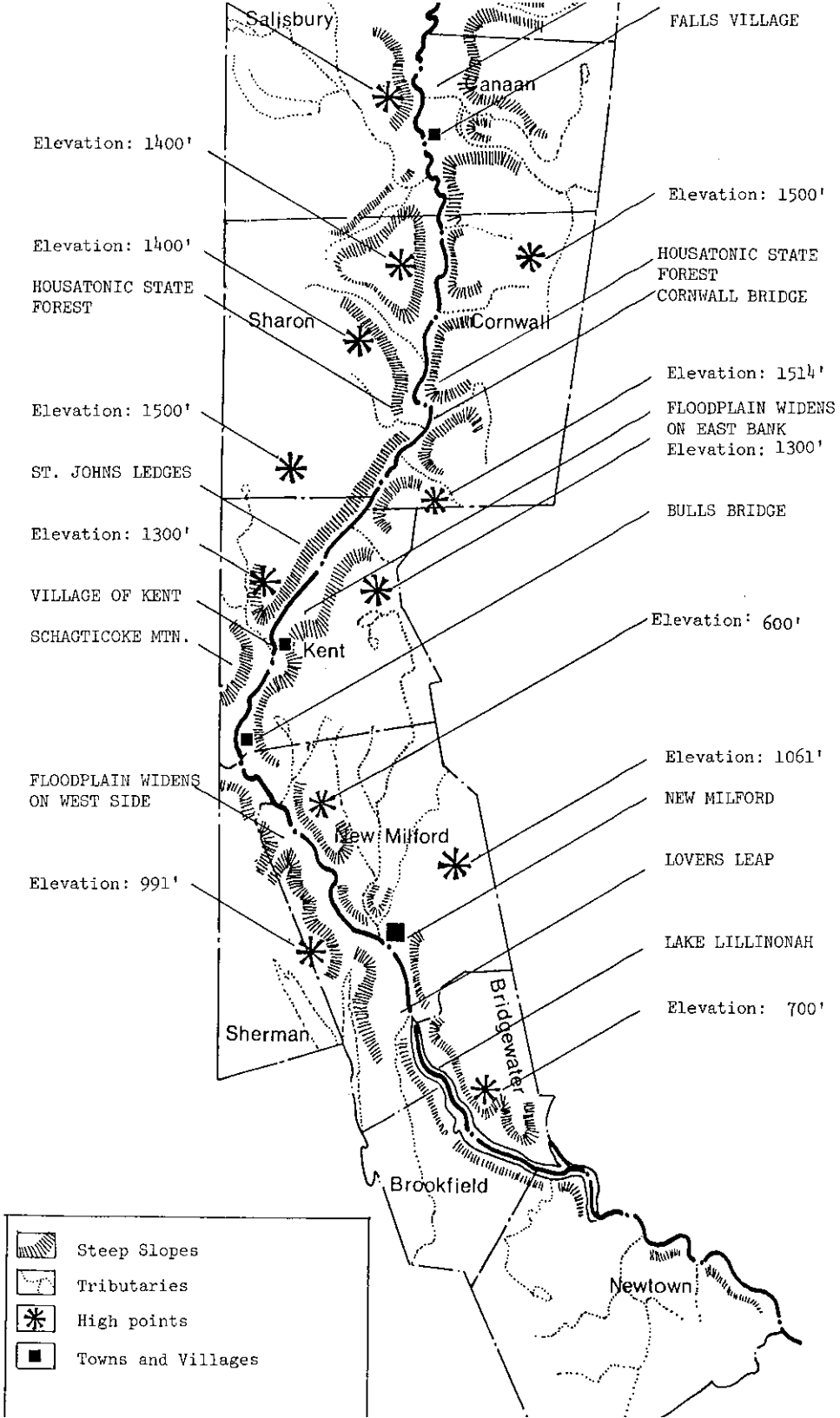
NATURAL RESOURCES

The natural resources of the river valley are the result of processes which have occurred in the area through eons of time. An understanding of these processes can clarify the importance of what is there and suggest why the valley has come to be as it is today.

Topography

The Housatonic valley changes dramatically from the northern to southern edges of the study area. From the Massachusetts/ Connecticut border downstream to Falls Village the river meanders slowly alongside a rugged mountain rising 700 feet above the river to an elevation of 1461 feet on its west bank and past several lower hills rising only 200 feet on its east bank into a broad flat floodplain and wetland area. Then the river valley narrows gradually until it is pinched between the mountains of the Housatonic State Forest which rise approximately 900 feet above the river in Cornwall to an elevation of 1400 feet. In the town of Kent, the flood plain on the east bank widens as the mountains, rising gradually to 1300 feet, are stepped back from the river. The west bank, however, continues to form a steep forested wall rising 1000 feet over the river at St. Johns Ledge and Schagticoke Mountain. Then the river turns sharply at Bulls Bridge into a narrow flood plain lined intermittently with steeply sloped hills, rising only 300 feet above the river, to an elevation of 500-600 feet. As the river reaches the village of New Milford, the flood plain widens considerably especially on its western bank. Then it is pinched suddenly into a small steep forested gorge at Lovers Leap. Beyond this gorge the river becomes the long narrow Lake Lillinonah nestled in rugged and steep forested hillsides which rise 500 feet over the water to elevations of 600-700 feet.

These changes in topography from


Salisbury
FALLS VILLAGE
Canaan
Elevation: 1400'
Elevation: 1500'
Elevation: 1400'
HOUSATONIC STATE FOREST
HOUSATONIC STATE FOREST
CORNWALL BRIDGE
Sharon
Cornwall
Elevation: 1514'
Elevation: 1500'
FLOODPLAIN WIDENS ON EAST BANK
Elevation: 1300'
ST. JOHNS LEDGES
BULLS BRIDGE
Elevation: 1300'
VILLAGE OF KENT
Elevation: 600'
SCHAGTICOKE MTN.
Kent
Elevation: 1061'
FLOODPLAIN WIDENS ON WEST SIDE
NEW MILFORD
New Milford
LOVERS LEAP
Elevation: 991'
LAKE LILLINONAH
Bridgewater
Elevation: 700'
Sherman
Brookfield
Newtown
Steep Slopes
Tributaries
High points
Towns and Villages

Generally the Housatonic River Basin, including its New York and Massachusetts sections is a maturely dissected upland with narrow, flat-topped hills preserving in their summits the old uplifted plain in which the present valleys have been cut. The northern perimeter of the basin is ringed with steep-sided mountains rising 1500 feet above the wide valley to elevations of 2600 feet. In the lower Connecticut part of the basin, the tops of the even-crested hills rise approximately 500 feet above the valley floor. This distinctive decline in elevation along the river from the mountains in Massachusetts to the hills of southern Connecticut, reflects the passage of the river through two sections of the New England physiographic province of North America - the Taconic section and the New England Upland section. The transition zone dividing these two areas occurs in the general vicinity of Bulls Bridge. The Taconic section to the north is the smallest subdivision of the New England province and consists of mountains and limestone valleys. The New England Upland below Bulls Bridge extends from the tip of Maine through Connecticut and is generally described as a widespread plateau-like area with several thousand scattered lakes and isolated hard-rock hills.

Geology

The basic topographic form of the Housatonic valley today is determined by the location and relative strength of bedrock in the area which has been formed through eons of time by natural forces, pressures and processes. The oldest known rocks in the Housatonic valley are the gneiss-schist complex from the

originally granite with some sediments deposited by the sea, were pressured and uplifted to form metamorphic rocks. Today, this Precambrian gneiss and schist forms the steep mountains of the Housatonic State Forest and the east wall of the river through Kent.

Early in the following era, the Paleozoic, seas covered large parts of the region, which deposited a carbonate material that became limestone, and which formed sandy beaches that later became sandstone. Eventually these limestone and sandstone deposits were changed to the marble and quartzite which forms the broad flood plain areas of the river valley, especially north of Falls Village, south of Cornwall Bridge, and near the village of New Milford.

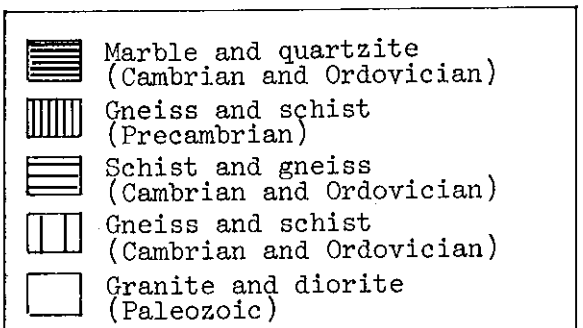
Later in the Paleozoic era, the ancient seas retreated and large masses of silt and mud were washed into the area from the higher lands to the northwest. The resulting sediments first became shales, then were metamorphosed into slates, and today form the schist and gneiss, located on the west bank of the river above Falls Village, on the eastern boundary of the broad flood plain in Kent, and on part of Lake Lillinonah's shores.

Following the retreat of the ancient seas, massive forces slowly lifted the land far above sea level, probably as high as twenty thousand feet. During these upheavals, the Paleozoic intrusive rocks of granite and diorite entered the valley in New Milford, below Bulls Bridge and along a portion of Lake Lillinonah.

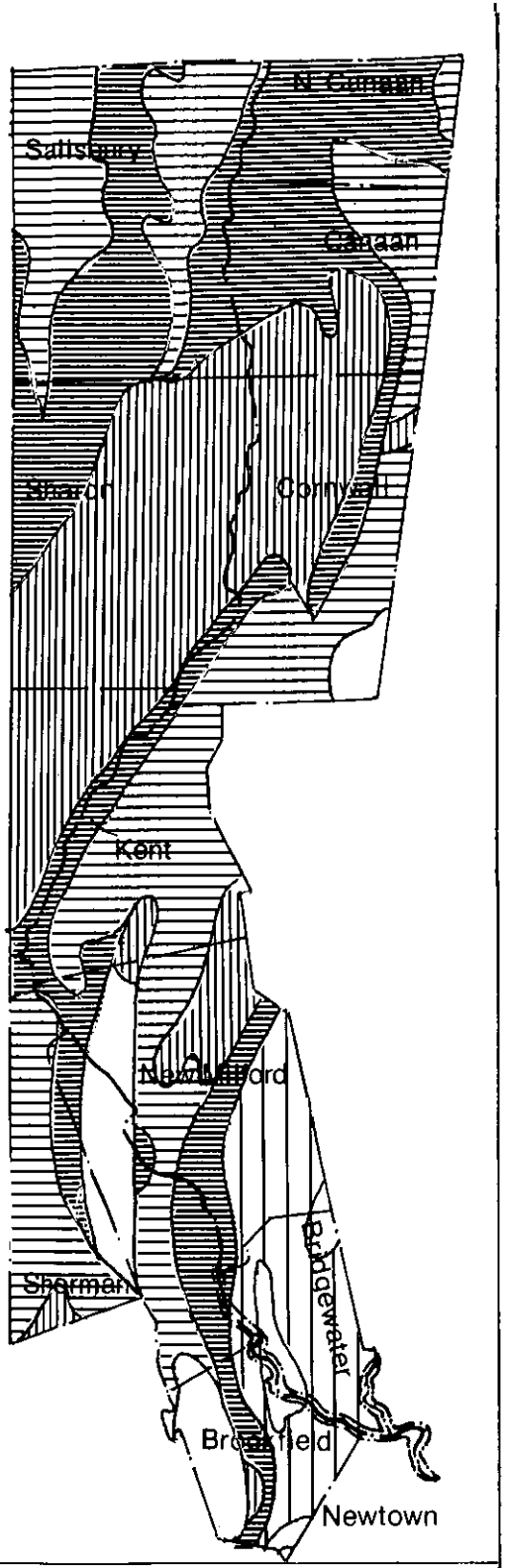
Millions of years of erosion

during the last million years, in the Pleistocene epoch, the Ice Age began. Masses of grinding and crunching ice moved into Connecticut, advancing and retreating at least twice and quite likely four times. As the ice left each time, the path cut by the river was altered, especially within the less resistant marble areas. One interglacial stage found the river flowing through the large lakes in Salisbury and then looping into New York State in the Ten Mile River System before rejoining the present course near Bulls Bridge. Evidence also exists of an earlier path north of Falls Village through the Hollenbeck River, east of the present Housatonic and eventually back to the current valley at Cornwall Bridge.

The glaciers also created various landforms which are evident in the valley. Those composed of sand and gravel deposits and in the form of sinuous ridges or mounds are known as terraces, eskers and kames. The hard packed material below these sand and gravel deposits is consolidated glacial till which forms elongated hills in some places that are known as drumlins.

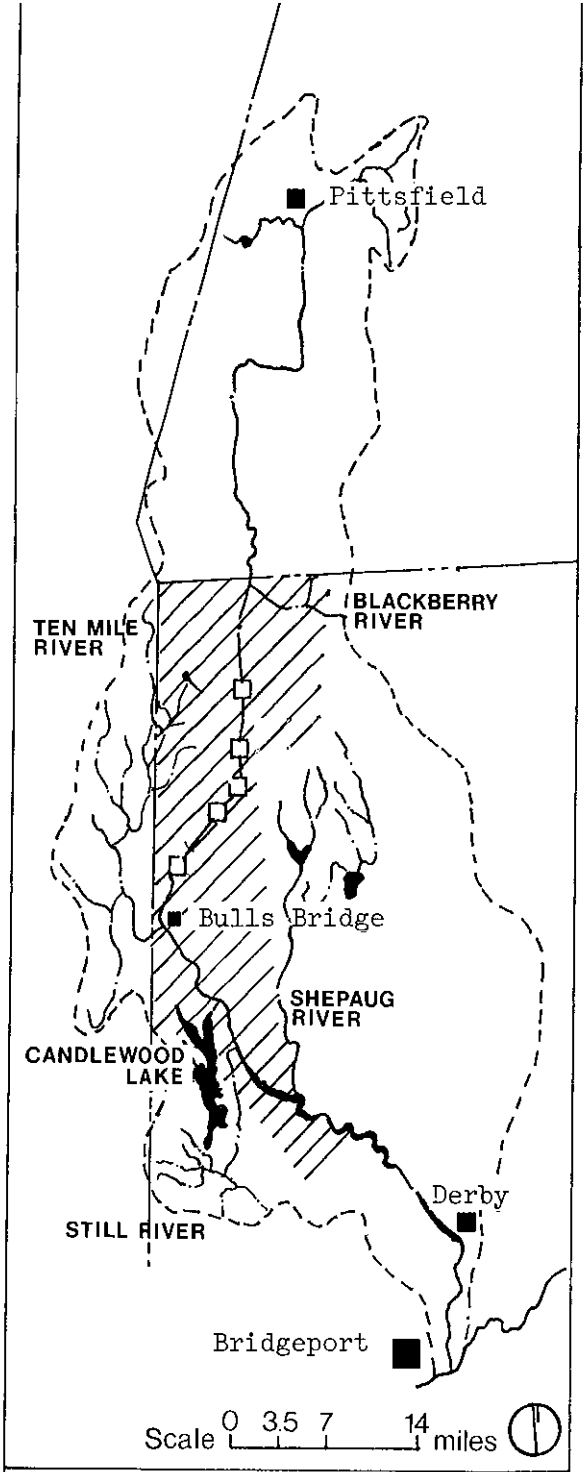


Source: King's Mark Resource Conservation and Development Plan.



The Housatonic River Basin extends from Connecticut into Massachusetts and New York, and is comprised of 1950 square miles. The river itself is formed by the confluence of the East Branch and West Branch Housatonic Rivers at Pittsfield, Massachusetts. It follows a generally southerly course for 36 miles through Massachusetts and 30 miles through northwestern Connecticut to the vicinity of Bulls Bridge, where it turns and flows southeastward for 53 miles to tidewater at Derby. It then continues for 13 more miles to its mouth at Long Island Sound, 4 miles eastward of the city of Bridgeport.

The study segment of the river is a 1232 square mile area in Connecticut, located in the upper Connecticut portion of the basin. Five of the seven major tributaries enter the river in this area. These are the Blackberry River, the Ten Mile River, the Rocky River (Candlewood Lake), the Still River, and the Shepaug River. This area also includes five of the eight major aquifers in the basin. These are located at Preston Brook, Gunn Brook, Millard Brook, Mauwee Brook, and Macedonia Brook.



MAP6:HYDROLOGY

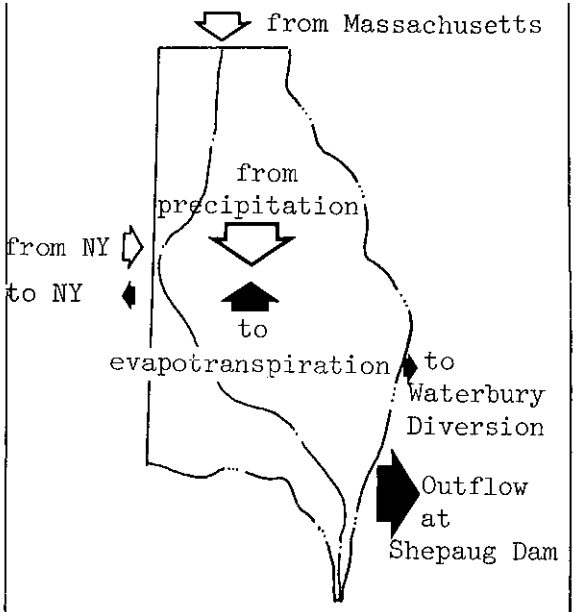
The Study Area

Aquifer Locations

study segment of the Housatonic is 840 billion gallons. Direct precipitation accounts for 66% of this water budget, while 34% is attributed to streamflow from New York and Massachusetts. Only 568 billion gallons per year, however, are released from the study area through the Shepaug Dam. The remaining 272 billion gallons in the water budget leave the study area through a diversion for the city of Waterbury, run-off to New York State, and the natural evaporation and transpiration processes.

The Housatonic has been considered as a potential source of water supply for Connecticut in a recent U.S. Army Corps of Engineers report. It discusses the potential for developing 100 million gallons of water supplies per day from the river's existing power impoundments, should Connecticut change its policy of developing supplies only from these sources which do not receive treated wastes.

The gradient of the river in Connecticut is generally steeper and more evenly sloped than it is in Massachusetts. From Falls Village downstream to Derby, the river drops 534 feet in 63 miles which includes a natural fall of 95 feet in 2 miles near Bulls Bridge. In addition, this river segment includes the Shepaug Dam which accounts for 97 feet of fall, and the Stevenson Dam which accounts for 68 feet of fall. The average slope of the river in this area, excluding these three steep drops is 4.9 feet per mile. By contrast, the Massachusetts portion of the river has an average slope of 1.4 feet per mile excluding the 280 foot natural fall in 21 miles at Great Barrington and the 99 foot natural fall in 2 miles at Falls Village.



	GAINS		LOSSES
Precipitation	556	262	Evapo-trans
From Mass.	220	568	Outflow at Shepaug Dam
From New York	64	1	To New York
		9	To Waterbury
TOTALS	840	840	

Above figures in billion gallons per year.

TABLE 1: AVERAGE ANNUAL WATER BUDGET FOR THE UPPER HOUSATONIC RIVER
Source: Water Resources Inventory of Connecticut: Upper Housatonic River Basin, Part 6, USGS, 1972

Streamflow rates for the Housatonic River are slightly lower than those for other rivers in Connecticut. The average annual discharge for the study segment is 1072 cfs (cubic feet per second) at Falls Village and 1651 cfs at Gaylordsville, which is sufficient for canoeing, which requires 700 cfs in this area. Seasonal variations in steamflows however, cause lower flows to occur in the summer months when water is lost by

of the river indicate that the average seven day-ten year low flows are 120 cfs at Falls Village and 170 cfs at Gaylordsville. These are natural low flows averaged for a seven day period and having a recurrance interval of ten years.

Floods may occur in the upper Housatonic River basin in any season of the year. Spring floods are common and sometimes accompanied by destruction from moving ice. Floods in later summer and fall are usually the result of hurricanes or other storms. Winter floods result from occasional thaws, particularly in years of heavy snowfall.

Flood records at Falls Village indicate the mean annual flood to be 6,600 cfs and to reach an elevation of 537 feet. At Gaylordsville, the mean annual flood is 11,000 cfs, reaching 246 feet in elevation. The maximum flood of record on the river above Kent occurred on New Year's Day, 1949. Below Kent, the maximum flood of record occurred in August 1955.

The existing water quality classification of the Housatonic River was downgraded from Class B to D when it was discovered that PCB (polychlorinated biphenyl) concentrations in Housatonic fish exceeded limits set by the United States Food and Drug Administration. The PCB count varied from more than 35 to less than one part per million in fish. In 1977, the Connecticut Department of Health placed a health advisory against eating fish from the Housatonic.

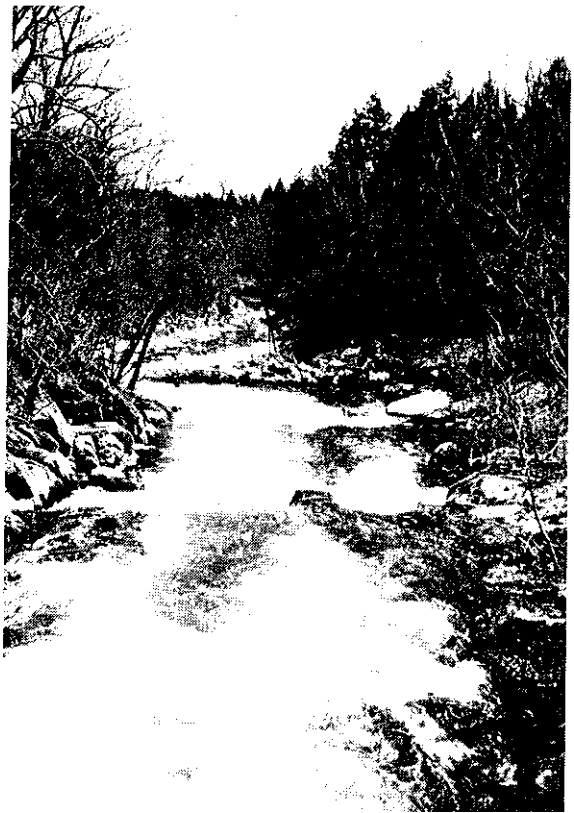
Although the State of Connecticut Water Quality Standards Classification (September 1977) lists the anticipated conditions of the Housatonic as Bsb (suitable for bathing and other recreational activities) by November 1979, the PCB problem in the Housatonic will not actually be solved by that time.

A special act of the Connecticut Legislature (78-50) appropriated an initial $200,000 by the Department of Environmental Protection for planning to solve the PCB problem in the Housatonic. This allocation was in response to strong interest in restoring water quality in the Housatonic. A portion of the initial effort will be to determine the health effects of PCB's. The Health Department will examine the biochemical effects of PCB's on

Discharges of PCB's from the General Electric plant site upstream in Pittsfield, Massachusetts have been virtually eliminated and cleanup operations are underway under the NPDES permit schedule. After April 1, 1979 the permit will limit levels to 10 parts per billion. Connecticut is evaluating potential problems from, and seeking solutions to, residual PCB's in landfills, sediments and other sources.

Since efforts are underway to solve this specific problem, it should in no way detract from designation under the Wild and Scenic Rivers Act.

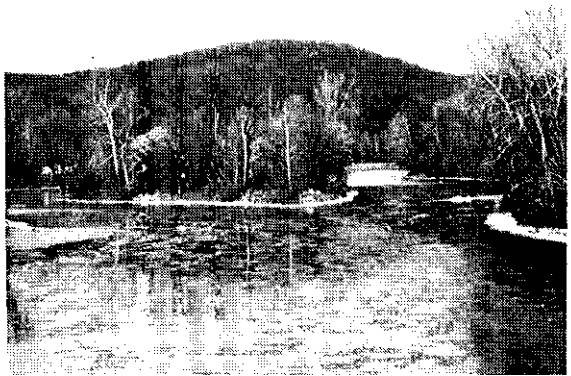
In addition to PCB's, there are several other water quality problems in the study segment of the Housatonic. In Lake Lillinonah an algae bloom occurs every summer due to high phosphorous levels in the water. Near the village of New Milford, the turbidity of the water is quite noticeable. Above Falls Village, stream-bank erosion due to agricultural practices have contributed to sedimentation of the river. Non-point source pollution due to agricultural practices may be present not are unknown. Industrial plants and municipal sewage treatment plants along the river and its tributaries in Massachusetts and Connecticut discharge waste materials into the river. The Still River, a major tributary in New Milford, is a pollution source to be considered. All of these pollution problems are recognized by the water quality control agencies in Connecticut and Massachusetts and are addressed in their programs to maintain and improve water quality throughout the



Climate

The Housatonic River valley has a humid continental climate, classified as a snow-forest type with warm summers. The prevailing westerly wind, blowing from the southwest in the summer, but from the northwest during other periods, is often interrupted by the arrival of maritime air from the Atlantic Ocean to the south and east. Mean temperatures generally average about 70°(F) in July and 24°(F) in January. Weather is seldom excessively hot, and prolonged periods of extreme cold are rare. Rainfall is plentiful in the area and well distributed throughout the year. The average annual rainfall ranges from 44 to 52 inches. Snowfall varies considerably from season to season and averages about 45 inches in the Lake Lillinonah area to about 75 inches above Falls Village.

In the Housatonic River Basin, climatic conditions differ quite markedly from north to south. The southern portion of the basin has fairly hot summers and relatively mild winters; whereas the northern portion has shorter, cooler summers and much colder winters. The following table of temperature, precipitation and snowfall summarize the climatic conditions of the river basin.



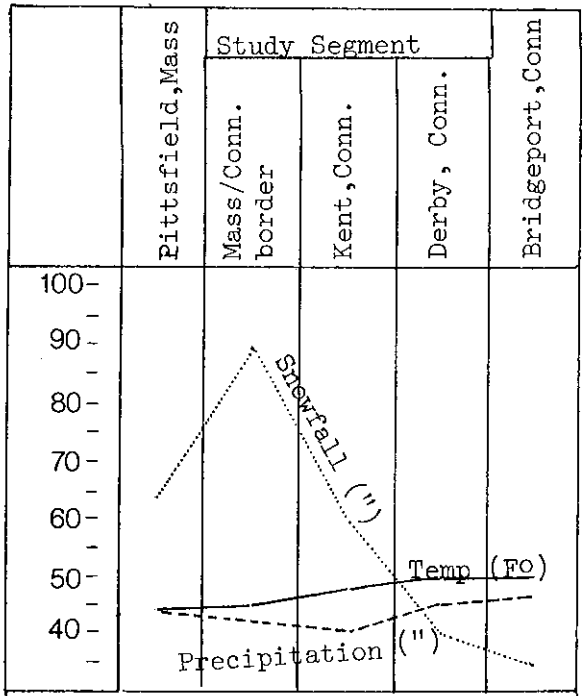
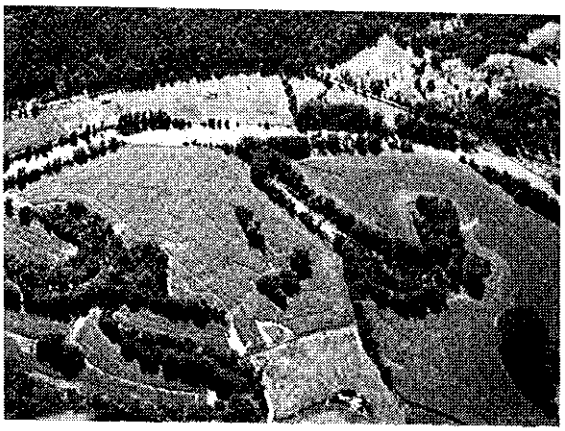


TABLE 2: AVERAGE CLIMATIC CONDITIONS
Source: The Resources of the New England/N.Y. Region, Pt. II,

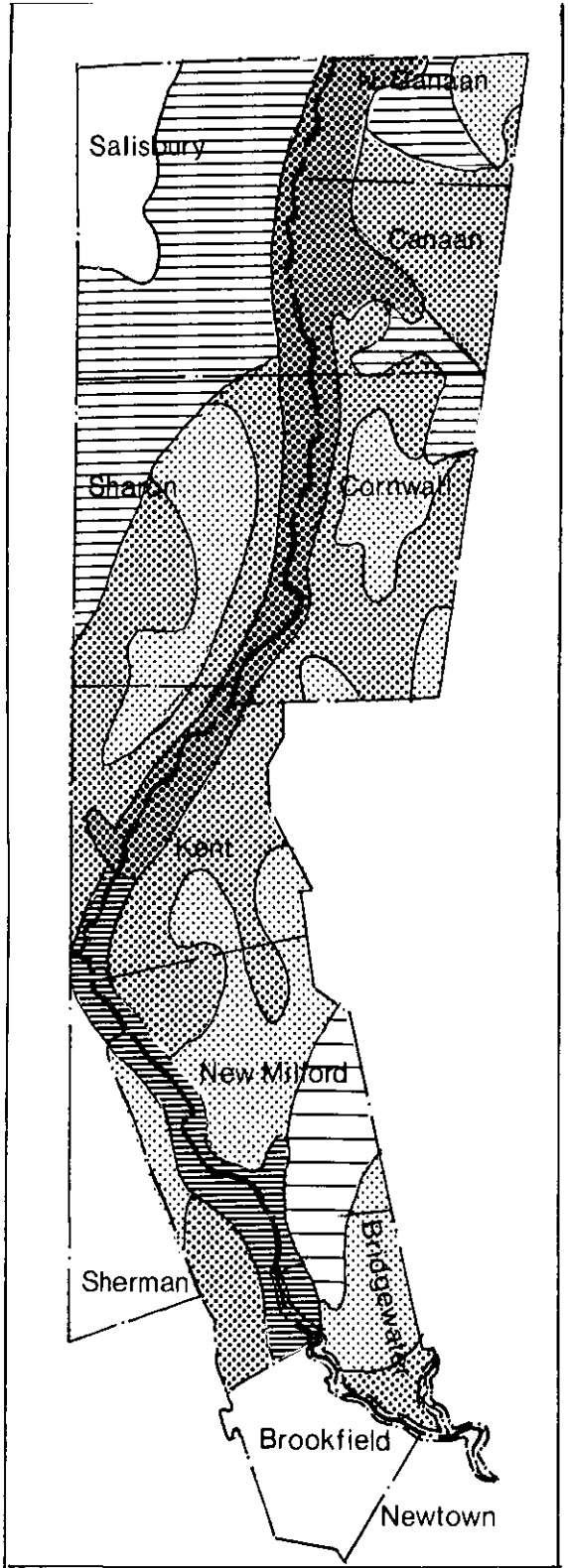
Soils

Soils in the Housatonic Valley have been formed by the weathering and erosion action of the area's climate on its bedrock materials and glacial deposits. Generally, the soils of the valley can be grouped into six major associations which are defined by the pattern of soils in the area, and which are described according to general location, slope, permeability, depth to bedrock, and parent material. These characteristics are important in understanding the soils of an area because of their direct relationship to land use and vegetation patterns.



- Copake-Groton-Genessee
- Hinckley-Merrimac-Hartland
- Stockbridge-Farmington-Amenia
- Hollis-Charlton
- Charlton-Paxton-Hollis
- Paxton-Woodbridge

Source: Soil Survey, Litchfield County, Conn., U.S.D.A., 1970.



the Housatonic Valley above Kent are occupied by the Copake-Groton-Genesee Association. These well-drained soils are generally level to sloping or undulating, and have been derived from limestone and schist. About 60% of this association has been cleared and is used mainly for farming or is idle. In fact, these soils are among the better ones for farming on terraces and flood plains in Litchfield County. The rest of the association is in forest, home sites, estates and industrial development.

The area to the west of the river and above Falls Village is occupied by the Stockbridge-Farmington-Amenia Association, most of which is gently sloping to steep, well-drained, deep soils formed in limestone glacial till and schist. This association includes some of the better upland soils for farming in Litchfield County and are generally well suited to crops grown in support of the dairy industry. About 60 percent of the acreage consists of open fields for dairying, but some areas are used for summer cottages, camps, and year round residences.

Most of the uplands of the river valley below Falls Village are occupied by the Hollis-Charlton Association and the Charlton-Paxton-Hollis Association. Both of these soils are generally gently sloping to steep, and include rocky soils which are shallow to bedrock, and deep, well-drained soils formed in glacial till. The Hollis soils are most notable in the area for their shallow nature which produces prominent bedrock outcrops in the ridges along the river.

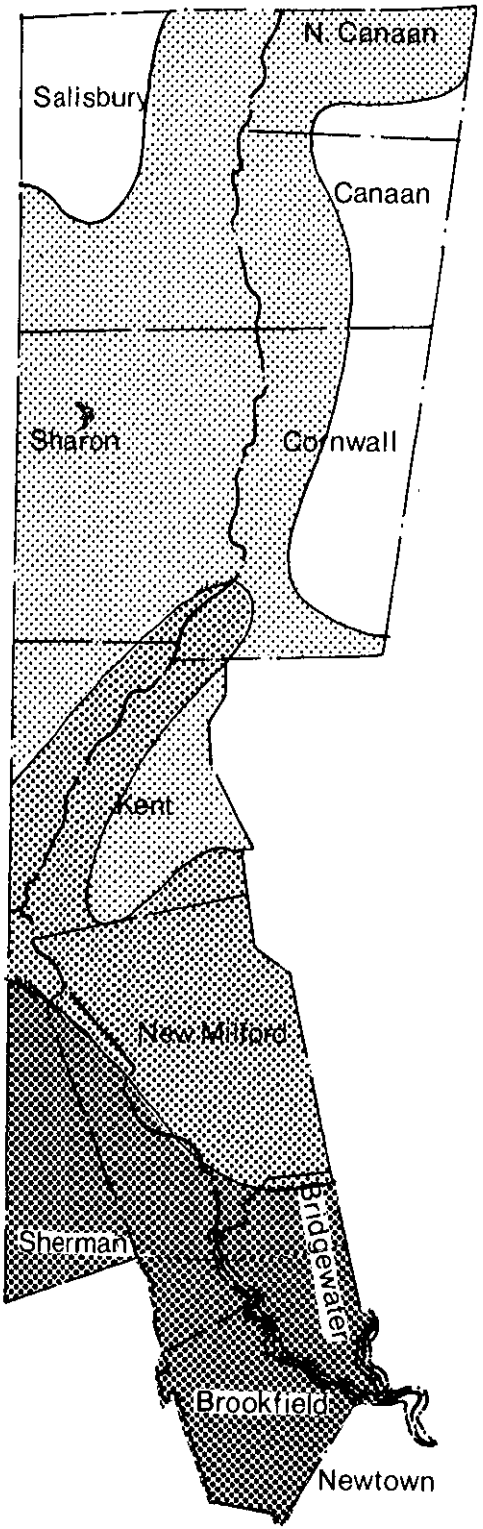
Most of the land in these two associations is covered with cut over forest, although 40% of the Charlton-Paxton-Hollis Association has been cleared and is used for dairy farming and orchards.

From Kent downstream to Lake Lillinonah the Housatonic River valley lowland is occupied by the Hinckley-Merrimac-Hartland Association, while the uplands continue the Hollis-Charlton and Charlton-Paxton-Hollis Associations described above. Soils in this area are nearly level or undulating to sloping, but commonly they are steep on terrace breaks, developed in deep deposits of sand and gravel, and are excessively well drained. A large percentage of this association has been cleared and is used for vegetable crops, nursery stock, and crops for dairy farming. The rest of the cleared area is idle or used for housing and industrial sites.

A small upland portion of the river valley near the village of New Milford is occupied by the Paxton-Woodbridge Association. These soils are gently sloping to steep, well drained, formed in glacial till, have a fragipan layer, and are located in an area of elongated drumlins. Much of this acreage is used for crops in support of dairy farming, and the rest is cutover forest used for homesites or is idle. Future residential developments in this area should be carefully planned since these soils are severely limited for onsite sewage disposal systems.

Vegetation

The major vegetation associations of the Housatonic Valley reflect the patterns of geology, soils and climate in the area as they gradually change from the northern to southern limits of the study area, and as they provide habitats for several species which are rare in Connecticut and New England as a whole. These qualities of the valley's vegetation provide a visually pleasing setting for the river and add to the scientific and educational value of the area.



Transition Hardwoods: White Pine - Hemlock Zone

Central Hardwoods: Hemlock - White Pine Zone

Central Hardwoods: Hemlock Zone

Source: King's Mark Resource Conservation and Development Plan.

0 2.25 5.5

Above Cornwall Bridge, the Housatonic river passes through a transition Hardwoods-White Pine-Hemlock zone, whose dominant hardwoods are Northern Red Oak, Basswood, White Ash, and Black Birch. Hemlock and White Pine are also frequent and locally dominant. A number of northern bog and forest species reach their extreme southern range limits in this area's cooler habitats. Some rare plant species of this region are Bog Rosemary, Marsh Willow-Herb, Canada Violet, and Stiff Club-moss.

The next vegetation zone of the river is the Central Hardwoods-Hemlock-White Pine, which occurs from Cornwall Bridge downstream through Kent and into New Milford. The dominant species in this association are several Oaks (Red, White, and Black) and Hickories (Shagbark, Pignut, and Bitternut). Chestnut was formerly a major tree species here, until the Chestnut Blight of the 1920's. Stump sprouts of Chestnut are still common in this area. White Pine and Hemlock are frequent and locally abundant to dominant. Some characteristic rare plants in this area are New England Grape, Hairy Wood-Mint, and Wiegand's Wild Rye.

The scientific and educational value of the vegetation in the Housatonic valley is attributed to the occurrence of critical habitats which support a variety of plants that are scarce to absent over the rest of the state and parts of New England. These critical habitats include marble ridges and ledges, and calcareous wetlands whose vegetation is uniquely suited to the marble or carbonate rocks that occur in the Housatonic valley, yet are of extremely restricted occurrence in the rest of the state. Several of these sites have been proposed for Connecticut's Critical Biological Area status.

The most southern portion of the study area is located in the Central Hardwoods - Hemlock Zone, whose dominant tree species are Oaks (White, Red, and Black), Hickories (Shagbark, Bitternut, Mockernut, Pignut), Yellow or Tulip Poplar, Black Birch, White Ash, and Hemlock. White Pine is generally absent to scarce in this region, although it does occur on dry ridges and sandy soils with Scarlet and Chestnut Oaks. Some rather rare plant species of this region are the Green Violet, Small Shorled Pogonia, Virginia Snakeroot,

The Housatonic Valley contains an abundant wildlife population owing to the diverse habitats of the area's agricultural lands, woodlands, wetlands, and overgrown abandoned fields. Woodland species include white-tailed deer, gray fox, gray squirrel, snowshoe hare, porcupine, ruffed grouse, and woodcock. The openland habitat supports ringnecked pheasant, cottontail rabbit, red fox, and woodchuck. River oriented mammals are primarily furbearers such as beaver, muskrat, raccoon, river otter and mink. Waterfowl present in the area include canada goose, mallard, blackduck, woodduck, blue-winged teal, ringnecked duck, common goldeneye, and hooded and common merganser. Other species, mainly amoung the small mammals, songbirds, and raptors, also inhabit the area.

The State of Connecticut owns 6000 acres in the Housatonic area for wildlife management which are located in Canaan (Robbins Swamp Wildlife Management Area), in the Housatonic State Forest (Sharon Mountain Block), and in Cornwall (Cream Hill Block). Management in these areas includes a program to re-establish populations of wild turkey.

The Housatonic valley supports several rare and endangered Connecticut mammal, amphibian, and reptile species including the Deer Mouse (Peromyscus manicplatus), Eastern Woodrat, Slimy Salamander, Northern Spring Salamander, Four-Toed Salamander, Mud Puppy, Eastern Spadefoot, Fivelined Skink, Bog Turtle, Blanding's Turtle, Eastern Mud Turtle, Rough or Keeled Green Snake, Eastern Smooth Green Snake, and the Northern Red-Bellied Snake. Any birds, which are listed as rare Wren, Eastern Bluebird, Parula Warbler, Magnolia Warbler, and Myrtle Warbler. U.S. Endangered species include the Peregrine Falcon, Bald Eagle, Eastern Cougar, Indiana Bat, Atlantic Ridley Turtle, Hawksbill Turtle, and Leatherback Turtle. The U.S. Threatened species include the Bog Turtle, Green Turtle, and Loggerhead Turtle.

Fisheries

The Housatonic River supports an excellent cold and warm water fishery owing primarily to the diverse stream habitats, the state trout stocking program, and the generally excellent water quality.

Within the limits of the study area, the river contains three distinct fish habitats. Above Falls Village, the river is slow moving with a low gradient and supports carp, largemouth and smallmouth bass, bullheads, yellow perch, suckers, sunfish, and various minnows. The middle stretch of river between Falls Village and Kent is a pool and riffle stream which is stocked with brook, brown, and rainbow trout. Below Kent, the river is primarily a bass stream, especially in Lake Lillinonah although there is a pool and riffle stretch near the Ten Mile River.

The trout stocking program on the Housatonic and its tributaries has been quite extensive. Approximately 20,000 brook, brown and rainbow trout have been placed in the river annually by the State of Connecticut in conjunction with the Housatonic Fly Fishermen. After the discovery of PCB's, stocking dropped to 6,000 fish annually. During the past year stocking has

over rates for all three species of trout is about ten percent and their growth rate is about three to six inches per year. Good growth rates are attributed to the return of aquatic insects in the last few years. Natural reproduction of trout does occur in the area, primarily in the better tributary streams. In general, water quality of the river appears to be quite good for the survival of trout and other species. Water temperature is usually 70°F or less and dissolved oxygen levels are generally 7 ppm or greater. The comeback of aquatic insects in the past few years also indicates good water quality for the survival of fish. The high levels of PCB's in the river, however, are of concern from a fish and wildlife viewpoint for their possible infiltration of the natural food chain. Large concentrations of this substance in fish, bird or mammal tissue could lead to reproductive failures and/or mortality of the animals themselves.

Critical Habitats

The geology, topography, soils, hydrology, climate, vegetation, wildlife and fish of the Housatonic River and its valley provide both the general scenic, natural character of the area, and the unique environmental conditions of certain specific areas. These "critical habitats" were identified in a natural areas inventory of Connecticut and are special areas that support species of plants and/or animals that are rare (i.e. occur sparingly) or local (i.e. occur at isolated localities) in their occurrence. They are included here to identify the most outstanding environments of the valley formed by the natural processes of the area.

Marble Ridges and Ledges. These are exposed faces of marble projecting above the surrounding terrain or in deep river cut ravines, with unusually large concentrations of rare, state endangered or very uncommon plant species. Ferns are especially notable in these areas and generally include the rare Narrow-leaved Spleenwort, the North American Wall Rue, and the State endangered Slender Cliffbrake. Habitats of this type occur on the Housatonic River at Great Falls, (Canaan), Bulls bridge (Kent), and Point of Rocks (Canaan), all of which have been recommended as Critical Biological Areas in the State.

Marble Caves. These are solution caves in marble and limestone formations. Not much is known specifically about the species present in these caves, but it is possible that they could support the U.S. Threatened Indiana Bat. Some of the marble and limestone caves in the Housatonic area are: Devantery's Cave, Warner's Cave, Lost Brook Cave, and Bashful

Calcareous Wetlands. These are swamps and marshes occurring in marble valleys which support a lush and diverse flora, including a number of Connecticut's rare and very uncommon plant species. The Spreading Globe-flower a species which has been proposed for U.S. Endangered status by the Smithsonian occurs in this habitat, as well as the State-endangered Showy Lady's slipper and native Northern White Cedar. Generally these wetlands attract many birds of both game and non-game species. The major example of a calcareous wetland in northwest Connecticut is Robbin Swamp in Canaan and North Canaan which is a potential National Natural Landmark and a proposed Critical Biological Area in the State.

Marl Lakes and Ponds. These are bodies of basic or "hard" water, as opposed to the common acid or "soft" water of the region. These ponds contain many unique aquatic plants, which are generally common in the Midwest, but relatively rare in New England. Examples in the Housatonic area are Twin Lakes in Salisbury and Mudge Pond in Sharon.

Flood Plain Forests. These are forests communities dominated by Cottonwood, Black Willow, and Silver Maple that were once abundant in the region until they were extensively cleared for agriculture. Remnants of these forest occur only along a few major rivers in the State including the Housatonic from Falls Village to Kent. Several rare and very uncommon plant species found here, are Box Elder, Ostrich Fern, and Verigated Horsetail. Songbirds occur in great diversity in these forests and include the State rare Parula Warbler.

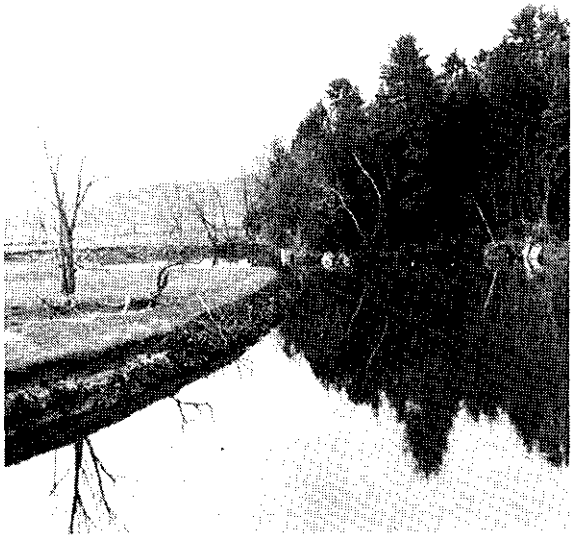
High Summits. These are wind swept mountain summits of granite, schist, or gneiss which are only sparsely vegetated with low-growing woody or herbaceous plants, lichens, and mosses. Some of these plants are quite rare south of Central Vermont and New Hampshire. Examples of this habitat in the Housatonic Valley are Canaan Mountain (Canaan), Bear Mountain (Salisbury), Mohawk Mountain (Cornwall), and Schagticoke Mountain (Kent).

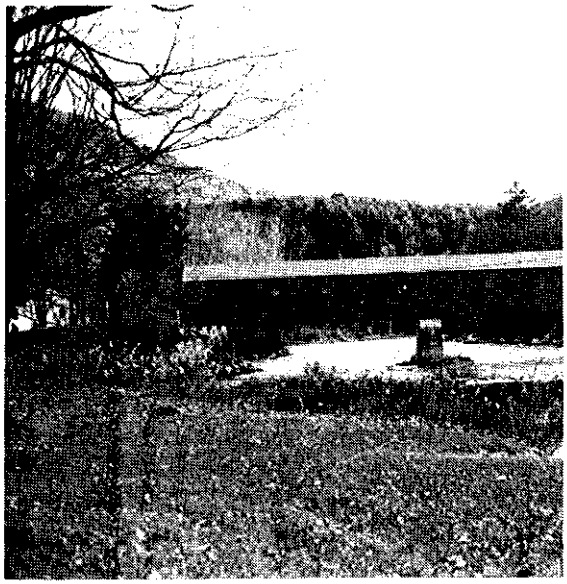
Black Spruce Bogs. These are poorly drained acid wetlands which have developed in deep glacial depressions and are characterized by a luxuriant cover of mosses, an abundance of Ericaceous (Heath) shrubs, and the presence of Black Spruce and Larch. In addition, many other species of distinct northern or boreal affinities, generally absent from the region as a whole, are commonly present in these communities. Excellent examples in the Housatonic area include Bingham Pond (Salisbury) and Spectacle Pond (Kent).

Grasslands. These areas include croplands, pasturelands, hayfields, grassy meadows and lawns which are generally decreasing in size and quality throughout the Housatonic area. Several of Connecticut's rare breeding birds are strictly limited to this habitat, including the Short-Billed Marsh Wren.

The settlement pattern of the Housatonic Valley today, reflects the area's rural-agricultural heritage, colonial charm, natural resources, and economic and cultural activities. This view of the Housatonic valley provides a picture of what is there today, its general development trends for tomorrow, and how the area has developed historically.

covered bridges, and colonial stone fences. In this area, the two lane paved highway, Route 7, and the abandoned Berkshire Railroad line enter the valley and generally parallel the river until they reach the village of New Milford, where both turn south towards Danbury. In the southern portion of the river valley, the evidence of residential, commercial and industrial activities increase, especially near the village of New Milford where sev-





LAND USE

The visual appearance of the Housatonic valley changes from the northern to southern edges of the study area. In the northern valley above Falls Village, large fields of crops and pastureland can be seen, especially in the flood plain areas. Below Falls Village, the valley makes a transition to the forest-town landscape of Cornwall, Sharon and Kent with its pictur-

eral industrial plants are located in the flood plain areas. Below this point, however, the river returns to a scenic forested landscape on the shores of Lake Lillinonah, although summer cottages and suburban development are evident in places.

This visual transition of the valley from a rural-agricultural area in the north to a suburban-industrial area in the south is substantiated in land use data for the region. In 1970, the Northwest Connecticut Planning Region, which includes the study area towns above New Milford, contained only 4% developed land as compared to 17% developed land in the Housatonic Valley Planning Region which encompasses the study towns below Kent. Woodland and

LAND USE	N.W. Conn. Planning Region (above New Milford)	Housatonic Valley Planning Region (below Kent)
Residential	3.4%	14.6%
Commercial	0.2	0.7
Industrial	0.0	0.5
Transp., Inst., & Utilities	0.3	1.1
Recreational	0.6	0.5
Agriculture & Forestland	15.3	9.3
Woodland & Open Space	80.2	73.3
TOTAL ACRES	230,897	215,881

TABLE 3: LAND USE - NW Conn. and Housatonic Valley Planning Regions
Source: A Plan of Conservation & Development in Connecticut, 1974

open space land uses, however, occupied a significant portion of both the northern and southern planning regions, 80 percent and 73 percent respectively, which reflects the overall natural condition of the Housatonic valley throughout the study region.

Population

Population distribution and trends in the study area reflect the visual and topographic transition of the valley from north to south, and the general land use pattern in the region.

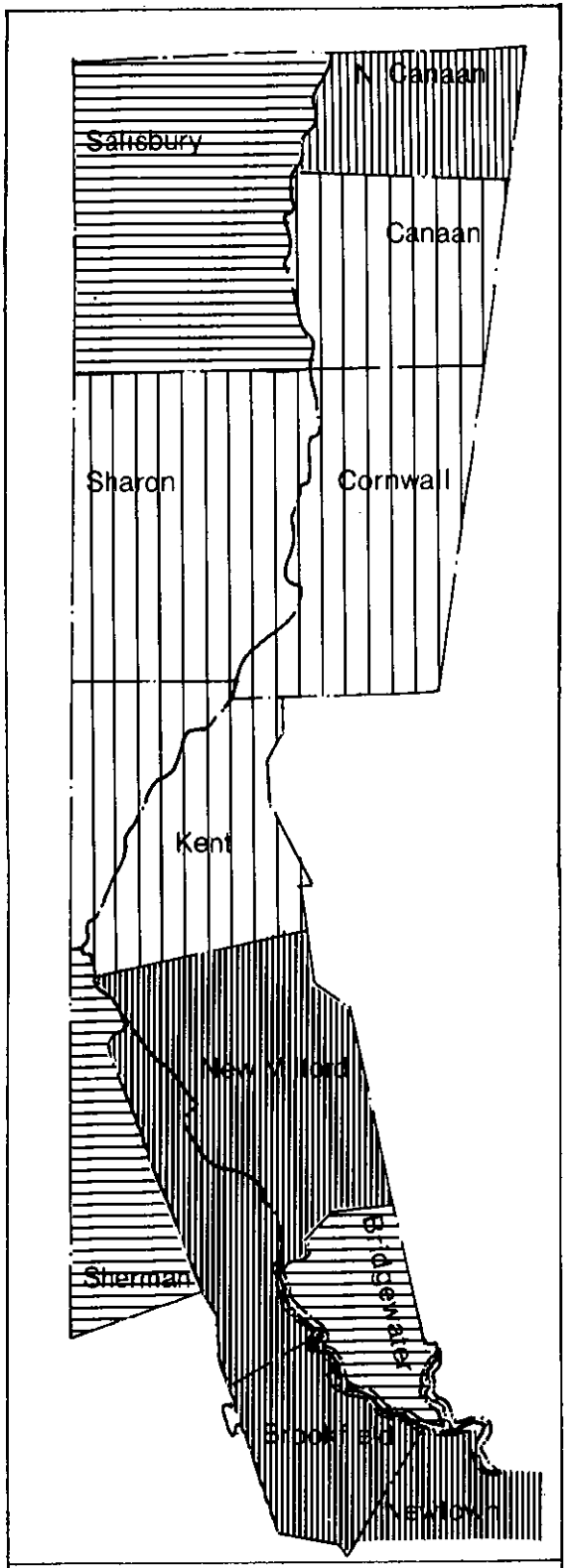
In 1970, the total population in the study towns was 57,000 people at an average density of 120 persons per square mile. The greatest concentration of people, however, occurred in the southern towns below Kent where 77% of the population resided at 245 persons per square mile. The agricultural towns near Falls Village averaged only 54 persons per square mile and the forest-town area of Sharon, Cornwall and Kent average an even

Population projections to the year 2000 indicate a 45% increase in the study area, with the greatest rate of growth expected in Sherman and Kent, at 92 and 76 percent respectively. This phenomenal growth rate in the lower study area towns is attributed to continued expansion of the Danbury metropolitan area where major highway improvements have attracted new industry, and which was recently ranked as the 11th fastest growing metropolitan area in the nation.

Study Area Towns	Population 1970	2000	% Change
Salisbury	3573	4700	31.5
N. Canaan	3045	3500	14.9
Canaan	931	1200	28.8
Sharon	2491	3500	40.5
Cornwall	1177	1400	18.9
Kent	1990	3500	75.8
Sherman	1459	2800	91.9
New Milford	14,601	22,000	50.6
Bridgewater	1277	2100	64.4
Brookfield	9688	15,000	54.8
Newtown	16,942	23,000	35.7
TOTAL	57,174	82,700	44.6

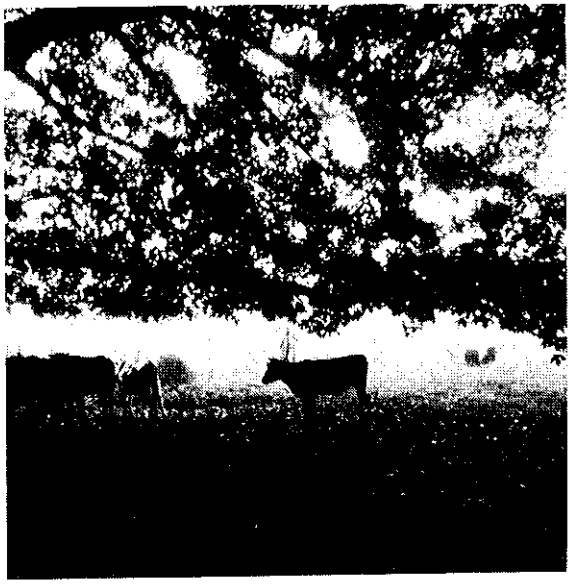
TABLE 4 : POPULATION PROJECTIONS- 1970 - 2000
Source: Population Projections for Connecticut Planning Regions and Towns, Dept. of Planning & Energy Policy, June, 1976.

Density Class	Town	1970 Density
0-50	Cornwall	25.3
	Canaan	28.1
	Kent	40.6
	Sharon	41.6
50-100	Salisbury	62.0
	Sherman	66.3
	Bridgewater	78.3
100-200	N. Canaan	155.3
200++	New Milford	232.5
	Newtown	289.6
	Brookfield	494.3



Agriculture

Agriculture is one of the most important economic activities in the study area. In 1974, there were 591 farms in Litchfield County, occupying 19% of the land and having an average size of 185 acres. Dairy farming is the leading agricultural industry in the area, although fruit farms, poultry farms, beef production and nurseries are also active. Most farm crops are produced in support of the dairy industry.



Along the Housatonic River, farming is quite evident, especially in the broad flood plain above Falls Village, and in Kent and New Milford. In the six towns above New Milford, 10% of the active dairy farm land is located along the river.

Pressure to convert farm land to other uses is beginning to be felt in the valley. Between 1969 and 1974, the number of farms in Litch-

Efforts to relieve these pressures have been made through Connecticut's Public Act 490, which protects farm land from prohibitive taxes that might force its conversion to more intense uses. Most of the farm land in the Housatonic study area is participating in this program.

Forestry

Forests are an abundant resource in the study area, although their potential for timber production is greatly under utilized. In 1972, 67%(399,100 acres) of the total acreage of Litchfield County was classified as commercial forest by the U.S. Forest Service. This is land that is producing or capable of producing crops of wood and is not withdrawn from timber utilization by statute or administrative order.

The volume of timber on commercial forest land in Litchfield County averages 1600 cubic feet per acre for growing stock, and 3600 board feet per acre for sawtimber. Both of these figures are higher than the averages for Connecticut as a whole of 1300 cubic feet of growing stock per acre, and 2700 board feet of sawtimber per acre.

The stand size classes of commercial forest land in Litchfield County favor sawtimber stands which occupy 47% of the area. Poletimber stands occupy 31% of the area and seedling-saplings stands occupy 22%. The optimum situation for sustained yield forest is approximately 30% sawtimber, 30% poletimber, and 40% seedling-sapling. The disproportionate area of sawtimber size stands further substantiates that timber production is not fully active in the area.

Analysis of the benefits derived from commercial forest land in Connecticut also reflects the under utilization of this resource. Between 1970 and 1975 only 4% of the commercial forest land acreage was sold for timber, and projections to 1980 indicate a continuation of this trend. Most landowners cited recreation, land value increase or residential use as their primary reasons for owning forest land.

REASONS FOR OWNING FOREST LAND	OWNERS	ACREAGE
Recreation	19%	22%
Timber Production	6	6
Land Investment	19	20
General Farm Use	9	12
Part of Residence	36	27
Other	11	13
TOTAL	100%	100%

TABLE 5: REASONS FOR OWNING FOREST LAND IN CONNECTICUT
Source: USDA Forest Service Resource Bulletin, NE-41, 1976.

Mining

Sand, gravel and stone resources are excellent in the Housatonic valley and appear to be virtually unlimited in supply for the foreseeable future. Production and use, however, could be curtailed in 20 years if the current rates continue for direct and indirect elimination of this resource by residential, commercial, and industrial development.

Production and dollar value of sand, gravel and stone in Litchfield County have shown a net increase from 1966 to 1975. Combined tonnage of the two commodities increased from about 0.9 million tons in 1966 to almost 1.4 million tons in 1975.

Four or five stone quarries and seven to ten sand and gravel pits are active in Litchfield County. The quarries produce limestone, dolomite, and traprock for agricultural lime and construction aggregate. Sand and gravel was used primarily for construction aggregate and bituminous paving.

In the town of Canaan, high grade dolomite has been quarried and used for production of calcium metal. This metal is used for the removal of impurities in steel making and the production of aluminum, magnesium, uranium oxide and thorium. Agricultural limestone is also produced in significant quantities from this area.

Along the river there are several small sand and gravel pits and stone quarries, according to the U.S. Soil Conservation Service. Most of these are less than 1/4 mile from the river. The larger sites are generally 1/2 to 3/4 of a mile from the river and include one stone quarry and two gravel pits near Falls Village, and one gravel pit near New Milford.

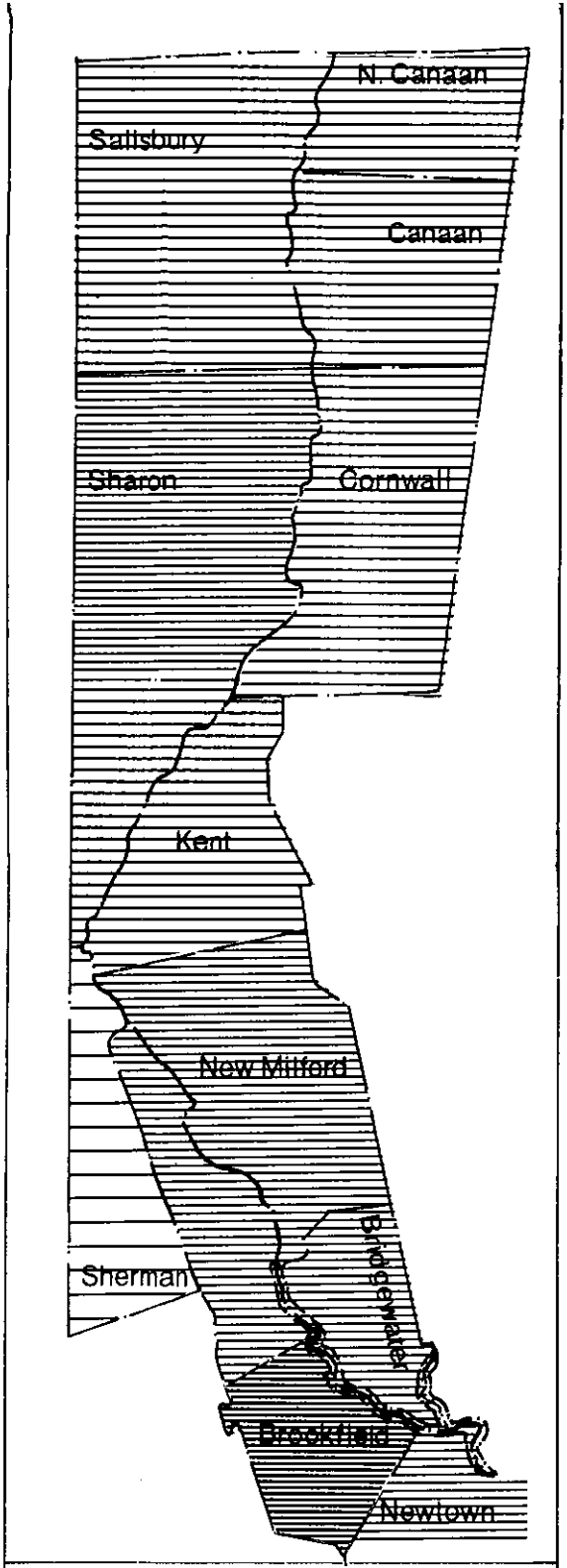
Manufacturing

There are several manufacturing centers in the Housatonic River Basin including Pittsfield in Massachusetts, and the Danbury-New Milford area and the Naugatuck River valley in Connecticut. Within the study area, most manufacturing activity occurs in the village of New Milford where five

manufacturing activity throughout the river basin is projected to continue its steady growth trends of recent years. A 31.6% increase in manufacturing employment in the basin is expected between 1970 and 2000. This trend is expected to have a great impact on the study area towns where manufacturing employment is projected to increase 77% between 1970 and 2000, with the greatest increase projected for the towns of Brookfield and New Milford.

Study Area Towns	# of persons in manufacturing 1970	2000
Salisbury	154	181
N. Canaan	584	672
Canaan	297	342
Sharon	194	323
Cornwall	35	41
Kent	165	195
Sherman	0	0
New Milford	1692	2944
Bridgewater	2	3
Brookfield	251	1430
Newtown	1176	1930

TABLE 6: MANUFACTURING EMPLOYMENT
Source: Housatonic River Basin Plan Dept. Finance & Control, 1972



0% increase

15-20% increase

50-78% increase

470% increase

Source: Housatonic River Basin Plan, Dept. Finance & Control, 1972

MAP 10: MANUFACTURING

There are four hydroelectric generating stations in the study segment of the Housatonic River. These projects are the Falls Village, Bulls Bridge, Rocky River, and Shepaug installations, all of which are conventional hydro facilities with the exception of the Rocky River pumped storage project.

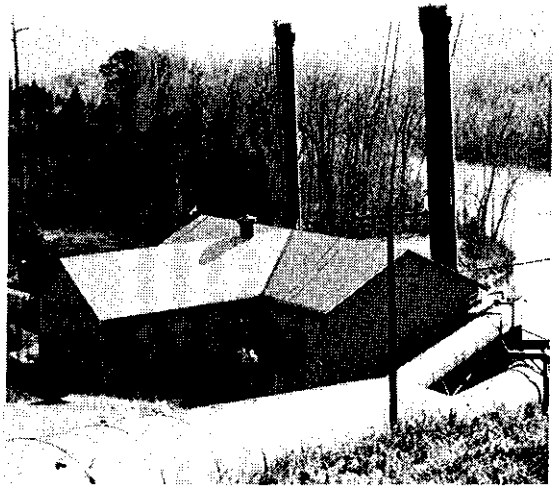
The conventional hydro facilities are all run-of-the-river projects whose reservoirs do not have sufficient storage to materially affect the river flow other than on a daily basis. During high water periods, pondage allows for limited daily peaking operations. Normal operations at each project provide for daily fluctuations in water surface elevation of less than three feet.

Although the operation of these three projects are quite similar, the Shepaug dam and reservoir are much larger than those at Falls

high dam and a 13 mile reservoir having an area of 1870 acres. The Falls Village dam is 14 feet high but backs up the water for less than one mile in an area covering 150 acres. The Bulls Bridge project includes two dams, one of 24 feet in height and one of 17 feet. Its reservoir is 4.5 miles and occupies 120 acres.

The Rocky River installation is a seasonal pumped storage project, drawing down Lake Candlewood from December to February and refilling it during spring high flows in the Housatonic River. This project consists of a dam, located one mile from the river, which is connected to the river by a canal, conduit and penstock. Pumped generation on a diurnal and weekly basis is carried out when the river is flowing at less than 6000 cubic feet per second.

Recently, these four projects came under federal jurisdiction and will be required to apply for a

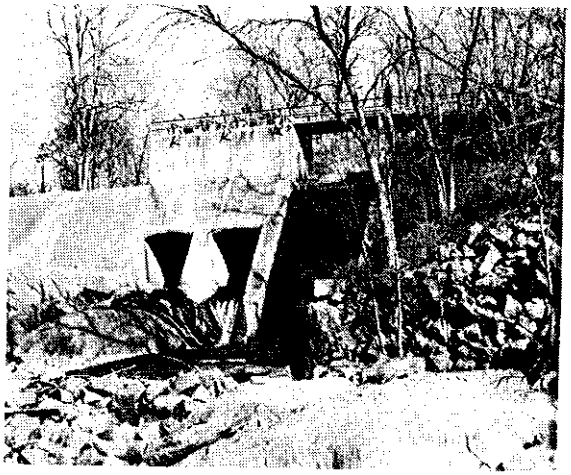


Regulatory Commission (formerly the Federal Power Commission). This application will include a review of all physical and operational aspects of these hydro projects and will include an evaluation of their environmental impacts. In addition, this application will maximize public benefits by encouraging the power companies to prepare plans to enhance the recreational and fish and wildlife values of the project lands in coordination with State, regional and local plans for the area.

In the future, it is unlikely that a new hydro power project would be installed within the study segment of the Housatonic. The 1955 water resources report of the New England-New York Interagency Committee identified several sites on the upper Housatonic that could accommodate a hydro installation of rather limited capacity. It concluded, however, that none of these developments could be economically justified. Office based reconnaissance of the study area by the Federal Energy Regulatory Commission (FERC) identified one site having

A study completed in 1977 by Chas. T. Main, Inc. for The Stanley Works, owner of flowage rights and river frontage beginning at Kent Furnace and extending upstream approximately 5 miles to Swift's Bridge in Sharon-Cornwall, indicated that an 800 megawatt pumped storage installation at Kent was economically feasible. However, the possibility of such installation becoming a reality has been eliminated for the foreseeable future through a 30-year conservation easement conveyed to the Housatonic Valley Association by the Company.

In summary, the current records of the FERC do not indicate any new applications for development of conventional or pumped storage hydroelectric facilities on the study segment of the river.



Recreation

There are many opportunities for recreation along the Housatonic River in Connecticut. These include general tourist activities as well as the more active sports of canoeing, kayaking, fishing, hunting, hiking, and camping.

Tourism is well developed in Litchfield County and the surrounding area, due primarily to its scenic rural character and historical sites. Some of the tourist attractions within the study area towns include the covered wooden bridges at West Cornwall and Bulls Bridge, the Kent Furnace and Sloane-Stanley Museum, Music Mountain, the Sharon Audubon Center, sports car racing in Salisbury, canoe racing near Cornwall Bridge, and several fine country inns and restaurants. In addition, the state is considering a proposal to purchase the abandoned Berkshire line for a scenic tourist railroad excursion through the river valley.

State park and forest lands are the primary sites for active recreation in the study area. Within the study towns there are five state parks and three state forests. Those located directly on the river above New Milford accommodate approximately 174,000 visitors per year.

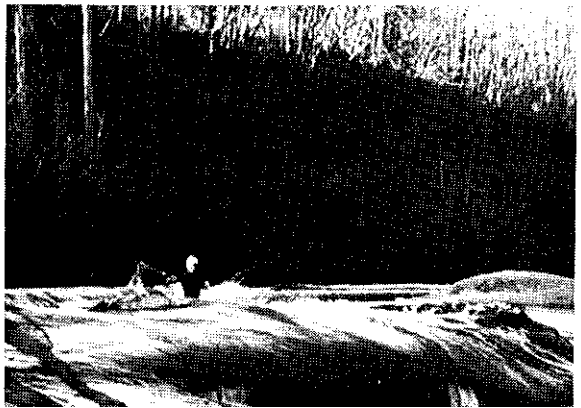
STATE PARKS AND FORESTS	LOCATION	ACREAGE	1976 VISITORS (1000's)
State Park			
*Housatonic Meadows	Sharon	450	72
*Kent Falls	Kent	275	82
Macedonia Brook	Kent	2300	82
Mohawk Mtn.	Cornwall	260	--
Mt. Riga	Salisbury	275	--
State Forest			
*Housatonic	N. Canaan Canaan Cornwall Sharon	16,555	20
*Paugussett	Newtown	850	--
Wyantenock	Kent	300	--

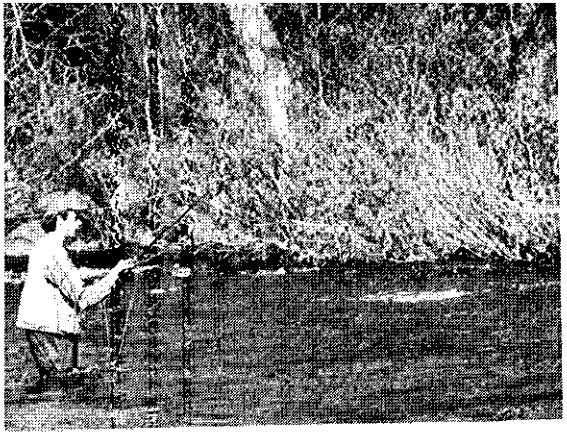
*Located on the Housatonic River

TABLE 7: STATE PARKS AND FORESTS - Housatonic Study Area
Source: Connecticut Department of

The principal area for canoeing is a 20 mile stretch from Falls Village to Kent with a halfway access point at Housatonic Meadows State Park where camping is permitted. This stretch provides a one or two day canoe trip and is rated 2 on a scale of difficulty from 1-7 in New England. In the summer months canoeing must be coordinated with the release of water from the Falls Village dam which generally provides 4 or 5 hours of mid-morning to early afternoon canoeing. The number of canoeists on the river has nearly tripled since 1974, and appears to be reaching its capacity for a pleasant canoeing experience in the late spring and early fall when 450 canoeists can be expected on a typical weekend day. An estimated 75% of these canoeists are from outside Connecticut, especially southern New England and several Mid-Atlantic states.

Kayaking is also very popular on the Housatonic, especially in the scenic gorge below Bulls Bridge. This is a highly challenging area rated at a difficulty of 4 to 6 and considered a premier white water asset in the northeastern U.S. by kayaking enthusiasts, and should be used by experts only, because of the danger involved.





Trout fishing and bass fishing are very popular sports on the Housatonic River, attracting fishermen from all parts of southern New England and western New York State. The Housatonic River is the largest trout stream in Connecticut due to the State's trout stocking program here, and is well known for its three and one half mile "fly fishing only" area. In addition, Lake Lillinonah is one of the best bass fishing lakes in Connecticut. River access is generally quite good, especially in Sharon and Cornwall where the State owns land along the bank, and where the Appalachian Trail parallels the river. Fishing pressures, however, are evident in the spring when it is not unusual to see 300-500 fishermen in the trout stocking area. Estimates generally indicate that in 1975 approximately 2,500 individuals made at least one trip to the Housatonic corridor to fish. This activity will probably decrease in the next couple of seasons due to the contamination of fish by PCB's. As this problem is overcome, however, the popularity of fishing will probably return to its 1975 level. The scheduling of fishing activities is generally compatible with the operation of

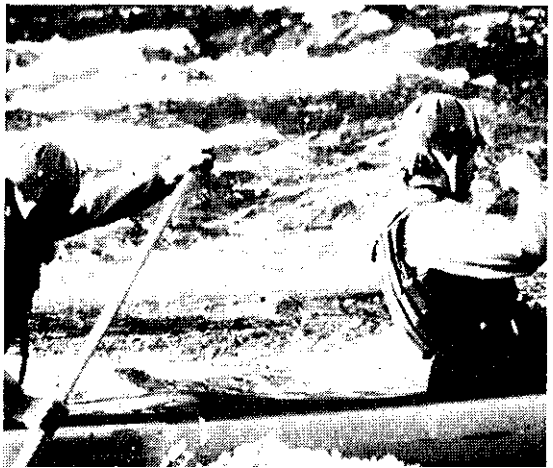
water in the late morning, thus allowing the river to be low and undisturbed in the prime morning and evening fishing times. The release of water also provides a natural divide between the best canoeing and fishing conditions, which serves to minimize conflicts between these two groups.

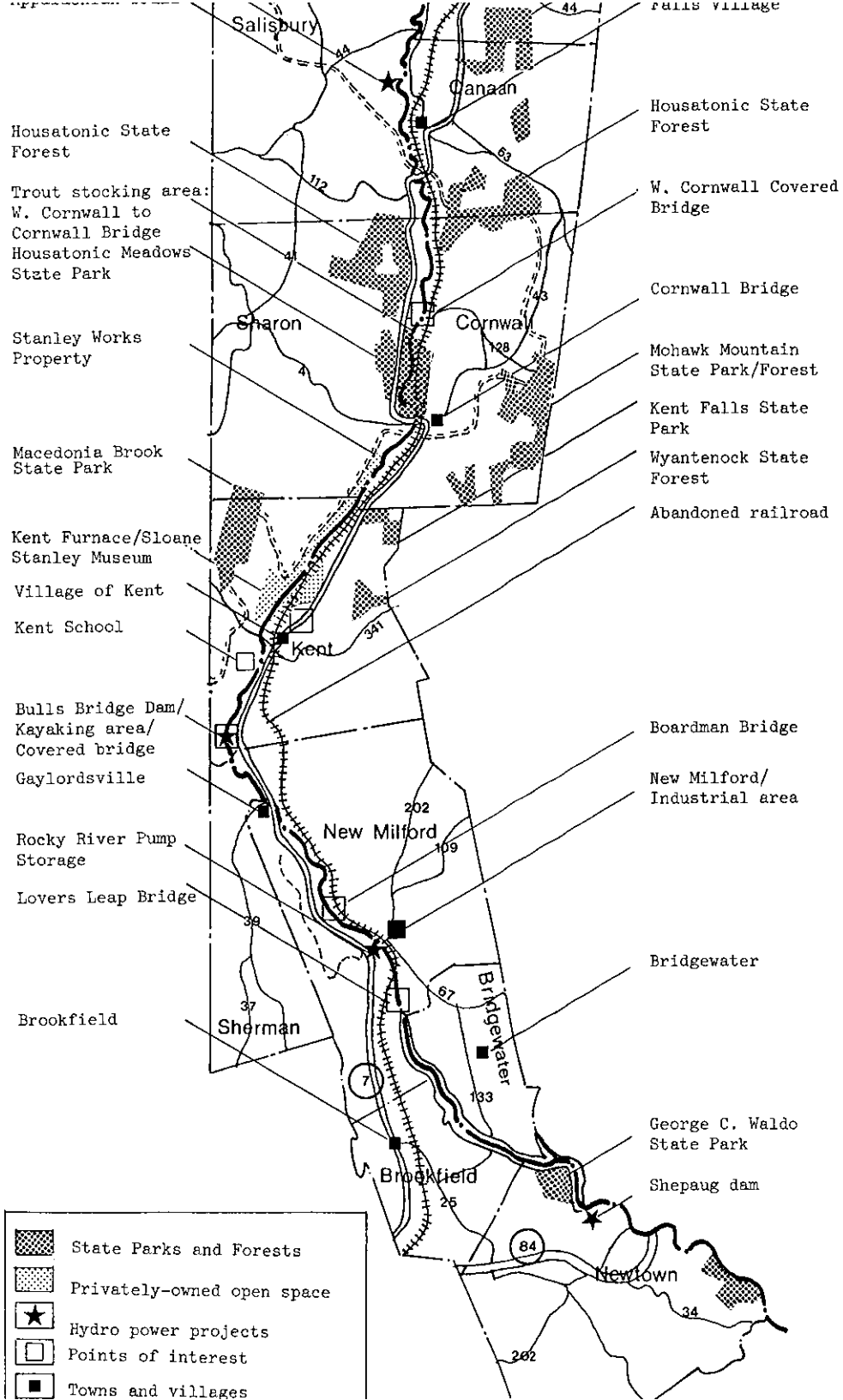
Hunting in the study towns is allowed not only in Housatonic, Wyantenock and Paugussett State Forests but in all state forests. Estimates for 1975 indicate that there were approximately 1150 hunters in the Housatonic River corridor above New Milford. The only big game hunting in the area is a two month deer season. However, pheasant are stocked and a wide variety of small game are in abundance. Hunting of small game and waterfowl is allowed anywhere such activity is not in conflict with local or state laws.

31 There are several hiking trails in close vicinity to the Housatonic River, including an 8-mile segment of the Appalachian Trail. This nationally recognized trail enters the corridor at Schagticoke Mountain in Kent and continues north along St. John's Ledge and the west river bank to Cornwall Bridge. This trail appears again on the east bank of the river in Canaan and continues north for a short distance to Falls Village. Estimates of hiking activity in the corridor indicate that at least 10,000 people per year use the Appalachian Trail along the river and that the greatest concentration of use occurs on St. John's Ledge in Kent. Other trails in the corridor include paths through state park and forest lands, the Housatonic River Road between Boardman Bridge

Camping along the river is provided at the Housatonic Meadows and Kent Falls State Parks and is generally associated with canoeing, fishing and hunting activities. Overnight campers for 1975 in Housatonic Meadows totaled 28,000 people and in Kent Falls totaled 2,800 people.

Overall recreational activity on the Housatonic River is expected to increase in coming years. This general conclusion is based on the increasing recreational trend on the river for the past few years, and on the projected population growth for the Danbury-New Milford area. Furthermore, recreation trends for the entire Northeastern U.S. appear to be increasing. A recent survey of data from recreational organizations, river managing agencies and academic research indicated that river-oriented recreation in the Northeastern U.S. is generally increasing, especially on rivers near highly populated areas. The implications of this research for the Housatonic River are significant due to its close proximity to the New York metropolitan area.




Salisbury
Canaan
Falls Village
Housatonic State Forest
Trout stocking area: W. Cornwall to Cornwall Bridge
Housatonic Meadows State Park
Stanley Works Property
Sharon
Cornwall
Housatonic State Forest
W. Cornwall Covered Bridge
Cornwall Bridge
Mohawk Mountain State Park/Forest
Kent Falls State Park
Wyantenock State Forest
Abandoned railroad
Macedonia Brook State Park
Kent Furnace/Sloane Stanley Museum
Village of Kent
Kent School
Kent
Bulls Bridge Dam/ Kayaking area/ Covered bridge
Gaylordsville
Boardman Bridge
New Milford/ Industrial area
New Milford
Rocky River Pump Storage
Lovers Leap Bridge
Bridgewater
Brookfield
Sherman
George C. Waldo State Park
Shepaug dam
Newtown
State Parks and Forests
Privately-owned open space
Hydro power projects
Points of interest
Towns and villages

Several private conservation organizations are active in the study area to protect and conserve the scenic beauty and natural value of the river corridor and surrounding areas. These organizations include the Housatonic Valley Association, the Nature Conservancy, and the Audubon Society as well as several local land trusts.

Four parcels of waterfront property in the town of Kent have been placed in conservation status by the Stanley Works through a 669 acre conservation easement granted to the Housatonic Valley Association for 30 years and a 159 acre donation to the State of Connecticut and the Nature Conservancy. Other significant conservation areas on the river are Miles Sanctuary in Sharon and Sunny Valley Preserve on Lake Lillinonah in Bridgewater. Some of the local preservation organizations that are active in the area include Weantinogue Heritage, Kent Pond Mountain Trust, and the Mt. Riga Forest Preserve.

Archaeological Activity

Archaeological research is also quite active in the study area due to the work of the American Indian Archaeological Institute. It is generally held that the Housatonic valley was first occupied by Paleo-indians in approximately 10,000 B.C. and since that time has been occupied by three distinctive indian cultures before the first Europeans explored the area. In a recent dig on the Shepaug River, a major tributary to the Housatonic, an indian artifact dating back 12,000 years was discovered. Preliminary investigations indicate that the Housatonic valley itself also has a great potential to yield significant archaeological finds. This is due to the deeply stratified layers of soil in the area which has isolated the remains of various cultures in sequence, and due to the generally undeveloped condition of the valley. Archaeologists maintain that this river valley is a unique archaeological resource for this part of New England and that a systematic archaeological survey should be made of the valley.

Historical Development

The Housatonic River basin was first settled by English puritans who established the town of Stratford at the mouth of the river in 1639. Gradually the central portion of the basin was settled and Litchfield County was formed in 1751. Life of the colonists in this inland region was based on agriculture for which they cleared thousands of acres of forests. By 1796, Litchfield County contained 283,000 acres in farm land and 45,600 acres tilled for crops, which together accounted for 54.7% of the land in the county Early settlements were founded in the towns of New Milford and Woodbury where grist mills, sawmills, tanneries, blacksmiths and other small businesses typically developed. Other small towns developed and prospered along the river since waterways were the primary arteries of transportation. Today several villages in the study area contain homes, churches, schools and stores from this colonial period, which are recognized as State Historical Resources.

The 18th and 19th centuries brought many changes to the agrarian culture of this area as industry expanded

general, the population was drawn out of the farms to the urban centers where manufacturing was thriving. In the Housatonic basin, Danbury, Waterbury, Seymour, and Shelton became the manufacturing centers in the south, while Pittsfield developed as the industrial center to the north. Eventually the Bulls Bridge power plant was built on the river to supply electricity to the city of Waterbury. This was considered an ambitious project when it was undertaken in 1902 and is still in operation today.

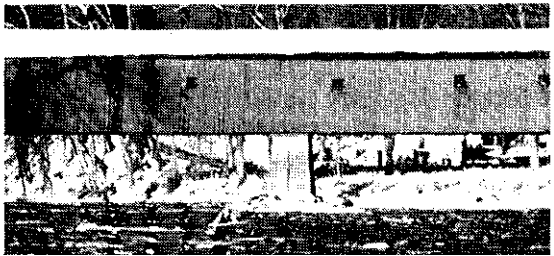
In the central portion of the basin, iron production prospered in the 19th century as hardware for tools, railroad equipment and machinery were needed for the nation's westward movement. This iron industry along the Housatonic began at Salisbury in 1730 and lasted until 1923 when the last iron furnace was closed. Today the remains of the old iron furnaces can be found along the river. Most well known is the Kent Furnace, which is owned by the Connecticut Historical Commission.

The 19th century also brought great improvements in transportation through the development of railroads and highways. The Berkshire railroad was built during this time to connect the southern industrial centers of the basin with Pittsfield in the north. Several railroad stations and depots remain in their original condition along this line and are recognized by the State for their historical value. Two of these structures, the Cornwall Bridge Railroad Station and the Union Depot in North Canaan, are listed on the National Register of Historical Places.

include two wooden covered bridges and two wrought iron bridges, all of which remain today. The two covered bridges were built in the mid-1800's at West Cornwall and Bulls Bridge. The two iron bridges were built later at Boardman Bridge in 1888 and Lovers Leap in 1895. All four of these bridges are listed on the National Register of Historical Places for their engineering significance.

These changes in transportation along with the movement of people to urban centers, brought changes to the agricultural practices of the area. Basically, farming changed from a family subsistence operation to a commercial enterprise which supplied food and dairy products to the cities. It was during this time that dairy farming and poultry production developed and farms became larger in size and fewer in number. This trend has continued even to this day, when commercial farming is the main economic activity of the area.

Today, the influence of these colonial and industrial periods in the valley's history are evident not only in the historical buildings, bridges and iron furnaces, but also in the area's agricultural economy. These elements, together with the valley's scenic natural conditions and rural settlement pattern, create the historical colonial charm of this part of New England.



WILD AND SCENIC RIVER CRITERIA

The analysis of the Housatonic River, its natural processes and settlement pattern, has led the study team to a determination that 41 miles of the Housatonic River from the Massachusetts/Connecticut border to Boardman Bridge is eligible for inclusion in the National Wild and Scenic River System. This finding is based on criteria developed by the U.S. Departments of Agriculture and Interior, which considers the river's free-flowing and natural condition, its water quality, its capability to support water-related recreation, its length and its outstandingly remarkable values. The following analysis indicates how these criteria apply to the Housatonic River in Connecticut.

FREE-FLOWING NATURAL CONDITION

The eligible segment of the Housatonic River is generally free-flowing as it runs through a notably natural and undeveloped corridor. This free-flowing character is not significantly affected by the two run-of-the-river hydro power dams at Falls Village and Bulls Bridge. In the Lake Lillinonah area, the Shepaug hydro power project includes a 1870 acre impoundment of the river's free-flowing condition. This large impoundment, plus the presence of industrial and other structures on the shoreline in New Milford are the reasons why the ten miles of the river below Boardman Bridge were found ineligible for National Wild and Scenic River designation.

WATER QUALITY

The study segment of the Housa-

Quality Standards for Connecticut. This indicates the river's ability to support bathing and other recreational activities, as well as, to provide an excellent habitat for fish and wildlife, including a cold water fishery. The 1976 water quality standards, however, downgrade the river to class "D" due to the high levels of PCB's (poly-chlorinated biphenyl) found in the fish. Efforts to return this river segment to its class "B" rating by 1979, are being made by the State of Connecticut in coordination with similar efforts in New York and Massachusetts. This situation is acceptable under the National Wild and Scenic River criteria since reasonable efforts are being made to return the river to its original excellent class "B" rating.

SUFFICIENT VOLUME FOR WATER-RELATED RECREATION

The eligible segment of the Housatonic River supports a wide variety of water-related recreation including canoeing, kayaking, trout and bass fishing, and fly-fishing. Streamflow data indicates that the average monthly discharge throughout a normal year exceeds the minimum 700 cfs required for canoeing. The daily operations of the Falls Village and Bulls Bridge power facilities do not seriously limit canoeing or fishing activities. In fact, the release of water around noon tends to coincide with popular canoeing times, while the lower water periods tend to coincide with prime morning and evening fishing activities.

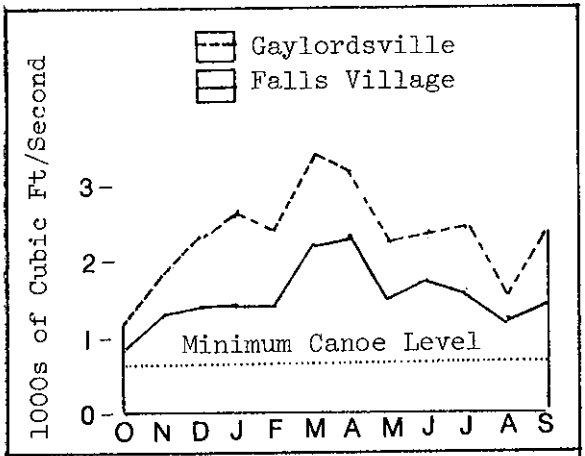


TABLE 8: MEAN MONTHLY FLOW - Oct. 1974 to Sept. 1975 Source: USGS Water-Data Report CT-75-1, 1975

SUFFICIENT LENGTH FOR A MEANINGFUL EXPERIENCE

The eligible river segment is 41 miles long which compares favorably with the criteria's recommended 25 mile minimum length. This length can easily accommodate a two day

OUTSTANDINGLY REMARKABLE VALUES

The eligible segment of the Housatonic River valley contains certain attributes which have received State, regional, or national recognition and are considered to be outstandingly remarkable values under the Wild and Scenic River criteria. These are the following:

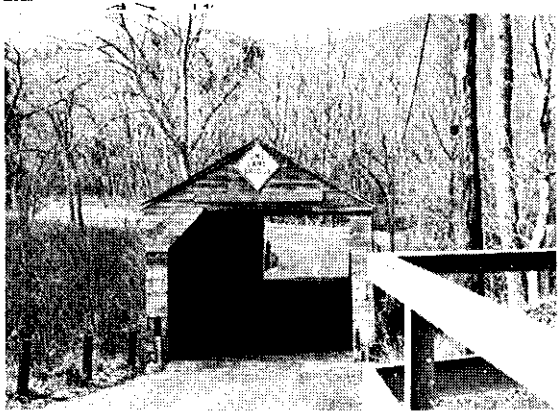
HISTORICAL VALUE. The Housatonic valley developed as a river oriented agricultural area in colonial times and eventually played a prominent role in the 19th Century iron industry. Reminders of these historical periods are evident today in the general appearance of the valley with its picturesque riverside villages of colonial homes and stores, and its old stone fences.

Within the eligible river segment, two wooden covered bridges and one wrought iron bridge are listed on the National Register of Historical Places for their engineering significance. These are the covered bridges at West Cornwall and Bulls Bridge, and the wrought iron Boardman Bridge. In addition, the National Register includes the 19th Century Railroad Station at Cornwall Bridge and the Union Depot in North Canaan. Other historical resources may also be eligible for inclusion in the National Register of Historic Places.

Another important element of the river corridor which has received national recognition for its historic, cultural, scenic and natural qualities is the Appalachian Trail, which parallels the eligible segment of the Housatonic River for approximately 8 miles.

The remains of an old iron furnace in Kent have been given recognition

have been nominated to the National Register. The State has also given recognition to a 60 acre historical district in the town of Kent which borders on the river.



found marble ridges and ledges that support several fern species of State-rare and State-endangered status; floodplain forests where several State-rare plants and songbirds have been found; and high summits containing herbaceous plants, lichens and mosses that are quite rare south of central Vermont and New Hampshire. In addition, the U.S. endangered bald eagle and peregrine falcon are known to be present in the area.

ARCHAEOLOGICAL VALUE. It is generally held that the Housatonic valley was first occupied by Paleo-indians in 10,000 B.C. and since that time has been occupied by three distinctive indian cultures before the first Europeans explored the area. Archaeologists maintain that this river valley has an excellent potential to yield significant archaeological find from prehistoric cultures and is a unique archaeological resource in this area of New England. This is attributed to the stratified soils of the valley which have preserved the prehistoric remains in sequence, and the generally undeveloped condition of the river's streambanks.

VEGETATION AND WILDLIFE VALUES. The Housatonic Valley contains certain unique environmental conditions that create suitable habitats for rare and endangered species of both plants and animals. Several of these sites are recognized as "critical habitats" by the State of Connecticut and are of scientific and educational significance to

CLASSIFICATION

In addition to determining eligibility, the study team also classified the river into one scenic and two recreational segments. This determination is based on the degree of development along the shoreline of the river as compared to other rivers in the National Wild and Scenic River System. This classification is not intended to identify the "most scenic" or "best recreational" areas and does not affect the amount of protection extended to a river segment. These issues should be addressed in the management plan through its land use, recreation, and water quality programs. The following analysis indicates how these classifications were determined.

SCENIC RIVER SEGMENTS. These are river segments which are free of impoundments, with shorelines or watersheds still largely primitive and shorelines undeveloped but accessible in places by road. The 20.5-mile segment of the Housatonic River from Falls Mountain Road in Canaan to Kent Bridge is classified as scenic. In this area the river is free-flowing and runs through a generally undeveloped corridor with steep forested valley walls and prominent bedrock outcroppings. The abandoned railroad and Route 7 highway are good access to much of this area and are generally screened from the river by natural streambank vegetation.

RECREATIONAL RIVER SEGMENTS. These are river segments which are readily accessible by road or railroad, have some development along their shorelines, and may have undergone some impoundment in the past. The 8.5 mile recreational river segment from the Massachusetts/Connecticut border to Falls Mountain Road is a slow moving meandering stream through flat agricultural land with only occasional access by road, railroad or trail. The Falls Village hydroelectric power dam in this area backs up the water for less than one mile and has altered the natural flow of the river over Great Falls. The streambanks show evidence of man's influence as a two to three foot mud bank is exposed by the daily hydro power operations. Furthermore, agricultural activities have caused gullying of the streambanks and have hindered the growth of natural streambank vegetation in places.

The 12-mile recreational river segment from Kent Bridge to Boardman Bridge flows through a steep forested valley, yet it contains several elements of man's influence. The Bulls Bridge hydro power project in this area creates a 4.5 mile pool of impounded water and has altered the natural flow of the river through a spectacular rock gorge. The streambanks along this pool are exposed for 2-3 feet below their natural water level by the daily hydro power operations. The abandoned Berkshire railroad, Route 7 highway and residential developments are obviously exposed along the shoreline in places without

MANAGEMENT GUIDELINES

In addition to determining the eligible segment of the Housatonic River for inclusion in the National Wild and Scenic River System, the study team has recommended that a management plan be completed through local action and has prepared management guidelines to assist that local effort. Essentially these management guidelines provide a framework for preparing a management plan which will be acceptable for National Wild and Scenic River designation.

In these guidelines, management planning is regarded as a process which brings about the actions and commitments of the local, state, and federal governments, and of interested groups and individuals required to protect the existing values of the river. On the Housatonic River, this process was begun by the Housatonic Study Group - an ad hoc committee of representatives from N. Canaan, Canaan, Salisbury, Cornwall, Sharon and Kent. The responsibility to continue this planning process has been transferred to the Housatonic River Commission, which is an official committee of town representatives, to plan for permanent protection of the river.

In the Lake Lillinonah area, a similar committee has been formed to develop a plan for protection of the ineligible river segment. Both of these committees have made efforts to coordinate with each other and with the Shepaug-Bantam Committee which is also preparing a management plan for another potential wild and scenic river segment.

The impact of activities outside the river corridor should also be problems resulting from contaminants, alterations in stream flow from potential hydropower or industrial facilities, increased sediment load from upstream erosion, or increased flood heights from the loss of upstream natural valley storage. These issues should be considered when coordinating with agencies and communities not only in Connecticut itself but in Massachusetts and in New York.

During this management planning process, technical assistance will be available upon request from the National Park Service. In addition, the State of Connecticut, other federal agencies, regional planning agencies, and private recreation/conservation groups could be contacted. A list of the agencies, and groups which participated in this study is included in the Appendix. At the local level, valuable assistance could be attained from the various town commissions and interested groups and individuals.

The framework for management planning in these guidelines involves four basic steps - inventory, analysis, programming and implementation. Each of these steps is thoroughly described and specific applications to the Housatonic River are suggested. This framework has been developed as a conceptual guide to preparing a river management plan and is intended to assist local planning efforts for both the eligible and ineligible river segments. However, references to the National Wild and Scenic River system are made throughout these guidelines, and the steps for requesting designation are clearly outlined. This information is intended to assist planning for the eligible river

INVENTORY

Inventory is the initial "fact-finding" stage of the management planning process in which the river corridor is defined, critical areas are located, and political actions affecting the river and its future are identified. The inventory should be conducted through careful study, mapping, fieldwork, and consultation with knowledgeable parties. On the Housatonic River, some valuable information sources include the State Historic Preservation Officer, the Connecticut Historical Commission, the Connecticut Department of Environmental Protection, the regional Planning agencies, Litchfield County Conservation District, the Housatonic Valley Association, the Housatonic Fly-Fishermen's Association the Housatonic Audubon Society, the Appalachian Mountain Club, the American Indian Archaeological Institute, Lake Lillinonah Authority, the Berkshire-Litchfield Environmental Council, Northeast Utilities, the Nature Conservancy, local historical societies and educational institutions, town officials, knowledgeable residents, and others.

RIVER CORRIDOR. The river corridor is the land on either side of the river which requires protection to preserve its visual, ecological and cultural values. Specific boundaries for the river corridor should be mapped to document the major jurisdictional area of the management plan. Some problems outside of this corridor will be addressed in the management plan, but most of the management strategies will be focused within these boundaries.

The river corridor should be divided into two zones - the foreground and the background. The foreground encompasses the river and its adpreservation of their natural condition. On the Housatonic, the foreground should include the river, its streambanks, inland wetlands, floodplain and other lands which are critical to protection of the ecological functions of the river. Management strategies in the foreground should prohibit new development, protect farm lands, forest lands and other existing compatible land uses, and encourage the maintenance and enhancement of natural conditions.

The background zone of a river corridor is the land beyond the foreground yet within the river valley. Generally the outer boundary of the background should be formed by the ridge line or sight line of the valley. Management strategies in the background should prohibit visual intrusions, and air, water, or noise polluting activities; protect and enhance farm lands, forest lands, and other compatible land uses; and provide visual and ecological guidelines for new development.

CRITICAL AREAS. Critical areas are specific sites within the river corridor requiring special attention and protection due to their ecological, cultural, recreational, and economic values. Generally, these critical areas should include habitats of rare and endangered species, potential archaeological sites, fragile ecological areas, potential sites of incompatible land uses, historical sites, public use areas, pollution sources, and areas of special interest. Several of these sites have been identified by the study team and are included here as examples. Management strategies for critical areas should protect their special values, prohibit over use and degradation of the environment, and provide guidelines to maintain and enhance their natural condition.

CRITICAL CULTURAL AREAS

POTENTIAL ARCHAEOLOGICAL SITES River valley has a significant potential to yield archaeological finds which could be lost to development, intense use and scavenging.

HISTORICAL BRIDGES (West Cornwall Bridge, Bulls Bridge, Boardman Bridge, Lover's Leap Bridge) Two wrought-iron bridges and two covered wooden bridges of the 19th century listed on the National Register of Historical Places for engineering significance.

KENT FURNACE (Kent) One of several remaining furnaces from the area's thriving iron industry of the early 19th Century. This fieldstone hearth is a recognized historical resource of Connecticut and has been nominated to the National Register of Historical Places.

KENT HISTORIC DISTRICT (Kent) Sixty acres in the village of Kent for which a local commission reviews and approves construction for all visible structures.

CORNWALL BRIDGE RAILROAD STATION (Cornwall Bridge) One story building of board and batten construction, built between 1860-70 in "Railroad Gothic" style. Listed on National Register of Historical Places.

SCHAGTICOKE INDIAN RESERVATION (Kent) The Schagticoke Indians have a 450 acre reservation on the river and have filed claim to an additional 1600 acres adjacent to their property. The tribe is planning to build housing on

CRITICAL ECOLOGICAL AREAS

MARBLE RIDGES AND LEDGES (Bulls Bridge, Great Falls, Point of Rocks) Steep ledges of contorted marble with a great abundance of rare, endangered or very uncommon plant species. Great Falls and Point of Rocks are potential National Natural Landmarks.

SCHAGTICOKE MOUNTAIN (Kent) Steep forested mountain with a large area of scantily vegetated and bare, exposed rock ledges. Area has outstanding scenic quality and is classified in Connecticut as a "critical habitat".

FLOOD PLAIN FOREST AND ALLUVIAL WETLANDS (Falls Village to Kent) Well developed flood plain forests which occur only along a few major rivers in the state and are most extensive along the Housatonic. Area supports several rare plant and animal species and a high diversity of songbirds. Classified in Connecticut as a "critical habitat"

HIGH MOUNTAIN SUMMITS (Mt. Canaan, Bear Mt., Mohawk Mt.) Sparsely vegetated, wind blown summits which support low growing woody and herbaceous plants, lichens and mosses that are very susceptible to trampling. Classified in Connecticut as a "critical habitat"

DEGRADED STREAMBANKS Loss of natural vegetation on streambanks occurs along the river in a few places due to intense land use practices which result in sedimentation, gullying, and exposure of adjacent roads and railroads.

FARM LAND Farming is a major industry in the river valley which is primarily responsible for the area's rural New England character. Problems concerning erosion, sedimentation, and waste disposal due to agricultural activities have increased in recent years. In addition, there is pressure to convert farm lands to more intense uses.

FOREST LAND The abundant forests in the Housatonic Valley provide a scenic background, a valuable timber resource and a significant wildlife habitat to the area. Pressure for residential, commercial, industrial and recreational uses of forest land is generally increasing.

MILES SANCTUARY (Sharon) Diverse habitat of forest, streams, ponds and meadows preserved by the Audubon Society and recognized as a potential National Natural Landmark.

DEAN'S RAVINE (Canaan) Narrow stream through interesting rock formations with vestiges of an old mill-dam, and only site of luminous moss in Connecticut. Recognized as a potential National Natural Landmark.

STANLEY WORKS PROPERTY (Kent) Four parcels of land along the Housatonic River having historical, recreational, ecological and scenic values which have been placed in environmentally protective status through a 669 acre conservation easement granted to the Housatonic Valley Association for 30 years, and 159 acre donation to the State of Connecticut and the Nature Conservancy.

CRITICAL ECONOMIC AREAS

SAND, GRAVEL AND STONE RESOURCES Mining and quarrying are active industries along the river which have grown steadily in response to residential, commercial and highway construction. The scenic landscape and water quality of the river could be damaged by the improper management and location of future sand and gravel pits and stone quarry sites.

HYDRO POWER DAMS (Falls Village, Bulls Bridge, Rocky River and Shepaug) These are conventional run-of-the-river hydro power facilities, with the exception of the Rocky River pumped storage installation. Falls Village and Bulls Bridge are relatively small projects which have been in operation for over 50 years. Their daily release of water serves to time-zone the popular fishing and canoeing activities on the river. However, the 2-3 foot daily fluctuation of water behind these dams creates an unattractive mud bank and affects the natural streambank vegetation along the river. Federal licensing of these four projects will lead to the procurement of plans to enhance the recreational and fish and wildlife values of their project lands.

BLEACHERY DAM AREA (New Milford) Site of a proposal to restore river to its normal course over the Bleachery Dam. Several deaths have occurred here as canoeists crossed this dam under deceptive hydrological conditions. Clearly marked portage is needed.

ROUTE 7 CORRIDOR (New Milford to N. Canaan) Major access road through the Housatonic Valley. Proposed improvements, as considered in the past few years, would make the river more accessible, thus increasing recreational use and suburban development pressures. These plans are no longer under consideration by the State.

PROPOSED SEWAGE TREATMENT PLANT (New Milford) This proposed project is an element of the Federal and State water pollution control programs for the Housatonic, which could affect the visual quality and phosphorous level of the river and possibly encourage new residential development in the area. Mitigation of these problems is in progress under the Wild and Scenic Rivers Act.

PROPOSED BRIDGE CROSSING (New Milford) This proposal is for the construction of a new bridge across the river, located immediately south of Boardman Bridge. This project will require a review under the Wild and Scenic Rivers Act to insure protection of the river and the values for which it is being studied.

CRITICAL RECREATION AREAS

HOUSATONIC CANOE AREA (Falls Village to Kent) Twenty mile canoe run through Class 1, 2 and 3 rapids with a halfway access point at Housatonic Meadows State Park where camping is permitted. This area attracts many out-of-state canoeists and activity here is expected to increase.

HOUSATONIC KAYAKING AREA (Bulls Bridge) Class 4-6 rapids in a scenic gorge below Bulls Bridge dam, which is considered one of the premier whitewater assets of the Northeastern U.S. by kayaking enthusiasts and should only be used by experts because of the danger involved.

HOUSATONIC TROUT FISHING AREA (Falls Village to Kent) This is one of the best trout fishing streams in Connecticut. It draws fishermen from New York State and southern New England and contains a 3 1/2 mile "fly-fishing only" area. The State has an extensive trout stocking program here and fishing pressures are heavy, especially upstream of Cornwall Bridge. The State is considering expanding its fishing access and stocking program on the river to relieve some of these pressures.

APPALACHIAN TRAIL (Kent to Cornwall Bridge and Dean's Ravine to Falls Village) National trail from central Maine to northern Georgia which parallels the Housatonic River for approximately 8 miles and provides several scenic vistas of the river valley. Overuse is a problem along St. John's ledge in Kent.

STATE PARKS AND FORESTS The State owns and operates 2600 acres in the river corridor for recreation and wildlife purposes. These are the major public access and activity areas on the river for hunting, hiking, camping, fishing, snowmobiling, and picnicking. The State has no plans for expansion or reclassification of these areas, although a potential overuse problem at Kent Falls is recognized.

CANDLEWOOD MOUNTAIN TRAIL (New Milford) Scenic trails transversing many areas of huge outcrops, ledges and small caves. Physical management is needed.

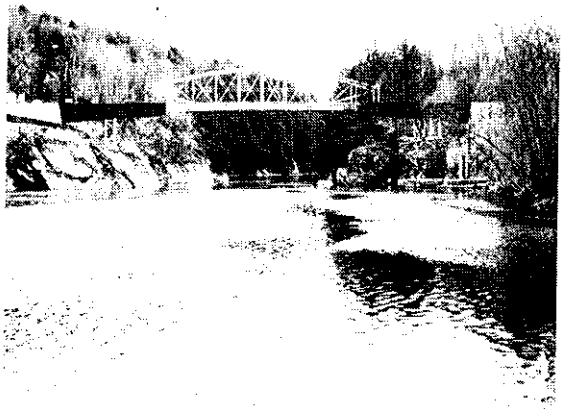
HOUSATONIC RIVER ROADS (Boardman Bridge to Gaylordsville and West Cornwall to Falls Village) Dirt roads paralleling scenic stretchs of the river.

LOVER'S LEAP (New Milford) Vista point and unorganized trail system overlooking scenic gorge of lush vegetation. Threatened.

LAKE LILLINONAH Beautiful man-made lake with steep forested banks which is considered one of the best bass fishing lakes in Connecticut. The area is popular for boating, water skiing, fishing, sailing, swimming and other water sports. Increasing residential development pressures and a seasonal algae bloom are serious problems in this area.

BERKSHIRE RAILROAD (New Milford to N. Canaan) Abandoned railroad line which the State of Connecticut is considering for purchase and lease to a tourist excursion service. It is a significant linear element in the corridor which separates public activities on the river from private land uses and discourages streamside

POLITICAL ACTIONS. Political actions include activities, trends, plans and policies occurring outside the river corridor which could have an impact on the special values of the river. In identifying these actions, attention should be given to local attitudes and land use practices, town laws and policies, state and regional planning policies, recreational trends and activity patterns, industrial and commercial interests, Federal programs and policies, and regional growth and development trends. The study team has identified a few of the actions currently affecting preservation efforts on the Housatonic, which are included here as examples. Management strategies for these problems should call upon state, regional, and local decision makers to coordinate their activities with respect for the ecological and cultural values of the river corridor.



POLITICAL ACTIONS

GROWTH TRENDS The continuation of recent growth trends in the Brookfield-New Milford area will probably increase pressure for suburban development in the river corridor.

ROUTE 7 HIGHWAY The new north-south super highway, gradually taking shape, piece by piece in or near the present U.S. Route 7 corridor of western New England, could dramatically alter the land use and population patterns of the rural Housatonic valley. Although plans to improve Route 7 in Connecticut have been abandoned for the foreseeable future, construction of segments in Massachusetts and Vermont will only increase pressure to construct the Connecticut segments.

WATER QUALITY PROGRAMS The effectiveness of water quality planning programs in Massachusetts and New York, as well as Connecticut, to control point source pollution and to implement best land use management practices, will largely determine the quality of water in the river corridor.

UTILITY LICENSING Federal licensing of the hydro power facilities on the river, which encourages the utility companies to prepare plans to enhance the fish, wildlife and recreational values of their properties, could provide an opportunity to protect some critical areas in the corridor, yet could also lead to increased recreational activity.

STATE RECREATION POLICIES Implementation of the State Comprehensive Outdoor Recreation Plan's policies to protect natural, scenic and historical resources greatly supports preservation efforts on the Housatonic River. However, its policies to expand fishing, hunting, camping, swimming, boating and canoeing opportunities for the general public could lead to increased recreational activity in the river corridor.

REGIONAL RECREATION TRENDS Recent research indicates a strong upward trend in river-oriented activity, especially on rivers near large population concentrations. As long as this trend continues the Housatonic will remain a primary candidate for increasing recreational activity due to its proximity to the New York metropolitan area.

ANALYSIS

Analysis is the second phase of the planning process in which management objectives are developed from the inventory information. For Wild and Scenic River designation, these objectives should reflect the intent of the Wild and Scenic Rivers Act to protect and enhance the special values of the river and its corridor without limiting other uses which do not substantially interfere with public use and enjoyment of the area. The study team suggests the following type of management objectives for the Housatonic River, in case National designation is requested.

1. The preservation of a free-flowing river.
2. The maintenance of high water quality.
3. The protection and enhancement of natural and scenic features along the river.
4. The protection and interpretation of historic and archaeologic values.
5. The preservation of the farming heritage in the valley.
6. The protection of existing opportunities for public enjoyment.
7. The prevention of overuse and misuse of the river environment.
8. The allowance of compatible activities along the river which do not substantially interfere with wild and scenic river objectives.

PROGRAMMING

Programming is the third and most important phase of the planning process. It involves the development of strategies to accomplish the management objectives through the application of several legal and administrative tools, and the coordination of functions and policies at all levels of government. If Wild and Scenic River designation is desired for the Housatonic River, the management plan should include management programs for land use, recreation and water quality.

Land Use Management

The Land Use Management Program should be designed to protect the land within the river corridor from activities which would alter its visual, ecological, and cultural values. Special attention should be given to maintaining natural conditions in the foreground area, protecting the critical areas from degradation, and preventing visual intrusions in the background zone.

There are several legal and administrative tools which could be incorporated in this program to effectively protect and guide land use activities in the river corridor. Many of these tools are described below and their possible applications to the Housatonic River are suggested.

1. LOCAL GOVERNMENT REGULATIONS. Planning, zoning and other regulatory functions of local governments along the river could be coordinated to provide comprehensive protection to the river corridor. In addition, special town ordinances could be adopted

large lot zoning standards, minimum set back distances, minimum river frontage distances, plant material removal restrictions, or other similar regulations.

2. INLAND WETLANDS AND WATERWAYS ACT. This act requires a permit for "any operation within or use of a wetland or water course involving removal or deposition of material, or any obstruction, construction, alteration or pollution of such wetland or water courses." Towns could coordinate to strengthen the application of this regulation by placing a high priority on wetlands and water courses within the foreground zone of the river corridor.

3. NATIONAL FLOOD INSURANCE PROGRAM. This program was enacted by Congress in 1968 to make flood insurance available at reasonable rates, and requires that certain flood plain management regulations be adopted. Towns could coordinate with the Flood Insurance Administration to hasten the completion of the required Flood Insurance Rate Maps so that permanent flood plain regulations can be enacted along the Housatonic.

4. CONNECTICUT'S PUBLIC ACT 490. This act protects farm, forest or open space land against prohibitive property taxes which might force conversion of the land to more intensive uses. The farm and forestry elements have been widely used in the river corridor, yet the open space element has had only a few applications. The full use of P.A. 490 could be considered by the towns as a means to preserve the rural character of the valley and to promote orderly growth in the surrounding parts of the towns.

5. CONNECTICUT'S STREAM CHANNEL ENCROACHMENT LINE PROGRAM. This program was designed to maintain the capacity of a river to carry and store flood waters, and to protect the lives and property of area residents. A permit is required on any obstruction, encroachment or hindrance within certain established encroachment lines along flood prone rivers in the state. Currently, encroachment lines have been established along 2.5 miles of the Housatonic River in New Milford. The program has several administrative problems, however, due to the high cost of delineation, the difficulty of enforcement and its overlap with the National Flood Insurance Program. If these problems are ironed out by the state, consideration could be given to the additional protections which this program could provide for the river's flood plains.

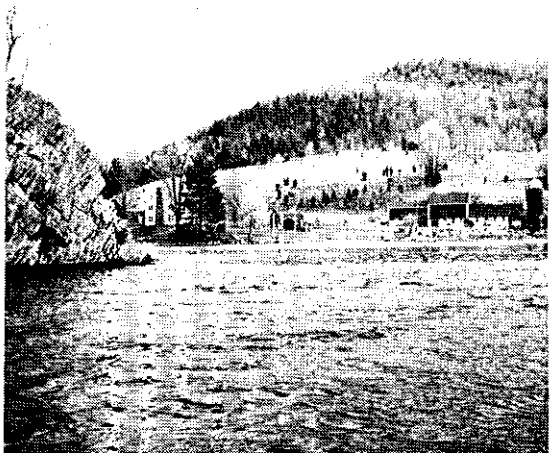
6. ENVIRONMENTAL REVIEW PROGRAMS. These are federal and state requirements that certain projects be reviewed for their impact on the environmental and cultural values of their development sites. Often these programs include procedures for public participation through which the preservation of the Housatonic could be coordinated. Some of these programs are the National Environmental Policy Act, the Federal Water Pollution Control Act, the Federal Energy Regulatory Commission Licensing Procedure (Exhibit W), the National Historic Preservation Act, the Archaeological and Historical Preservation Act, and the Connecticut Environmental Protection Act. In addition, King's Mark Resource Conservation and Development Project, supports an environmental review team to assess the impact of proposed large scale developments for

7. LESS-THAN-FEE-SIMPLE LAND OWNERSHIP. This is a means of preserving land by placing certain restrictions on the use of the land, or by granting specified rights to others regarding the use or development of the land. Guidelines could be prepared to assist landowners in the river corridor who are interested in preserving their land through deed restrictions, easements and other less-than-fee-simple techniques.

8. FEE-SIMPLE LAND OWNERSHIP is full ownership of all rights to the land and is the soundest means of assuring complete protection and control. This technique should be used only where a parcel of land is threatened with development which would seriously detract from the river's special values, or where a specific parcel is needed for public access and use. Guidelines could be prepared for interactions between the managing agency and landowner when this type of purchase is under consideration. These guidelines could describe willing-seller/willing-buyer provisions, donations, installment purchases, long term lease with options to buy, purchase and resale, land exchange, condemnation and other approaches to fee-simple land ownership.

9. PLANNING COORDINATION could be pursued with all state, regional and federal agencies involved in land use, water quality, recreational or other planning programs which encompass the river corridor. Some of the major planning programs for this area are conducted by HUD's 701 Comprehensive Planning Process, EPA's Water Quality Planning Programs, the Corps of Engineers' Water Resources Development Plans, the Federal Energy Regulatory Regional Planning Commission, the Connecticut Plan of Conservation and Development, the State Comprehensive Outdoor Recreation Plan, the King's Mark Resource Conservation and Development Program and individual town plans.

10. SPECIAL POLICIES could be developed which guide local, state, and federal cooperation in controlling land uses and their effect on the river corridor. These policies should provide guidelines and establish review procedures for highway improvements, bridge, dam or power line construction, sand and gravel operations, timber removal, large residential commercial or industrial developments and other major activities which could have an adverse impact on the ecological, and cultural values in the river corridor.



Recreation Management

The Recreation Management Program should be designed to protect and maintain the diversity and quality of recreational opportunities in the river corridor, especially as the general trend towards increasing recreational demand continues. Specifically, this program should not be concerned with providing more and more recreational sites, but instead should strive to control recreational development and activity in a manner which preserves the ecological and cultural values of the river. This objective can be achieved through several legal and administrative tools for recreational management which are described below.

1. FACILITIES DEVELOPMENT PLAN. This plan is a guide to the expansion and development of recreational facilities in the river corridor, whose objective is to allow for slow and controlled growth of recreational facilities in a manner which accommodates increasing recreational activities without creating additional recreational demand. A plan of this type could be designed for the Housatonic River to control the location, design and timing of new recreational facilities. The Connecticut Department of Environmental Protection has much experience and expertise which could be of great value in preparing this plan. Coordination with Northeast Utilities is also necessary to assure that the recreation plans for their hydropower facility sites are consistent with the recreation objectives for the river corridor.

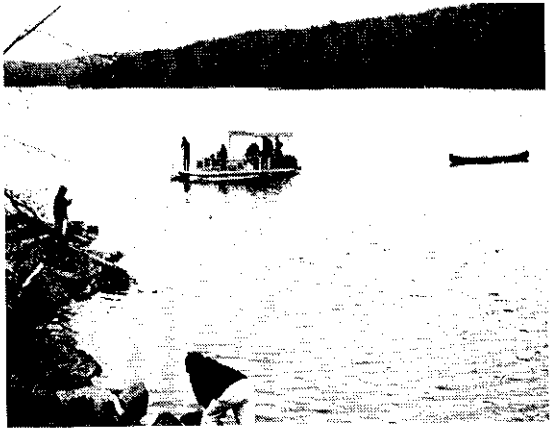
2. ACTIVITY MANAGEMENT POLICIES. These are administrative procedures site abuse due to recreational activities. Such policies could include monitoring of recreational activities, visitor fees and registration, activity zoning, licensing of outfitters, party size limits, trash policies, water safety requirements, information brochures, and publicity bans. Coordination with State Department of Environmental Protection, Northeast Utilities, recreational organizations and businesses could be valuable in developing and implementing these policies.

3. STATE RECREATION POLICIES. The State of Connecticut holds a significant role in the recreational aspects of the river corridor due to its State forest and park lands, and its comprehensive outdoor recreation planning responsibilities. Full coordination with the State in recreational matters could be pursued to insure the state's commitment to protection of the ecological and cultural values of the river while providing for controlled public use.

4. STATE MINIMUM FLOW STANDARDS are being considered to regulate the minimum flow and release of water from any dam or other structure which impounds or diverts waters in which fish are stocked by the State. These regulations are primarily intended to protect the state's stocking program, however, they also give consideration to water quality, wildlife and recreational values. Coordination with the State in developing and applying these regulations to the Housatonic River could be useful in protecting the area's recreational values.

5. FEDERAL ENERGY REGULATORY COMMISSION LICENSING of Northeast Utilities' hydro-electric projects on the Housatonic involves among other things, the development of plans for outdoor recreation (Exhibit R) and the protection of fish and wildlife (Exhibit S) in coordination with federal, state, regional and local agencies. These guidelines provide an opportunity for water release schedules to be coordinated with fish, wildlife and recreational purposes; for boating safety precautions to be made near the dams; for the cost of recreation to be shared with the utilities; and for other actions to be taken which further the preservation efforts on the river. Coordination and updating of these Exhibits with the facilities development plan and activities management program mentioned earlier, are essential to insure the proper timing, design, location and management of these proposals.

6. LAND AND WATER CONSERVATION FUNDS provide 50/50 matching grants through the State of Connecticut and U.S. Bureau of Outdoor Recreation for the acquisition and development of recreation sites. Wild and Scenic River designation might encourage the state to give a high priority to the funding of projects on the Housatonic River which are con-



Water Quality Management

The Water Quality Management Program should be designed to maintain and enhance the water quality and free-flowing condition of the river. Specifically, this plan should include coordination with water quality control programs for the upstream and tributary areas to the river corridor and special attention for the PCB and other pollution problems. The following are some of the legal and administrative tools available to control water quality.

1. AREAWIDE WATER QUALITY MANAGEMENT PROGRAM. This is a planning program, established under Section 208 of the Federal Water Pollution Control Act Amendments of 1972, which is designed to tie together water pollution control and abatement regulations for both point and non-point sources. The results of this program will be the identification of state and local agencies needed for implementing long term Water Quality Management Programs, including the National Pollution Discharge Elimination System, EPA con-

programs in Connecticut, Massachusetts and New York could give consideration to the formation of an interstate management agency for the entire Housatonic River basin. The New England Interstate Water Pollution Control Commission might be an element in facilitating this interstate cooperation.

2. NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM. This is a permit program, currently in effect throughout the Housatonic River basin,designed to control the discharge of pollutants. It includes a tight regulatory system with precise and detailed abatement requirements, heavy penalties for violations, and several opportunities for public involvement. Since the states have primary responsibility to administer this program within the framework of the federal law, coordination with New York, Massachusetts, and Connecticut is necessary to insure water quality standards are met as scheduled for the Housatonic River. This coordination can be accomplished through the NPDES public participation program which allows public access to permits and reports; requires public notices, fact sheets, and hearings before a permit is issued; and includes the public's right to take court action.

3. U.S. CORPS OF ENGINEERS PERMIT PROGRAM. This program regulates the discharge of dredge and fill materials in coastal and inland waters and wetlands through the issuing of permits under Section 404 of the Federal Water Pollution Control Act Amendments of 1972. It requires the consideration of environmental, social, and economic impacts, and the involvement

hearings and reports. Coordination with this program throughout the Housatonic River basin could be pursued to prevent degradation of water quality from site development fills, causeway and road fills, dams and dikes, property protection or reclamation devices, sanitary landfills and other projects.

4. CONNECTICUT'S STATE AUTHORITIES. The State of Connecticut has several programs which protect the water quality and free-flowing condition of its waterways. Already mentioned are the 208 and NPDES programs, the Inland Wetland regulations, the Stream Channel Encroachment Lines, the proposed Minimum Stream Flow Regulations and the Connecticut Environmental Protection Act. In addition, the state has authority over the construction and maintenance of all dams to protect the public welfare. Coordination with state in its exercise of these authorities on the Housatonic and its tributary could be useful in protecting water quality.

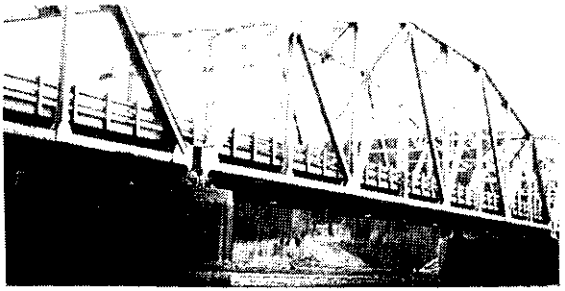
5. LOCAL PRESERVATION EFFORTS. In the New York and Massachusetts portions of the Housatonic River basin there is local interest in protecting the river and its environment. Coordination with these efforts could be pursued through the Housatonic River Watershed Association in Massachusetts and the Dutchess County Planning Federation in New York.

6. PLANNING COORDINATION could be pursued with all state, regional and federal agencies involved in planning programs which encompass the river corridor, as

should be given to those programs which study and plan for the Housatonic River basin as a whole. The New England River Basins Commission will conduct a Housatonic River Basin - Overview which could be fundamental to the coordination of New York, Massachusetts and Connecticut's water pollution control programs.

7. ENVIRONMENTAL REVIEW PROGRAMS. Several state and federal programs that review projects for their impact on environmental and cultural values, as mentioned for the Land Use Management Program, also consider water quality and free-flowing condition in their evaluation. Coordination with these programs could be pursued.

8. SPECIAL POLICIES. Guidelines for the proper conduct of agriculture, timbering, mining, construction, landfill, sewage disposal and other activities in the river corridor could be developed to protect water quality.



The Connecticut 208 program will recommend best management practices for some of these activities which could be useful in developing these guidelines. Also, policies on the construction of dams, bridges and other water resource projects could be developed to protect the free-flowing condition of the river through

IMPLEMENTATION

Implementation is the fourth phase of the planning process and involves the formation of a managing agency to execute the programs of the management plan. The structure of this agency could include a small leadership committee and a larger advisory body. If Wild and Scenic River designation is desired, the leadership of the agency should be delegated to the town governments, the State of Connecticut, or a combined state/local arrangement. In addition, the advisory body should be made up of representatives from all organizations involved in preservation of the river including town governments, the State of Connecticut, regional planning agencies, landowners, and conservation/recreation groups.

The major responsibilities of the managing agency in executing the management plan should be to provide coordination and leadership in carrying out its major programs, and to evaluate, revise and update the plan as necessary. State enabling legislation may be required to authorize the managing agency with certain responsibilities such as the ability to apply for state or federal grants,

WILD AND SCENIC RIVER DESIGNATION

National Wild and Scenic River designation represents a federal commitment to the protection of a river and its immediate environment. The specific benefits provided by National designation are the following:

1. Protection from federally licensed or funded water resources projects, such as dams, water conduits, reservoirs, powerhouses, transmission lines and other project works (Section 7 of P.L. 90-542). In addition, the Department of the Interior can be an appellant agency.

2. Added compulsion to improve water quality through cooperative efforts by the managing agency, the Secretary of the Interior, the State water pollution control agencies and the Environmental Protection Agency (Section 11(c) of P.L. 90-542).

3. Higher priority for financing from existing federal programs for compatible projects which improve the river and its watershed.

For the Housatonic River, Wild and Scenic River designation would provide an additional layer of protection in which the federal government takes a special interest in preservation of the river. This federal interest could provide the "added leverage" needed in dealing with certain problems affecting the future of the river, such as interstate water quality problems, growth trends in the Danbury-New Milford area, and the expansion of recreational facilities.

If a decision is made through local action to pursue National Wild and Scenic River designation, the following steps should be undertaken. First, the completed management plan should be presented to the local towns for approval, and then to the State legislature for recognition as a state scenic river and for legislation officially recognizing the managing agency. The governor should then submit the plan to the Secretary of the Interior with a request for National Wild and Scenic River designation as a state-designated unit, as provided for under Section 2(a)(ii) of the Wild and Scenic Rivers Act.

The Secretary of Interior will review the management plan for acceptability according to Section 10(a) of the Act, which states that "Each component of the national wild and scenic river system shall be administered..... to protect and enhance the values which caused it to be included in said system without....limiting other uses that do not substantially interfere with public use and enjoyment of these values... primary emphasis shall be given to protecting its esthetic, scenic, historic, archaeologic and scientific features." Upon approval of the management plan, the Secretary of Interior will grant inclusion

APPENDIX

PRINCIPLES AND STANDARDS

Principles and Standards is a procedure developed by the Water Resources Council in 1973 to guide Federal water resources planning activities. The goal of this procedure is to improve the planning criteria used to achieve wise use to the Nation's water and related land resources by placing environmental concerns on a basis equal to economic development. This allows decision makers to identify and evaluate tradeoffs between the objective of national economic development and environmental quality.

The Principles and Standards procedure used here involves 1) the development of several plans or scenarios for the river corridor, 2) the evaluation and comparison of these plans, and 3) the comparison of each plan with the Wild and Scenic River plan.

These plans have been developed to represent four possible development trends in the river corridor - 1) the continuation of existing trends, 2) the growth of economic development in the area, 3) the inclusion of the river in the National Wild and Scenic River System, and 4) the maximum protection of the natural environment. An evaluation of the effect of each plan on the objectives of environmental quality, economic development, regional development and social well-being is made and presented in the Principles and Standards Table A. A comparison between each plan and the Existing Trends Plan is made in Tables B-E to indicate the net effects of each plan on environmental quality, plan data minus Existing Trends Plan data). A similar comparison is made between each plan and the Wild and Scenic River Plan in Table F-H.

DESCRIPTION OF THE PLANS

The four plans or scenarios developed here address possible future development and protection of the visual corridor of the Housatonic River from the Massachusetts/ Connecticut border to Boardman Bridge. These plans include estimates of population growth, mining and timbering activity, river corridor acreage, town zoning and ordinances, land acquisition and easement programs, tax base changes, and the development of recreational facilities. The data used here have been developed from the best available sources of information, yet should be interpreted only as estimates of future conditions. The Wild and Scenic River Plan data, especially, should be interpreted as an estimate of future conditions and not as a set of minimum standards. This plan is simply an example of one of the many schemes for protecting the river within the National Wild and Scenic River System.

The EXISTING TREND PLAN assumes that growth and development in the eight river corridor towns will occur as projected in existing state and regional plans through enforcement of local and state regulations. Specifically this means that the State planning designation of the river will continue to be "Major Recreation Stream in an Open Space and Rec-

the river's flood plain and wetlands. State parks and forest will continue in their present use without significantly changing their boundaries. State plans to purchase the abandoned Berkshire Railroad line from New Milford to North Canaan for a tourist excursion will be realized. Existing low density (1-5 acre) zoning regulations will be enforced. Modest mining and timbering activities in the corridor will continue. Pressure to convert agricultural land to residential and other uses will also continue. Population growth will occur at the 1.5% average annual increase as projected by the State. Additional recreation facilities will be developed. Additional recreation facilities will be developed through the utility companies and the private sector. This example anticipates that the utility companies, through the Federal Energy Regulatory Commission's licensing procedure will develop a modest picnicking/campground area and open five miles of their riverside property for fishing access and stocking. In addition, several new campgrounds and canoe liveries are expected to develop through the private sector. Canoeing, fishing, hunting, camping and hiking activities will continue to increase at their current national trend.

The ECONOMIC DEVELOPMENT PLAN assumes that growth and development in the eight river corridor towns will be accelerated over current projections by the major urban developments in the adjacent Danbury metropolitan area. These proposed developments include the New Milford sewage treatment plant and Route 7 ex-

activities in the area and increase suburban pressures on the towns. Specifically, this assumption implies that suburban and second home development pressures will bring about some medium density (1/2-1 acre) zoning in the valley. Mining and timbering activities will increase to meet accelerated building demands in the region. Population growth will occur at approximately a 2.2% average annual increase. Conversion of agricultural lands will lead to several new residential projects and mining sites in the river corridor. New recreation facilities will be the same as anticipated in the existing trends plan, although the private campground and canoe livery businesses are expected to expand more rapidly due to the accelerated local population growth. Canoeing, fishing, hunting, camping, and hiking will continue to increase at their current national trend.

The WILD AND SCENIC RIVER PLAN assumes designation of 41 miles of the Housatonic River and implementation of a management plan which conserves the existing environmental and cultural assets of the valley. Although a detailed management plan will be eventually developed for the area, a general concept plan is presented here for this analysis, which is only one of many acceptable plans for the Housatonic as a National Wild and Scenic River. This plan assumes that town ordinances could be developed to protect the visual corridor from inappropriate development and to protect the flood plains for their ecological and archaeological values. Provisions could be made requiring an archaeological survey

ENVIRONMENTAL QUALITY				
CORRIDOR PROTECTION				
1 Wild & Scenic River Miles	0	0	41	41
2 Wild and Scenic River Corridor	0	0	32000 ac	32000 ac
3 Streambelt Ordinance	0	0	4000 ac	4000 ac
4 Land Use.& New Const. Ordin.	0	0	15000 ac	32000 ac
5 Visual Character Ordinance	0	0	17000 ac	1000 ac
6 Inland Wetlands Protection	3900 ac	3900 ac	3900 ac	3900 ac
7 Flood Insurance Protection	6200 ac	6200 ac	6200 ac	6200 ac
8 State Owned Land	2500 ac	2500 ac	2500 ac	2500 ac
9 Land Trust Property	1400 ac	1400 ac	1400 ac	1400 ac
10 Low Density Zoning	31000 ac	25000 ac	32000 ac	32000 ac
11 Medium Density Zoning	0	6000 ac	0	0
12 Potential Easement	0	0	500 ac	2000 ac
13 Potential Acquisition	0	0	100 ac	1000 ac
NATURAL PROCESS PROTECTION[1]				
14 Geologic Processes	ma	ma	mp	hp
15 Soil Stability	ma	ma	mp	hp
16 Water Quality	mp	mp	hp	hp
17 Vegetation Diversity	ma	ma	mp	hp
18 Fish & Wildlife Habitat	ma	ma	mp	hp
19 Rare & Endangered Species	mp	mp	hp	hp
20 Air Quality	ma	ma	mp	hp
21 Scenic Quality	ma	ma	hp	hp
ECONOMIC DEVELOPMENT				
DIRECT COSTS TO MANAGING AGENCY				
22 Acquisition Costs (1975 $)	0	0	$895000	$6,980,000
23 Development Costs	0	0	0	0
24 Operations & Maint. Costs	0	0	$ 25000/yr	$25000/yr
ANNUAL FOREGONE OPPORTUNITIES				
25 Mineral Resources	480 ac-ft	780 ac-ft	780 ac-ft	1980 ac-ft
26 Forestry Resources	105 ac	120 ac	115 ac	170 ac
27 Agricultural Resources	195 ac	210 ac	200 ac	215 ac
28 Hydro-electric Power Capacity	2000 mw	2000 mw	2000 mw	2000 mw
REGIONAL DEVELOPMENT				
ANNUAL GROWTH INDICATORS				
29 Population Growth Rate	1.5 %	2.2 %	1.5 %	1.5 %
30 Housing Starts	190	280	190	190
31 Retail Sale Growth(1974 $)	$ 1 million	$ 1.5 million	$ 1 million	$ 1 million
32 Additional Employees	150	300	150	150
ANNUAL REAL PROPERTY TAX FOREGONE				
33 N. Canaan (am't/ % Grand Levy)	0	0	$ 900 / 0.1%	$ 4500 / 0.5%
34 Canaan	0	0	$1700 / 0.4%	$ 8500 / 2.1%
35 Salisbury	0	0	$ 300 / 0.0%	$15,100 / 1.0%
36 Cornwall	0	0	$1500 / 0.2%	$ 7400 / 1.3%
37 Sharon	0	0	$1200 / 0.1%	$ 6000 / 0.6%
38 Kent	0	0	$6800 / 0.8%	$34,200 / 4.4%
39 Sherman	0	0	$ 600 / 0.0%	$ 3100 / 0.4%
40 New Milford	0	0	$3300 / 0.0%	$19,600 / 0.3%
SOCIAL WELL-BEING				
RECREATION FACILITIES[2]				
41 Roadside Parks	5	5	5	5
42 Campgrounds (public)	3	3	3	3
43 Campgrounds (private)	6	6+	6-	6-
44 Canoe Livery (private)	3	3+	3-	3-
45 Trails (miles)	50 mi	50 mi	50 mi	50 mi
46 Stocked Fishing	11.5 mi	11.5 mi	11.5 mi	11.5 mi
47 Hunting Grounds	1336 ac	1336 ac	1336 ac	1336 ac
48 Tourist Railroad	30 mi	30 mi	30 mi	30 mi
49 Swimming Sites	0	0	0	0
RECREATION ACTIVITIES[3]				
50 Canoeing	high	high	moderate	moderate
51 Fishing	high	high	moderate	moderate
52 Hiking	high	high	moderate	moderate
53 Swimming	moderate	high	moderate	moderate
54 Pleasure Driving	moderate	high	moderate	moderate
55 Picnicking	high	high	moderate	moderate
56 Camping	high	high	moderate	moderate
57 Hunting	moderate	moderate	moderate	moderate
CULTURAL RESOURCES[1]				
58 Historic Sites	mp	ma	mp	mp
59 Archaeologic Sites	mp	ma	mp	mp

potential archaeological sites. Critical natural areas, such as very steep slopes, bedrock outcrops, critical plant and animal species habitats, islands, waterfalls, natural springs, and wildlife areas could be identified and protected through regulations, easements, or acquisition. In particular, this example calls for the managing agency to acquire-in-fee 100 acres and to purchase easements for 500 acres. New recreational facilities would be generally the same as anticipated in the Existing Trends Plan although the managing agency would have greater control over the location, amount, type, and timing of all new facilities, both public and private. Furthermore, recreational activities could be controlled and managed to protect the environmental and cultural values of the river and its valley.

Population growth under this plan is assumed to occur at the 1.5% average annual increase projected by the State for the area. Some restrictions could be placed on the location of mining and timbering activities in the corridor to protect the river, however, these restrictions would not exclude these activities from occuring in the corridor. The conversion of agricultural land to other uses could be reduced as easements are encouraged to protect the agricultural character and heritage of the valley.

The ENVIRONMENTAL PROTECTION PLAN assumes that a watershed association is formed to improve water quality and to preserve the special values of the entire Housatonic River Basin. This association would support National Wild and Scenic River protection for and for other outstanding segments of the river. Furthermore, this association would encourage a strong program for protecting the ecological factors of the river as a part of the Wild and Scenic River management plan. Such a plan could call for an extensive program of acquisition and easements to protect most of the ecologically critical lands. In this example, the managing agency would acquire-in-fee 1000 acres and purchase easements for 2000 acres. Town ordinances could be enacted to control all new construction and to exclude mining and timbering activities from the corridor. Much of the agricultural lands would be preserved through easements. Population growth in the corridor is assumed to continue at 1.5% average annual increase as projected by the State. New recreation facilities would generally be the same as anticipated in the existing trends plan although the managing agency would have greater control over the location, amount, type and timing of all new facilities, both public and private. Furthermore, recreational activities could be controlled and managed to protect the environmental and cultural values of the river and its valley.

Environmental Quality Objective

The effect of each plan on the environmental quality of the Housatonic valley is evaluated in terms of the amount and type of protection provided for the waterway, visual corridor and natural processes of the area. This analysis includes an indication of the acres of land protected through local, state and Federal programs, and an estimation of how each plan protects or adversely effects the natural processes of the valley. Also, a comparison is made to indicate the net effects on environment quality of each plan over the existing trends plan.

The EXISTING TRENDS PLAN protects less than 30% of the river corridor through the Inland Wetlands Act, the National Flood Insurance Program, State ownership and private land trusts. Since these legal protections often overlap in the area they protect, a more precise estimate is difficult, however, it is clear that a relatively small part of the river corridor is protected under existing programs. This fact, plus the continued expansion of sand and gravel extraction, timber harvesting, and residential development account for the moderately adverse effects on this plan on geology, soils, vegetation, fish and wildlife, air quality and scenery of the valley. Another important factor in determining these moderately adverse effects is the possibility of increasing the size and operation of the two hydro power dams in the area. Although this is an unlikely development at the current time, it is a future threat to the natural processes of the valley.

The water quality and rare and endangered species of the Housatonic Valley, however, do maintain a moderate degree of protection under this plan. Water quality will continue to be monitored and upgraded through the State and EPA's water quality programs, the National Environmental Protection Act, and the State Inland Wetlands Program.

Rare and endangered species in the valley are generally protected through programs to preserve their critical habitats, such as conservation easements, State land ownership, and private land trusts.

The ECONOMIC DEVELOPMENT PLAN provides the same basic legal protections to the Housatonic corridor, as the Existing Trends Plan, but has more adverse effects on the natural processes of the valley. These adverse effects are due to the assumed accelerated population growth and resulting in increased activities by sand and gravel operations, timber harvesting, and residential development. It is anticipated that the increase of these activities will adversely impact the environmental quality to a greater degree than the Existing Trends Plan, but not to a severe or highly adverse degree.

The WILD AND SCENIC RIVER PLAN provides additional legal protections to the Housatonic Valley over Existing Trends. These protections include an acquisition/easement program for critical areas, the enactment of streambelt ordinances which protect the flood plain and associated critical

ECONOMIC DEVELOPMENT PLAN			
CORRIDOR PROTECTION			
1 Wild & Scenic River Miles	0	0	0
2 Wild and Scenic River Corridor	0	0	0
3 Streambelt Ordinance	0	0	0
4 Land Use & New Const. Ordin	0	0	0
5 Visual Character Ordinance	0	0	0
6 Inland Wetlands Protection	3900 ac	3900 ac	0
7 Flood Insurance Protection	6200 ac	6200 ac	0
8 State Owned Land	2500 ac	2500 ac	0
9 Land Trust Property	1400 ac	1400 ac	0
10 Low Density Zoning	25000 ac	31000 ac	-6000 ac
11 Medium Density Zoning	6000 ac	0	6000 ac
12 Potential Easement	0	0	0
13 Potential Acquisition	0	0	0
NATURAL PROCESS PROTECTION[1]			
14 Geologic Processes	ma	ma	0
15 Soil Stability	ma	ma	0
16 Water Quality	mp	mp	0
17 Vegetation Diversity	ma	ma	0
18 Fish & Wildlife Habitat	ma	ma	0
19 Rare & Endangered Species	mp	mp	0
20 Air Quality	ma	ma	0
21 Scenic Quality	ma	ma	0
WILD & SCENIC RIVER PLAN			
CORRIDOR PROTECTION			
1 Wild & Scenic River Miles	41	0	41
2 Wild and Scenic River Corridor	32000 ac	0	32000 ac
3 Streambelt Ordinance	4000 ac	0	4000 ac
4 Land Use & New Const. Ordin	15000 ac	0	15000 ac
5 Visual Character Ordinance	17000 ac	0	17000 ac
6 Inland Wetlands Protection	3900 ac	3900 ac	0
7 Flood Insurance Protection	6200 ac	6200 ac	0
8 State Owned Land	2500 ac	2500 ac	0
9 Land Trust Property	1400 ac	1400 ac	0
10 Low Density Zoning	32000 ac	31000 ac	1000 ac
11 Medium Density Zoning	0	0	0
12 Potential Easement	500 ac	0	500 ac
13 Potential Acquisition	100 ac	0	100 ac
NATURAL PROCESS PROTECTION[1]			
14 Geologic Processes	mp	ma	favorable
15 Soil Stability	mp	ma	favorable
16 Water Quality	hp	mp	favorable
17 Vegetation Diversity	mp	ma	favorable
18 Fish & Wildlife Habitat	mp	ma	favorable
19 Rare & Endangered Species	hp	mp	favorable
20 Air Quality	mp	ma	favorable
21 Scenic Quality	hp	ma	favorable
ENVIRONMENTAL PROTECTION PLAN			
CORRIDOR PROTECTION			
1 Wild & Scenic River Miles	41	0	41
2 Wild and Scenic River Corridor	32000 ac	0	32000 ac
3 Streambelt Ordinance	4000 ac	0	4000 ac
4 Land Use & New Const. Ordin.	32000 ac	0	32000 ac
5 Visual Character Ordinance	1000 ac	0	1000 ac
6 Inland Wetlands Protection	3900 ac	3900 ac	0
7 Flood Insurance Protection	6200 ac	6200 ac	0
8 State Owned Land	2500 ac	2500 ac	0
9 Land Trust Property	1400 ac	1400 ac	0
10 Low Density Zoning	32000 ac	31000 ac	1000 ac
11 Medium Density Zoning	0	0	0
12 Potential Easement	2000 ac	0	2000 ac
13 Potential Acquisition	1000 ac	0	1000 ac
NATURAL PROCESS PROTECTION[1]			
14 Geologic Processes	hp	ma	favorable
15 Soil Stability	hp	ma	favorable
16 Water Quality	hp	mp	favorable
17 Vegetation Diversity	hp	ma	favorable
18 Fish & Wildlife Habitat	hp	ma	favorable
19 Rare & Endangered Species	hp	mp	favorable
20 Air Quality	hp	ma	favorable
21 Scenic Quality	hp	ma	favorable

use and new construction, and to protect the visual character of the valley. In addition to these legal protections, the Wild and Scenic River program provides a federal committment to protect the river corridor from adverse federal actions, especially water resources projects. In total, this plan provides a high degree of protection to the natural process and environmental quality of the valley.

The ENVIRONMENTAL PROTECTION PLAN calls for the same legal protections as the Wild and Scenic River Plan plus a more extensive acquisition/easement program and a broader application of zoning ordinances on land uses and new construction. This plan would give the managing agency a greater degree of control over mining, timbering and residential development activities in the corridor, and the ability to protect the valley's forestry, agricultural, and scenic resources. In addition the coordination of this plan with an active watershed program, would give a very high degree of protection to the environmental quality of the valley.

Economic Development Objective

The effect of each plan on economic development in the Housatonic valley is evaluated in terms of the direct costs of implementing each plan, and the indirect costs of economic resources displaced by land acquisition and development. In this analysis, the direct costs include a budget for the acquisition/easement program, the development of recreational facilities, and the annual operations and maintenance costs. The indirect costs are measured by an estimate of the foregone mineral, forestry, agricultural, and hydro power resources. In addition, each plan is compared with the Existing Trends Plan to indicate its net effects on economic development.

The EXISTING TRENDS PLAN does not include any significant acquisition or development proposals in the corridor. Mineral, forestry and agricultural resources, however, are being displaced by growth and development in the Housatonic Valley. The mineral resources in the corridor of sand and gravel totals approximately 41,000 acre-feet. According to the Bureau of Mines, "In terms of actual production and use, the supply of sand, gravel, and stone in the area is virtually unlimited for the foreseeable future. However,..... due to current rate of both direct and indirect aggregate elimination by residential, industrial, and public works development, sources of naturally occurring granular aggregate in the District may no longer be available in about 20 years" (i.e. 1986). The rate of mineral resource depletion for the Existing Trends Plan is approxi-

Development Objective			
ECONOMIC DEVELOPMENT PLAN			
DIRECT COSTS TO MANAGING AGENCY			
22 Acquisition Costs (1975 $)	0	0	0
23 Development Costs	0	0	0
24 Operations & Maint. Costs	0	0	0
ANNUAL FOREGONE OPPORTUNITIES			
25 Mineral Resources	780 ac-ft	480 ac-ft	300 ac-ft
26 Forestry Resources	120 ac	105 ac	15 ac
27 Agricultural Resources	210 ac	195 ac	15 ac
28 Hydro-electric Power Capacity	2000 mw	2000 mw	0
WILD & SCENIC RIVER PLAN			
DIRECT COSTS TO MANAGING AGENCY			
22 Acquisition Costs (1975 $)	$ 895000	0	$ 895000
23 Development Costs	0	0	0
24 Operations & Maint. Costs	$ 25000/yr	0	$ 25000/yr
ANNUAL FOREGONE OPPORTUNITIES			
25 Mineral Resources	780 ac-ft	480 ac-ft	300 ac-ft
26 Forestry Resources	115 ac	105 ac	10 ac
27 Agricultural Resources	200 ac	195 ac	5 ac
28 Hydro-electric Power Capacity	2000 mw	2000 mw	0
ENVIRONMENTAL PROTECTION PLAN			
DIRECT COSTS TO MANAGING AGENCY			
22 Acquisition Costs (1975 $)	$6,980,000	0	$6,980,000
23 Development Costs	0	0	0
24 Operations & Maint. Costs	$25,000/yr	0	$ 25,000/yr
ANNUAL FOREGONE OPPORTUNITIES			
25 Mineral Resources	1980 ac-ft	480 ac-ft	1500 ac-ft
26 Forestry Resources	170 ac	105 ac	65 ac
27 Agricultural Resources	215 ac	195 ac	20 ac
28 Hydro-electric Power Capacity	2000 mw	2000 mw	0

resources total approximately 21,400 acres in the Housatonic corridor, although timbering activities are minimal. Depletion of this forestry resource due to growth and development occurs at 0.5% per year. Agricultural resources are estimated at 18% of the valley and are being converted to other uses at the rate of 3.4% annually, In addition, the potential of the corridor to support a new power project has been foregone by the placement of the prime site for this development in a 30 year conservation easement.

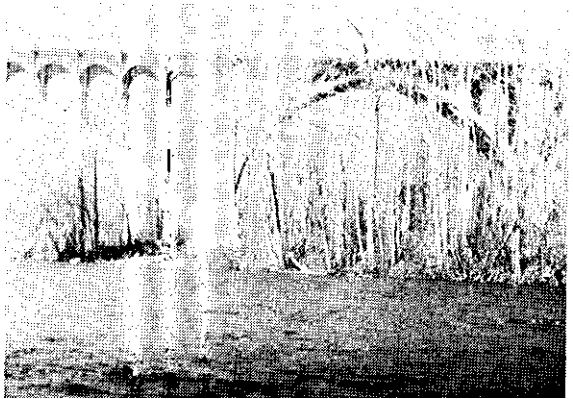
The ECONOMIC DEVELOPMENT PLAN, like the Existing Trends Plan, does not include any significant acquisition or development proposals in the corridor. Mineral, forestry and agricultural resources, however, are foregone at a slightly greater rate, since growth and development in the valley are assumed to occur at an accelerated rate under this plan.

The WILD AND SCENIC RIVER PLAN would require a $895,000 expenditure for the acquisition/easement program. This estimate is based on the acquisition-in-fee of 100 acres and the purchase of easements for 500 acres. The land values used in this estimate are $1800 per acre as an average value and $25,000 per acre for prime developable land. Development costs are not anticipated under this plan since the projected expansion of recreational facilities is anticipated to be developed by the power companies through the Federal Energy Regulatory Commission's licensing procedures. Operation and maintenance estimates are based on salary and expenses required to implement and update the management plan by a full-time professional.

Economic resources of minerals, forestry and agricultural would be depleted at a slightly greater rate than under the Existing Trends Plan due to the proposed acquisition/easement program.

The ENVIRONMENTAL PROTECTION PLAN calls for acquisition costs of approximately $7 million. This includes acquisition-in-fee of 1000 acres and easements for 2000 acres. Like the Wild and Scenic River Plan, no development costs are anticipated. Maintenance and operations estimates include a salary and expenses for implementation and update of the management plan by a full-time professional.

Economic resources are foregone at a higher rate under this plan than the Existing Trends Plan due to the extensive acquisition/ easement program. Mineral resources would be depleted at 4.8% annually, forestry resources at .8% per year, and agricultural land at 3.7% per year.



Regional Development Objective

The effect of each plan on regional development is evaluated in terms of growth in the 8 town study area and real property taxes foregone. Growth indicators include population, housing, retail sales and employment. Real property taxes foregone for each town are based on the estimated value of acquired lands and easements proposed under each plan.

The EXISTING TREND PLAN assumes population growth in the 8 towns will occur at 1.5% annually to the year 2000 as projected by the Connecticut Department of Planning and Energy. The growth in housing starts, retail sales and employment are all based on this annual population increase and are reflective of normal growth projections for the area. Real property taxes will not be effected by this plan since no major land acquisition is proposed.

The ECONOMIC DEVELOPMENT PLAN assumes a 2.2% annual population growth resulting from major urban developments in the Danbury-New Milford area. Housing starts and retail sales are greater than under the existing trends plan, due to this accelerated population growth. Employment, however, reflects not only the increased population of the area, but also the greater employment rate of the Danbury Labor Market. Some of this increase employment could be attributed to increased sand and gravel mining, timber harvesting, and construction in the Housatonic corridor. No major acquisitions of land or easements are foreseen by this plan which would deplete the real property tax base.

The WILD AND SCENIC RIVER PLAN has no significant effect on regional growth since population, housing, retail sales, and employment projections are the same as existing trends. Real property taxes, however, will be effected by this plan due to the acquisition/easement program which removes some properties from the tax base. The estimated value of real property taxes foregone under this plan is less than 1% of the Grand Levy of each town and, therefore, does not have a significant effect on regional development of the towns.

The ENVIRONMENTAL PROTECTION PLAN has no significant effect on population, housing, retail sales, and employment over the Existing Trends Plan. Real property taxes, however, are more greatly effected by this plan, than under the Wild and Scenic River Plan, since more property is acquired or placed under an easement. The greatest effect on this plan on real property tax occurs in Kent and Canaan where the Grand Levy would be reduced by 4.4% and 2.1% respectively.

ECONOMIC DEVELOPMENT PLAN

ANNUAL GROWTH INDICATORS			
29 Population Growth Rate	2.2 %	1.5 %	0.7 %
30 Housing Starts	280	190	90
31 Retail Sale Growth (1974 $)	$ 1.5 million	$ 1 million	$.5 million
32 Additional Employees	300	150	150
ANNUAL REAL PROPERTY TAX FOREGONE			
33 N. Canaan (am't/ % Grand Levy)	0	0	0
34 Canaan	0	0	0
35 Salisbury	0	0	0
36 Cornwall	0	0	0
37 Sharon	0	0	0
38 Kent	0	0	0
39 Sherman	0	0	0
40 New Milford	0	0	0

WILD & SCENIC RIVER PLAN

ANNUAL GROWTH INDICATORS			
29 Population Growth Rate	1.5 %	1.5 %	0
30 Housing Starts	190	190	0
31 Retail Sale Growth (1974 $)	$ 1 million	$ 1 million	0
32 Additional Employees	150	150	0
ANNUAL REAL PROPERTY TAX FOREGONE			
33 N. Canaan (am't/ % Grand Levy)	$ 900 / 0.1%	0	$ 900 / 0.1%
34 Canaan	$1700 / 0.4%	0	$1700 / 0.4%
35 Salisbury	$ 300 / 0.0%	0	$ 300 / 0.0%
36 Cornwall	$1500 / 0.2%	0	$1500 / 0.2%
37 Sharon	$1200 / 0.1%	0	$1200 / 0.1%
38 Kent	$6800 / 0.8%	0	$6800 / 0.8%
39 Sherman	$ 600 / 0.0%	0	$ 600 / 0.0%
40 New Milford	$3300 / 0.0%	0	$3300 / 0.0%

ENVIRONMENTAL PROTECTION PLAN

ANNUAL GROWTH INDICATORS			
29 Population Growth Rate	1.5 %	1.5 %	0
30 Housing Starts	190	190	0
31 Retail Sale Growth (1974 $)	$ 1 million	$ 1 million	0
32 Additional Employees	150	150	0
ANNUAL REAL PROPERTY TAX FOREGONE			
33 N. Canaan (am't/% Grand Levy)	$ 4500 / 0.5%	0	$ 4500 / 0.5%
34 Canaan	$ 8500 / 2.1%	0	$ 8500 / 2.1%
35 Salisbury	$15100 / 1.0%	0	$15100 / 1.0%
36 Cornwall	$ 7400 / 1.3%	0	$ 7400 / 1.3%
37 Sharon	$ 6000 / 0.6%	0	$ 6000 / 0.6%
38 Kent	$34200 / 4.4%	0	$34200 / 4.4%
39 Sherman	$ 3100 / 0.4%	0	$ 3100 / 0.4%
40 New Milford	$19600 / 0.3%	0	$19600 / 0.3%

The effect of each plan on social well-being is evaluated in terms of recreational opportunities and cultural resources available to the residents and visitors in the Housatonic valley. Recreational opportunities are indicated by the amount and type of facilities and the level of participation in various activities. Cultural resources are evaluated in terms of the degree of protection provided to the historical and archaeological resources of the area.

The EXISTING TRENDS PLAN anticipates a modest expansion of recreational facilities in the river corridor. Some new public facilities would be provided by the power companies under the Federal Energy Regulatory Commission's licensing procedures. Private facilities, such as campgrounds and canoe liveries are expected to expand in response to population growth in and around the area. Recreation activity levels will probably continue to grow and eventually reach overcrowding levels for water related activities.

The protection of cultural resources will continue through the State Historical Commission's programs for historical and archaeological resources. However, uncontrolled development and scavenging of archaeological sites could have some negative effect on these resources.

The ECONOMIC DEVELOPMENT PLAN calls for a greater increase in private recreation facilities over the Existing Trends Plan, while additional public facilities are assumed to be the same as the

reflect the accelerated population growth of this plan and lead to crowded conditions.

Cultural resources will maintain the same protections through the State Historical Commission as under the Existing Trends Plan. It is anticipated that the increased population growth will adversely effect archaeological and historical resources to a greater degree than under the Existing Trends Plan, but not to a severe or highly adverse degree.

The WILD AND SCENIC RIVER PLAN calls for the controlled expansion of recreational facilities to maintain activity levels at a moderate level for a pleasant recreational experience. No additional public facilities are anticipated by this plan over the Existing Trends Plan since existing facilities are adequate for public enjoyment of the river. Private recreation facilities are expected to expand more slowly under this plan than the Existing Trends Plan, since management policies would be developed to guide both the number and quality of private recreation development for the overall protection of the river. Recreation activity levels would also be guided through management policies to maintain a pleasant recreation experience.

Cultural resources of the valley would receive a higher degree of protection under this plan than under the Existing Trends Plan due to the acquisition of critical areas, legal protections, and special management policies. Archaeological sites would receive additional protection due to their outstanding value and location in

ECONOMIC DEVELOPMENT PLAN			
RECREATION FACILITIES[2]			
41 Roadside Parks	5	5	0
42 Campgrounds (public)	3	3	0
43 Campgrounds (private)	6+	6	+
44 Canoe Livery (private)	3+	3	+
45 Trails (miles)	50 mi	50 mi	0
46 Stocked Fishing	11.5 mi	11.5 mi	0
47 Hunting Grounds	1336 ac	1336 ac	0
48 Tourist Railroad	30 mi	30 mi	0
49 Swimming Sites	0	0	0
RECREATION ACTIVITIES[3]			
50 Canoeing	high	high	0
51 Fishing	high	high	0
52 Hiking	high	high	0
53 Swimming	high	moderate	unfavorable
54 Pleasure Driving	high	moderate	unfavorable
55 Picnicking	high	high	0
56 Camping	high	high	0
57 Hunting	moderate	moderate	0
CULTURAL RESOURCES[1]			
58 Historic Sites	ma	mp	unfavorable
59 Archaeologic Sites	ma	mp	unfavorable
WILD & SCENIC RIVER PLAN			
RECREATION FACILITIES 2			
41 Roadside Parks	5	5	0
42 Campgrounds (public)	3	3	0
43 Campgrounds (private)	6-	6	-
44 Canoe Livery (private)	3-	3	-
45 Trails (miles)	50 mi	50 mi	0
46 Stocked Fishing	11.5 mi	11.5 mi	0
47 Hunting Grounds	1336 ac	1336 ac	0
48 Tourist Railroad	30 mi	30 mi	0
49 Swimming Sites	0	0	0
RECREATION ACTIVITIES 3			
50 Canoeing	moderate	high	favorable
51 Fishing	moderate	high	favorable
52 Hiking	moderate	high	favorable
53 Swimming	moderate	moderate	0
54 Pleasure Driving	moderate	moderate	0
55 Picnicking	moderate	high	favorable
56 Camping	moderate	high	favorable
57 Hunting	moderate	moderate	0
CULTURAL RESOURCES[1]			
58 Historic Sites	mp	mp	0
59 Archaeologic Sites	mp	mp	0
ENVIRONMENTAL PROTECTION PLAN			
RECREATION FACILITIES[2]			
41 Roadside Parks	5	5	0
42 Campgrounds (public)	3	3	0
43 Campgrounds (private)	6-	6	-
44 Canoe Livery (private)	3-	3	-
45 Trails (miles)	50 mi	50 mi	0
46 Stocked Fishing	11.5 mi	11.5 mi	0
47 Hunting Grounds	1336 ac	1336 ac	0
48 Tourist Railroad	30 mi	30 mi	0
49 Swimming Sites	0	0	0
RECREATION ACTIVITIES[3]			
50 Canoeing	moderate	high	favorable
51 Fishing	moderate	high	favorable
52 Hiking	moderate	high	favorable
53 Swimming	moderate	moderate	0
54 Pleasure Driving	moderate	moderate	0
55 Picnicking	moderate	high	favorable
56 Camping	moderate	high	favorable
57 Hunting	moderate	moderate	0
CULTURAL RESOURCES[1]			
58 Historic Sites	mp	mp	0
59 Archaeologic Sites	mp	ma	0

NOTE 1: mp = highly protective NOTE 2: "+" more than NOTE 3: high - crowded conditions

legal protection would be focused. Historical sites will be protected by scenic easements and protective zoning.

The ENVIRONMENTAL PROTECTION PLAN calls for the same control of recreational facilities and activities as the Wild and Scenic River Plan. Cultural resources, however, would receive a slightly higher degree of protection to the archaeological and historical sites due to the more extensive acquisition/easement program.

WILD AND SCENIC RIVER PLAN COMPARISON

Since Wild and Scenic River designation for 41 miles of the Housatonic River is recommended by this report, a closer look at the Wild and Scenic River Plan in comparison to the other alternative plans is in order.

In comparison to the EXISTING TRENDS PLAN, the Wild and Scenic River plan provides a higher degree of environmental protection to the river corridor. This is achieved through local ordinances to guide land use and new con-

through an acquisition/easement program for critical areas. The net result of these protections is favorable to the natural processes of the valley as mining, timbering and residential development are guided to minimize their environmental impacts.

This plan, however, does incur a net cost of economic and regional development over the Existing Trends Plan due to the direct costs of implementing the plan, and the indirect costs of natural resources foregone by land acquisition and restrictions on mining and timbering. The magnitude of these costs are quite reasonable when compared to the Grand Tax Levy of each town and the natural resource base of the corridor. The budget for the acquisition/easement program when distributed to each town in proportion to their percentage of the river corridor, represents less than 1% of the Grand Tax Levy of each town in 1975. Similarly, the net impact of natural resource depletion over the Existing Trends Plan is negligible with only .7% of the mineral resources, .047% of the forestry resources, and .008% of the agricultural resources being depleted from the corridor annually.

The social well-being objective is favorably affected by the Wild and Scenic River Plan as it provides management of recreation and some additional protection for cultural resources. The management of recreation is achieved through policies to guide the size, location, design, and timing of new facilities, and programs to maintain a moderate activity level. Cultural resources are protected under this plan through zoning

ENVIRONMENTAL QUALITY			
CORRIDOR PROTECTION			
1 Wild & Scenic River Miles	41	0	41
2 Wild and Scenic River Corridor	32000 ac	0	32000 ac
3 Streambelt Ordinance	4000 ac	0	4000 ac
4 Land Use & New Const. Ordin.	15000 ac	0	15000 ac
5 Visual Character Ordinance	17000 ac	0	17000 ac
6 Inland Wetlands Protection	3900 ac	3900 ac	0
7 Flood Insurance Protection	6200 ac	6200 ac	0
8 State Owned Land	2500 ac	2500 ac	0
9 Land Trust Property	1400 ac	1400 ac	0
10 Low Density Zoning	32000 ac	31000 ac	1000 ac
11 Medium Density Zoning	0	0	0
12 Potential Easement	500 ac	0	500 ac
13 Potential Acquisition	100 ac	0	100 ac
NATURAL PROCESS PROTECTION[1]			
14 Geologic Processes	mp	ma	favorable
15 Soil Stability	mp	ma	favorable
16 Water Quality	hp	mp	favorable
17 Vegetation Diversity	mp	ma	favorable
18 Fish & Wildlife Habitat	mp	ma	favorable
19 Rare & Endangered Species	hp	mp	favorable
20 Air Quality	mp	ma	favorable
21 Scenic Quality	hp	ma	favorable
ECONOMIC DEVELOPMENT			
DIRECT COSTS TO MANAGING AGENCY			
22 Acquisition Costs (1975 $)	$895000	0	$895000
23 Development Costs	0	0	0
24 Operations & Maint. Costs	$25000/yr	0	$25000/yr
ANNUAL FOREGONE OPPORTUNITIES			
25 Mineral Resources	780 ac-ft	480ac-ft	300 ac-ft
26 Forestry Resources	115 ac	105 ac	10 ac
27 Agricultural Resources	200 ac	195 ac	5 ac
28 Hydro-electric Power Capacity	2000 mw	2000 mw	0
REGIONAL DEVELOPMENT			
ANNUAL GROWTH INDICATORS			
29 Population Growth Rate	1.5%	1.5%	0
30 Housing Starts	190	190	0
31 Retail Sale Growth (1974 $)	$ 1 million	$ 1 million	0
32 Additional Employees	150	150	0
ANNUAL REAL PROPERTY TAX FOREGONE			
33 N. Canaan (am't/ % Grand Levy)	$ 900 / 0.1%	0	$ 900 / 0.1%
34 Canaan	$1700 / 0.4%	0	$1700 / 0.4%
35 Salisbury	$ 300 / 0.0%	0	$ 300 / 0.0%
36 Cornwall	$1500 / 0.2%	0	$1500 / 0.2%
37 Sharon	$1200 / 0.1%	0	$1200 / 0.1%
38 Kent	$6800 / 0.8%	0	$6800 / 0.8%
39 Sherman	$ 600 / 0.0%	0	$ 600 / 0.0%
40 New Milford	$3300 / 0.0%	0	$3300 / 0.0%
SOCIAL WELL-BEING			
RECREATION FACILITIES[2]			
41 Roadside Parks	5	5	0
42 Campgrounds (public)	3	3	0
43 Campgrounds (private)	6-	6	-
44 Canoe Livery (private)	3-	3	-
45 Trails (miles)	50 mi	50 mi	0
46 Stocked Fishing	11.5 mi	11.5 mi	0
47 Hunting Grounds	1336 ac	1336 ac	0
48 Tourist Railroad	30 mi	30 mi	0
49 Swimming Sites	0	0	0
RECREATION ACTIVITIES[3]			
50 Canoeing	moderate	high	favorable
51 Fishing	moderate	high	favorable
52 Hiking	moderate	high	favorable
53 Swimming	moderate	moderate	0
54 Pleasure Driving	moderate	moderate	0
55 Picnicking	moderate	high	favorable
56 Camping	moderate	high	favorable
57 Hunting	moderate	moderate	0
CULTURAL RESOURCES[1]			
58 Historic Sites	mp	mp	0
59 Archaeologic Sites		mp	

NOTE 1: hp - highly protective NOTE 2: "+" - more than NOTE 3: high - crowded conditions

policies to guide actions affecting historical and archaeological sites. All of these effects of the Wild and Scenic River Plan, are over and above existing conditions in the corridor and, therefore, yield a net benefit to the social well-being objective.

In general, the Wild and Scenic River Plan compares favorably to the Existing Trends Plan for the environmental quality and social well-being objectives, while having only a minimally negative impact on the economic and regional development objectives.

In comparison to the ECONOMIC DEVELOPMENT PLAN, the Wild and Scenic River Plan provides a considerably higher degree of environmental protection to the river corridor. Although the Economic Development Plan maintains the existing legal protections on the river corridor, the accelerated population growth assumed in this plan would lead to higher development densities and more active mineral and timber extraction which would adversely effect the environment. The Wild and Scenic River Plan, therefore, provides a relatively higher net benefit for environmental quality over the Economic Development Plan than it does over the Existing Trends Plan.

In terms of economic and regional development, the Wild and Scenic River Plan incurs a net cost over the Economic Development Plan for its acquisition/easement program, and for operation and maintenance of this plan. These costs to the towns, however, are relatively small in comparison to the town's Grand Tax Levy, as explained earlier. In terms of foregone costs are smaller under the Wild and Scenic River Plan than under the Economic Development Plan. This is attributed to the accelerated population growth and residential development under the Economic Development Plan which would cause more mineral, forest, and agricultural lands to be unavailable for economic development.

The social well being objective is favorably effected by the Wild and Scenic River Plan over the Economic Development Plan since recreation activities could be held at a moderate level, the expansion of recreational facilities could be properly controlled, and cultural resources would receive some additional protections. These management abilities of the Wild and Scenic River Plan are very important in this comparison because the accelerate population growth of the Economic Development Plan could lead to an excess of recreational facilities, crowded conditions, and negative impacts on historical and cultural resources.

In general, the Wild and Scenic River Plan provides a considerable net benefit over the Economic Development Plan for environmental quality and social-well being with only minimal negative impacts on economic and regional development.

In comparison to the ENVIRONMENTAL PROTECTION PLAN, the Wild and Scenic River Plan does not provide as high a level of protection to the river corridor, since the Environmental Protection Plan calls for stricter zoning ordinances and a more extensive acquisition/easement program. These protections, plus the coordination of the Environmental Protection

ENVIRONMENTAL QUALITY			
CORRIDOR PROTECTION			
1 Wild & Scenic River Miles	41	0	41
2 Wild and Scenic River Corridor	32000 ac	0	32000 ac
3 Streambelt Ordinance	4000 ac	0	4000 ac
4 Land Use & New Const. Ordin	15000 ac	0	15000 ac
5 Visual Character Ordinance	17000 ac	0	17000 ac
6 Inland Wetlands Protection	3900 ac	3900 ac	0
7 Flood Insurance Protection	6200 ac	6200 ac	0
8 State Owned Land	2500 ac	2500 ac	0
9 Land Trust Property	1400 ac	1400 ac	0
10 Low Density Zoning	32000 ac	25000 ac	7000 ac
11 Medium Density Zoning	0	6000 ac	-6000 ac
12 Potential Easement	500 ac	0	500 ac
13 Potential Acquisition	100 ac	0	100 ac
NATURAL PROCESS PROTECTION[1]			
14 Geologic Processes	mp	ma	favorable
15 Soil Stability	mp	ma	favorable
16 Water Quality	hp	mp	favorable
17 Vegetation Diversity	mp	ma	favorable
18 Fish & Wildlife Habitat	mp	ma	favorable
19 Rare & Endangered Species	hp	mp	favorable
20 Air Quality	mp	ma	favorable
21 Scenic Quality	hp	ma	favorable
ECONOMIC DEVELOPMENT			
DIRECT COSTS TO MANAGING AGENCY			
22 Acquisition Costs (1975 $)	$895000	0	$895000
23 Development Costs	0	0	0
24 Operations & Maint. Costs	$25000/yr	0	$25000/yr
ANNUAL FOREGONE OPPORTUNITIES			
25 Mineral Resources	780 ac-ft	780 ac-ft	0
26 Forestry Resources	115 ac	120 ac	-5 ac
27 Agricultural Resources	200 ac	210 ac	-10 ac
28 Hydro-electric Power Capacity	2000 mw	2000 mw	0
REGIONAL DEVELOPMENT			
ANNUAL GROWTH INDICATORS			
29 Population Growth Rate	1.5%	2.2%	-0.7%
30 Housing Starts	190	280	-90
31 Retail Sale Growth (1974 $)	$1 million	$1.5 million	$ -.5 million
32 Additional Employees	150	300	-150
ANNUAL REAL PROPERTY TAX FOREGONE			
33 N. Canaan (am't/ % Grand Levy)	$ 900 / 0.1%	0	$ 900 / 0.1%
34 Canaan	$1700 / 0.4%	0	$1700 / 0.4%
35 Salisbury	$ 300 / 0.0%	0	$ 300 / 0.0%
36 Cornwall	$1500 / 0.2%	0	$1500 / 0.2%
37 Sharon	$1200 / 0.1%	0	$1200 / 0.1%
38 Kent	$6800 / 0.8%	0	$6800 / 0.8%
39 Sherman	$ 600 / 0.0%	0	$ 600 / 0.0%
40 New Milford	$3300 / 0.0%	0	$3300 / 0.0%
SOCIAL WELL-BEING			
RECREATION FACILITIES[2]			
41 Roadside Parks	5	5	0
42 Campgrounds (public)	3	3	0
43 Campgrounds (private)	6-	6+	-
44 Canoe Livery (private)	3-	3+	-
45 Trails (miles)	50 mi	50 mi	0
46 Stocked Fishing	11.5 mi	11.5 mi	0
47 Hunting Grounds	1336 ac	1336 ac	0
48 Tourist Railroad	30 mi	30 mi	0
49 Swimming Sites	0	0	0
RECREATION ACTIVITIES[3]			
50 Canoeing	moderate	high	favorable
51 Fishing	moderate	high	favorable
52 Hiking	moderate	high	favorable
53 Swimming	moderate	high	favorable
54 Pleasure Driving	moderate	high	favorable
55 Picnicking	moderate	high	favorable
56 Camping	moderate	high	favorable
57 Hunting	moderate	moderate	0
CULTURAL RESOURCES[1]			
58 Historic Sites	mp	ma	favorable
59 Archaeologic Sites	mp	ma	favorable

NOTE 1: hp - highly protective NOTE 2: "+" - more than NOTE 3: high - crowded conditions

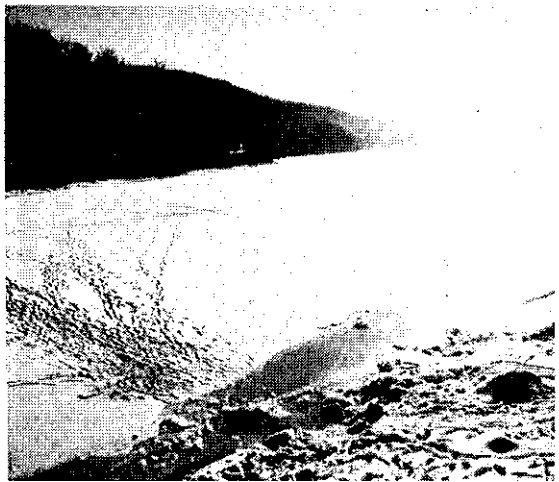
ENVIRONMENTAL QUALITY			
CORRIDOR PROTECTION			
1 Wild & Scenic River Miles	41	41	0
2 Wild and Scenic River Corridor	32000 ac	32000 ac	0
3 Streambelt Ordinance	4000 ac	4000 ac	0
4 Land Use & New Const. Ordin.	15000 ac	32000 ac	-17000 ac
5 Visual Character Ordinance	17000 ac	1000 ac	16000 ac
6 Inland Wetlands Protection	3900 ac	3900 ac	0
7 Flood Insurance Protection	6200 ac	6200 ac	0
8 State Owned Land	2500 ac	2500 ac	0
9 Land Trust Property	1400 ac	1400 ac	0
10 Low Density Zoning	32000 ac	32000 ac	0
11 Medium Density Zoning	0	0	0
12 Potential Easement	500 ac	2000 ac	-1500 ac
13 Potential Acquisition	100 ac	1000 ac	-900 ac
NATURAL PROCESS PROTECTION[1]			
14 Geologic Processes	mp	hp	unfavorable
15 Soil Stability	mp	hp	unfavorable
16 Water Quality	hp	hp	0
17 Vegetation Diversity	mp	hp	unfavorable
18 Fish & Wildlife Habitat	mp	hp	unfavorable
19 Rare & Endangered Species	hp	hp	0
20 Air Quality	mp	hp	unfavorable
21 Scenic Quality	hp	hp	0
ECONOMIC DEVELOPMENT			
DIRECT COSTS TO MANAGING AGENCY			
22 Acquisition Costs (1975 $)	$895000	$6,980,000	$-5,995,000
23 Development Costs	0	0	0
24 Operations & Maint. Costs	$25000/yr	$25000/yr	0
ANNUAL FOREGONE OPPORTUNITIES			
25 Mineral Resources	780 ac-ft	1980 ac-ft	-1200 ac-ft
26 Forestry Resources	115 ac	170 ac	-55 ac
27 Agricultural Resources	200 ac	215 ac	-15 ac
28 Hydro-electric Power Capacity	2000 mw	2000 mw	0
REGIONAL DEVELOPMENT			
ANNUAL GROWTH INDICATORS			
29 Population Growth Rate	1.5%	1.5%	0
30 Housing Starts	190	190	0
31 Retail Sale Growth (1974 $)	$ 1 million	$ 1 million	0
32 Additional Employees	150	150	0
ANNUAL REAL PROPERTY TAX FOREGONE			
33 N. Canaan (em't/ % Grand Levy)	$ 900 / 0.1%	$ 4500 / 0.5%	$- 3600 / -0.4%
34 Canaan	$1700 / 0.4%	$ 8500 / 2.1%	$- 6800 / -1.7%
35 Salisbury	$ 300 / 0.0%	$15100 / 1.0%	$-14100 / -1.0%
36 Cornwall	$1500 / 0.2%	$ 7400 / 1.3%	$- 5900 / -1.1%
37 Sharon	$1200 / 0.1%	$ 6000 / 0.6%	$- 4800 / -0.5%
38 Kent	$6800 / 0.8%	$34200 / 4.4%	$-27400 / -3.6%
39 Sherman	$ 600 / 0.0%	$ 3100 / 0.4%	$- 2500 / -0.4%
40 New Milford	$3300 / 0.0%	$19600 / 0.3%	$-16300 / -0.3%
SOCIAL WELL-BEING			
RECREATION FACILITIES[2]			
41 Roadside Parks	5	5	0
42 Campgrounds (public)	3	3	0
43 Campgrounds (private)	6-	6-	0
44 Canoe Livery (private)	3-	3-	0
45 Trails (miles)	50 mi	50 mi	0
46 Stocked Fishing	11.5 mi	11.5 mi	0
47 Hunting Grounds	1336 ac	1336 ac	0
48 Tourist Railroad	30 mi	30 mi	0
49 Swimming Sites	0	0	0
RECREATION ACTIVITIES[3]			
50 Canoeing	moderate	moderate	0
51 Fishing	moderate	moderate	0
52 Hiking	moderate	moderate	0
53 Swimming	moderate	moderate	0
54 Pleasure Driving	moderate	moderate	0
55 Picnicking	moderate	moderate	0
56 Camping	moderate	moderate	0
57 Hunting	moderate	moderate	0
CULTURAL RESOURCES[1]			
58 Historic Sites	mp	mp	0
59 Archaeologic Sites	mp	mp	0

NOTE 1: hp - highly protective NOTE 2: "+" - more than NOTE 3: high - crowded conditions

protection program, yield a high degree of protection of the natural processes of the valley. The Wild and Scenic River plan, therefore, has a net negative impact on environmental quality in comparison to the Environmental Protection Plan.

However, the Wild and Scenic River Plan does have a favorable net effect on the economic and regional development objectives. The Wild and Scenic River Plan's budget for the acquisition/easement program is nearly $6 million less than the Environmental Protection Plan, and likewise it has a substantially smaller impact on the Grand Levy of each town. Furthermore, the Wild and Scenic River Plan allows a greater amount of mineral, timber and agricultural resources to remain available for economic development.

The social well-being achieved by the Wild and Scenic River Plan is comparable to that of the Environmental Protection Plan. This is attributed to the recreation management program and protections for cultural resources included in both of these plans.



In general, the Wild and Scenic River Plan compares favorably with the Environmental Protection Plan for the economic development, regional development and social well-being objectives. However, it does fall short of the Environmental Protection Plan in meeting the environmental quality objective.

APPENDIX B

FISH AND WILDLIFE OF THE HOUSATONIC RIVER VALLEY

MAMMALS

Virginia Opossum (Didelphis marsupialis)
Common Mole (Scalopus aquaticus)
Hairy-Tailed Mole (Parascalops breweri)
Star-Nosed Mole (Condylura cristata)
Masked Shrew (Sorex cinereus)
Northern Water Shrew (Sorex palustris)
Shorttail Shrew (Blarina brevicauda)
Little Brown Bat (Myotis lucifugus)
Silver-Haired Bat (Lasionycteris noctivagans)
Eastern Pipistrelle (Pipistrellus subflavus)
Big Brown Bat (Eptesicus fuscus)
Red Bat (Lasiurus borealis)
Hoary Bat (Lasiurus cinereus)
Raccoon (Procyon lotor)
Shorttail Weasel (Mustela erminea)
Longtail Weasel (Mustela frenata)
Mink (Mustela vison)
Otter (Lutra canadensis)
Striped Skunk (Mephitis mephitis)
Red Fox (Vulpes fulva)
Gray Fox (Urocyon cinereoargenteus)
Bobcat (Lynx rufus)
Woodchuck (Marmota monax)
Eastern Chipmunk (Tamias striatus)
Red Squirrel (Tamiasciurus hudsonicus)
Eastern Gray Squirrel (Sciurus carolinensis)
Southern Flying Squirrel (Glaucomys volans)
Beaver (Castor canadensis)
White-Footed Mouse (Peromyscus leucopus)
Meadow Vole (Microtus pennsylvanicus)
Muskrat (Ondatra zibethicus)
House Mouse (Mus musculus)
Norway Rat (Rattus norvegicus)
Meadow Jumping Mouse (Zapus hudsonius)
Woodland Jumping Mouse (Nepaeozapus insignis)
Porcupine (Erethizon dorsatum)
Snowshoe Hare (Lepus americanus)
Cottontail (Sylvilagus floridanus)
New England Cottontail (Sylvilagus transitionalis)
White-Tailed Deer (Odocoileus virginianus)

BIRDS

Pied-Billed Grebe
Great Blue Heron "R"
Green Heron "X"
American Bittern "R"
Canada Goose "X"
Mallard "X"
Black Duck "X"
Blue-Winged Teal
Wood Duck "X"
Ring-Necked Duck
Common Goldeneye
Hooded Merganser
Common Merganser
Turkey Vulture "X"
Goshawk "X" & "R"
Sharp-Shinned Hawk "R"
Cooper's Hawk "R"
Red-Tailed Hawk "X"
Red-Shouldered Hawk "R"
Broad-Winged Hawk "X"
Marsh Hawk "R"
Osprey "R"
Peregrine Falcon "R"
Sparrow Hawk "X"
Ruffed Grouse "X"
Bobwhite "X"
Ring-Necked Pheasant "X"
Turkey
Virginia Rail "X"
Sora
Killdeer "X"
American Woodcock "X"
Common Snipe "X"
Spotted Sandpiper "X"
Pectoral Sandpiper
Rock Dove "X"
Mourning Dove "X"
Yellow-Billed Cuckoo "X"
Black-Billed Cuckoo "X"
Screech Owl "X"
Great Horned Owl "X"
Barred Owl "X"
Saw-Whet Owl
Whip-Poor-Will "X"
Common Nighthawk "X"
Chimney Swift "X"
Ruby-Throated Hummingbird "X"
Belted Kingfisher "X"

Red-Bellied Woodpecker "R"
Yellow-Bellied Sapsucker "R"
Hairy Woodpecker "X"
Downy Woodpecker "X"
Eastern Kingbird "X"
Great Crested Flycatcher "X"
Eastern Phoebe "X"
Alder Flycatcher "X" & "R"
Traill's Flycatcher "X"
Least Flycatcher "X"
Wood Eastern Pewee "X"
Olive-Sided Flycatcher
Horned Lark "R"
Tree Swallow "X"
Bank Swallow "X"
Rough-Winged Swallow "X"
Barn Swallow "X"
Cliff Swallow "X" & "R"
Purple Martin "X" & "R"
Blue Jay "X"
Common Crow "X"
Black-Capped Chickadee "X"
Tufted Titmouse "X"
White-Breasted Nuthatch "X"
Red-Breasted Nuthatch "X"
Brown Creeper "X"
House Wren "X"
Winter Wren "X"
Long-Billed Marsh Wren
Short-Billed Marsh Wren "X" & "R"
Mockingbird "X"
Catbird "X"
Brown Thrasher "X"
Robin "X"
Wood Thrush "X"
Hermit Thrush
Swainson's Thrush "R"
Gray-Cheeked Thrush
Veery "X"
Eastern Bluebird "X" & "R"
Blue-Gray Gnatcatcher "X"
Golden-Crowned Kinglet "R"
Ruby-Crowned Kinglet
Cedar Waxwing "X"
Starling "X"
White-Eyed Vireo "X"
Yellow-Throated Vireo "X"

BIRDS (continued)

Black-and-White Warbler "X"
Worm-Eating Warbler
Golden-Winged Warbler "X"
Blue-Winged Warbler "X"
Tennessee Warbler
Nashville Warbler
Parula Warbler "X" & "R"
Yellow Warbler "X"
Magnolia Warbler "X" & "R"
Cape May Warbler
Black-Throated Blue Warbler "X"
Myrtle Warbler "X" & "R"
Black-Throated Green Warbler "X"
Blackburnian Warbler "X"
Chestnut-Sided Warbler "X"
Bay-Breasted Warbler
Blackpoll Warbler
Pine Warbler "R"
Prairie Warbler "X"
Palm Warbler
Ovenbird "X"
Northern Waterthrush "X"
Louisiana Waterthrush "X"
Yellowthroat "X"
Yellow-Breasted Chat
Hooded Warbler
Wilson's Warbler
Canada Warbler "X"
American Redstart "X"
House Sparrow "X"
Bobolink "X"
Eastern Meadowlark "X"
Redwinged Blackbird "X"
Northern Oriole "X"

Common Grackle "X"
Brown-Headed Cowbird "X"
Scarlet Tanager "X"
Cardinal "X"
Rose-Breasted Grosbeak "X"
Indigo Bunting "X"
Dickcissel
Evening Grosbeak "R"
Purple Finch "X"
House Finch
Pine Grosbeak
Common Redpoll
Pine Siskin
American Goldfinch "X"
Red Crossbill
White-Winged Crossbill
Rufous-Sided Towhee "X"
Savannah Sparrow "R"
Vesper Sparrow "R"
Slate-Colored Junco "X"
Tree Sparrow
Chipping Sparrow "X"
Field Sparrow "X"
White-Crowned Sparrow
White-Throated Sparrow "X"
Fox Sparrow
Lincoln's Sparrow
Swamp Sparrow "X"
Song Sparrow "X"

"X" = breeding

"R" = Listed in "Rare & Endangered Species
of Connecticut and Their Habitats".

Spotted Newt (Red Eft) (Triturus viridescens)
Spotted Salamander (Ambystoma punctatum)
Mud Puppy (Necturus maculosus maculosus)
Four-toed Salamander (Hemidactylium scutatum)
American Toad (Bufo americana)
Tree Toad (Hyla versiclor)
Spring Peeper (H. crucifer)
Eastern Spadefoot Toad (Scaphiopus holbrookii)
Tree frog (Hyla hylidae)
Bull frog (Rana catesbiana)
Green frog (R. clanitans)
Pickerel frog (R. palustris)
Leopard frog (R. pipiens)
Wood frog (R. sylvatica)
Common Box Turtle (Chelydra carolina)
Common Snapping Turtle (C. serpentina)
Spotted Turtle (Chelopus guttatus)
Wood Turtle (C. insculplus)
Painted Turtle (Chrysemys picta)
Bog Turtle (Clemmys muhlenbergii)
Mud Turtle (Rinosterron subrubrum subrubrum)
Musk Turtle (Sternotherus oboratus)
Blanding's Turtle (Emys blandingi)

Puff Adder (Hog Nosed Snake) (Heterodon contortrix L.)
Milk Snake (Lampropeltis triangulum triangulum)
Black Snake (Coluber constrictor constrictor)
Ringnecked Snake (Diadopis punctatus edwardsii)
DeKay's Snake (Storeria dekayi)
Water Snake (Natrix sipedon sipedon)
Garter Snake (Thomnophis sirtalis sirtalis)
Smooth Green Snake (Liopeltis vernalis)
Copperhead (Agkistrodon mokasen)
Timber Rattlesnake (Crotalus horridus horridus)

Brook Trout (Salvelinos fontinalis)
Brown Trout (Salmo trutta)
Rainbow Trout (S. gairdneri)
Smallmouth Bass (Micropterus dolomieui)
Largemouth Bass (M. salmoides)
Pickerel (Esox neticulatus)
Northern Pike (E. lucius)
White Sucker (Costostomus Commersoni)
Creek Chub (Semotilus atromaculatus)
Fallfish (S. corporalis)
Sunfish (Bluegill) (Lepomis macrochirus)
Common Shiner (Notropis cornatus)
Longnose Dace (Rhinichthys cataractae)
Blacknose Dace (R. atratulus)
Tessellated Darter (Etheostoma olmstedi)
Carp (Cyprinus carpis)

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PARTICIPATING AGENCIES

This study was conducted through the combined efforts of the following Federal, State, and local organizations which provided information and guidance in their area of expertise. This list is here to simplify the coordination which will be required as efforts to preserve the Housatonic continue.

FEDERAL AGENCIES

Heritage Conservation and Recreation Service (formerly the Bureau of Outdoor Recreation)
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National Park Service
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CONNECTICUT STATE AGENCIES

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Institute
Washington, Connecticut 06793

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Connecticut Chapter of the
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Hartford, Connecticut 06106

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Pittsfield, Massachusetts 01201

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Boston, Massachusetts 12116

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Dutchess County Department
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Poughkeepsie, New York 12601

NY State Dept. of Environmental
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Dutchess County Planning
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Kayak and Canoe Club of
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c/o Theodore Stienway
Stienway Place
Long Island City, New York 11105

Trout Unlimited, Connecticut
Council
c/o E.F. Miller
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Northeast Utilities
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Hartford, Connecticut 06101

CORRESPONDENCE RECEIVED

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

February 23 1979

Honorable Cecil D. Andrus
Secretary of the Interior
Washington, D.C. 20240

Dear Mr. Secretary:

This is in reply to your November 14, 1978, letter requesting our views on your Department's proposed report on the Housatonic River in Connecticut.

We are pleased to see that the report recognizes the potential of agriculture and forestry in the alternatives analysis, including an analysis of the impacts of alternative plans on economic activities. The report would be improved if the economic impacts discussed were, insofar as possible, evaluated in economic terms rather than physical terms.

We agree with the study findings and conclusions that 41 miles of the Housatonic River meet the criteria for inclusion in the National Wild and Scenic Rivers System. Although we concur with your recommendation that protection of the river area should be accomplished through State and local initiative, it is not entirely clear in the report why this course of action is recommended rather than a Federal designation by the Congress. Through various cooperative programs in the Department of Agriculture, we will, if requested, continue to provide assistance to State and local agencies in conservation planning for the river area. 80

We appreciate the opportunity to offer our views on your proposed report.

Sincerely,

Bob Bergland
Secretary

DEPARTMENT OF THE ARMY
OFFICE OF THE UNDER SECRETARY
WASHINGTON, D.C. 20310

27 DEC 1978

Honorable Cecil D. Andrus
Secretary of the Interior
Washington, D.C. 20240

Dear Mr. Secretary:

This letter constitutes comments of the Department of the Army on your proposed report on inclusion of the Housatonic River, Connecticut in the Wild and Scenic Rivers System.

The report provides adequate knowledge and insight into previous water resource development studies in Housatonic River Basin. There are no conflicts between the report's findings and recommendations with
81 any prevailing authority of the U. S. Army Corps of Engineers.

We appreciate the opportunity afforded us to review and comment on your proposed report.

Sincerely,

Michael Blumenfeld
Deputy Under Secretary

Department of Energy
Washington, D.C. 20461

FEB 5 1979

Honorable Cecil D. Andrus
Secretary of the Interior
Washington, D.C. 20240

Dear Mr. Secretary:

This is in response to your request of November 14 for comments on the draft report, The Housatonic in Connecticut, A Wild and Scenic River Study. It reflects both our favorable response to the descriptive material and our concern that river classifications should receive careful review where their application may relate to development of power generation facilities. This consideration is particularly notable in the subject area, New England, which is heavily dependent upon imported energy.

Thank you for giving us the opportunity to comment on the Housatonic Study.

82

Sincerely,

George S. McIsaac
Assistant Secretary
Resource Applications

Enclosure:
Comments on "The Housatonic in Connecticut, A Wild and Scenic River Study, "Draft Rpt, August 1978.

(1) The 41-mile section of the Housatonic River eligible for inclusion in Natural Wild and Scenic River System (NWSRS) includes a scenic region and two recreational regions above and below the scenic section (Map 3). These latter two regions include small (120-150 acre) reservoirs formed by hydro power dams. A 2-3 foot mud bank is exposed along the stream bank in the pools above the dams (p. 38). The Bulls Bridge dam has also "altered the natural flow of the river through a spectacular rock gorge", and the Falls Village Dam "has altered the natural flow of the river over Great Falls". Considering these disturbances to the river as a result of hydroelectric generating facilities, the inclusion of these two regions of the river in the NWSRS is questionable, even though they have been classified as 'recreation' and not scenic.

83

(2) It is stated that dam operations "do not seriously limit canoeing or fishing activities" (p. 36) and the conclusion is reached that there is sufficient volume for water-related recreation. The validity of this conclusion is questionable because the canoeing potential is limited to 4-5 hours per day in the summer. That is, it is dependent upon releases from the dams from late morning to early afternoon. Apparently, canoeing during other times of the day in the summer is limited due to low river flows. Also, the statement that the average monthly discharge exceeds the minimum flow (700 cfs) required for canoeing is based on 1-year of data (October 1974-September 1975) (Table 8). No consideration is given to historical river flows and no indication is given concerning whether or not the 1974-75 flow data represented a year of average flow. The

significance of these concerns is related to the fact that sufficient volume for water related recreation is one of several criteria used to determine eligibility in the NWSRS (p. 35).

(3) Quantitative data on water quality should be presented to support the general statements that agriculturally-related problems such as erosion and sedimentation have increased in recent years (several other perturbations are described on p. 12). The reader is left with no concept of the present condition or quality of the river.

(4) In 1976, the river had a class D water quality designation which will be upgraded to class B by 1979. The present classification ("D") is due to PCBs in fish. Again, no quantitative data on the concentrations in fish is given. The PCB source is not identified and no indication is given as to whether these chemicals are still being discharged to the river. Finally, and most importantly, the plan to achieve the class "B" designation by 1979 is not given. How will the problem of PCB levels in fish be resolved when these compounds are so persistent in the environment long after discharges have been terminated?

(5) With so much agricultural land along the river, non-point source pollution may be a problem. This topic was not addressed in the report.

(6) Is the existence of a scenic tourist railroad excursion (the railroad already exists along the valley) through the Housatonic River Valley (which has been proposed by the State of Connecticut) incompatible with one of the objectives of the NWSRS, namely the protection of the river and its immediate environment?

(7) More quantitative data should be given on the three areas along the river that have been designated as critical habitats by the State, such as acreages, specific locations, and detailed information on the flora and fauna in these habitats. Similarly, the eight critical areas (definition?) listed on pp. 19-20 should be drawn on a map of the valley.

(8) A map should be presented to show the location (with boundaries), the acreage, and/or ecological characteristics of the 6000 acres owned by the State and managed for wildlife (all wildlife?). Similarly, there is no detailed information given on the location and size of the preserves and sanctuaries along the river.

(9) Apparently, not all the species listed as rare or endangered are listed as such by the State. The term 'rare' is not defined with regard
85 to its official state or Federal status. Instead, statements such as "some characteristic rare species" or "some rather rare species" are presented. These are confusing terms, since no documentation of their status is given.

(10) Quantitative data on use of the valley for hunting and fishing is not included. If information such as creel censuses and deer harvest for counties along the river is available, it should be included.

(11) Common names of species listed as rare are used. For example, the deer mouse (presumably Peromyscus) is listed when, in fact, there are many species of deer mice, one of the most common and ubiquitous of which is the white-footed deer mouse (Peromyscus maniculatus). Also, note spelling of ruffed grouse on p. 18 as ruffled grouse.

(12) The trout fishery should be placed in perspective - it is maintained by a stocking program. I would assume that carry-over from one year to the next is minimal even though it is stated that natural reproduction occurs. The statements in the report are probably misleading in this respect. The "excellent" growth (referred to in the report as carry-over rates of 3-6") must be considered cautiously if only a small fraction of the fish stocked each year actually survive to the following year.

(13) Generally, the report lacks sufficient quantitative ecological data for an accurate picture of its ecological value or uniqueness to be assessed. The area apparently is rich in both historical and archaeological resources. Ecological resources, however, cannot be evaluated given the level of information presented in the text. Much more data on water quality, recreational activities such as fishing and hunting, and the ecological characteristics of the valley must exist and should be incorporated into the study.

86

(14) In this report, a land use map of the valley would be more meaningful than the information given in Table 3 (p. 22). Classifications such as 'agriculture forestlands' or'woodlands and open space' (p. 22) are of questionable value.

(15) All the photographs in the text should be labeled with regard to location.

(16) The relationship of other laws and management programs to the Housatonic basin is the strongest part of the report.

(17) In light of the many developments in the valley (towns, roads, bridges, etc.), a stronger case should be made as to how the stream

segment qualifies as a scenic/recreational segment. How does the number of artificial features along the stream compare with other segments in the Wild and Scenic River System - are there other streams which are as developed or more developed than the Housatonic segment?

(18) The completion of Route 7, along the Housatonic, sounds like a dead issue in this report - how certain is that? Is there much of a danger that the highway could be enlarged while the Housatonic is being considered for inclusion in the Wild and Scenic River System? This seems like an important issue.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, D.C. 20410

14 DEC 1978

OFFICE OF THE ASSISTANT SECRETARY
FOR COMMUNITY PLANNING AND DEVELOPMENT

IN REPLY REFER TO:

Honorable Cecil D. Andrus
Secretary of the Interior
Washington, D.C. 20240

Dear Mr. Secretary:

Your letter to Secretary Harris of November 14, 1978, requesting review and comment on the draft report on the Housatonic River in Connecticut, in accordance with the provisions of the Wild and Scenic Rivers Act, has been referred to our Boston Regional Office for response.

The Regional Administrator is cognizant of the river study area and the Department's programs relating thereto. If there are substantial concerns in reference to the Department's programs in the area or the findings and recommendations of the study report, you will be advised by the Regional Administrator, Mr. Edward T. Martin. He will, therefore, provide the Department's views which are to accompany the report to the President.

88

We appreciate the opportunity to review and comment on the proposal.

Sincerely,

Yvonne S. Perry
Deputy Assistant Secretary for
Interprogram and Areawide Concerns

cc: Guy R. Martin

IN REPLY REFER TO:
Trust Services
Wildlife & Parks
459

DEC 7 1978

Memorandum

To: Director, National Park Service
Attention: Mr. Robert Eastman

From: Acting Director, Office of Trust Responsibilities
David C. Hanson

Subject: Review of August 1978 Draft Report, The Housatonic Wild and Scenic River Study (Connecticut)

We have received a copy of your November 14 letter to the Administrator, Environmental Protection Agency, which transmitted the subject document and requested comments within 45 days.

89 During our review of the subject report we noted that you have included the Schagticoke (Scaticook) State Indian Reservation as a "critical cultural area" in the State of Connecticut. Although this Reservation has never received Bureau of Indian Affairs' services, we are interested in the results of the Tribe's claim to an additional 1,600 acres of land adjacent to their existing 450 acre reservation.

Thank you for providing us with a copy of the subject study.

United States Department of the Interior

IN REPLY REFER TO:

BUREAU OF MINES
2401 E STREET, NW.
WASHINGTON, D.C. 20241

December 20, 1978

Memorandum

To: Robert L. Eastman, Outdoor Recreation Planner,
National Park Service

From: Chief, Office Environmental Coordination

Subject: The Housatonic in Connecticut, A Wild and Scenic River Study

Our Eastern Field Operations Center, Pittsburgh, comments on the preliminary draft of January 1978 have been incorporated on page 25 of this draft. We have no further comments.

W. L. Dare

ADDRESS ONLY THE DIRECTOR,
FISH AND WILDLIFE SERVICE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240

In Reply Refer To:
FWS/ES

JAN 26 1979

Memorandum

To: Director, National Park Service

From: Associate Director, Fish and Wildlife Service

Subject: Housatonic River (Connecticut) Wild and Scenic River Study--Comments on Department's Draft Report

In response to Secretary Andrus' letter of November 14, 1978, we offer the following comments on the subject report.

1. Findings and Recommendations, pages 2-4. In the paragraphs of this section devoted almost exclusively to findings of the study are occasional sentences which in effect serve as recommendations. These sentences are somewhat buried among the findings. We suggest some reorganization of the section by clearly listing the recommendations separately from the findings. We believe there should also be discussion in the report text concerning the reasoning which led to the apparent recommendations, as well as a brief summary of that reasoning in the Summary section. Especially important is inclusion of the reasons for the proposed administrative option (local or local/State) for the river.

91

2. Wildlife, page 18. The first paragraph under this heading could be improved somewhat by adding a new final sentence in substance as follows: "Other species, mainly among the small mammals, songbirds, and raptors, also inhabit the area." Specific listing of the thrush, woodpecker, mourning dove, meadowlark, and sparrow could be omitted.

3. Fisheries, pages 18-19. The discussion of the trout stocking program on these pages should be corrected slightly

by stating that the growth rate of carryover trout is about three to six inches per year and that the carryover rate is about 10 percent.

4. Recreation, page 31. The discussion of hunting in the first (full) paragraph leaves the impression that hunting is allowed only in the three named State forests. Actually, deer hunting is permitted in all the State forests, and hunting of small game and waterfowl is allowed anywhere such activity is not in conflict with local or State laws.

5. Miscellaneous Comments. The Shepaug River, which is included in the legal description of the study area boundaries, is identified on only one of the report maps (Map 6, page 9). The reader would be assisted in locating that river by including it on other report maps also, or at least on one additional map--No. 2, page 1. This is the first study area-labeled map encountered in the report.

You may wish to include in the Appendix, with a cross reference thereto in the text under the Wildlife and Fisheries headings, the list of mammals, birds and fish occurring in the Housatonic River study area which we provided. This would give the reader a better knowledge of fish and wildlife species inhabiting the study area.

We appreciate the opportunity for commenting on the draft report.

United States Department of the Interior

GEOLOGICAL SURVEY
RESTON, VIRGINIA 22092

In Reply Refer To:
EGS-Mail Stop 441

December 27, 1978

Memorandum

To: Robert Eastman, National Park Service

From: Thomas J. Buchanan, Geological Survey

Subject: The Housatonic in Connecticut...A Wild and Scenic River Report

The subject draft report has been reviewed by personnel in our Connecticut District Office, and our reviewer's comments are enclosed.

Thank you for giving us an opportunity to review this report.

for Thomas J. Buchanan

93

Enclosure

TO : Assistant Chief Hydrologist
for Operations, WRD, Reston, VA

DATE: Dec. 19, 1978

FROM : Michael A. Cervione, WRD,
Hartford, CT

SUBJECT: PUBLICATIONS.--The Housatonic in Connecticut - A Wild and Scenic River Report

I have reviewed the subject report, giving emphasis to the Hydrology section, and found it to be in very good shape.

I found several errors in the Hydrology section when I reviewed the initial draft in January. They have all been corrected in this draft.

One item that was OK in the initial draft has been typed incorrectly in this version. In the third paragraph on page eleven, the mean annual flood figure should be 6,600 cfs, not 660 cfs.

Michael A. Cervione

Michael A. Cervione
Hydrologist

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I

J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203

Honorable Cecil D. Andrus
Secretary
United States Department
of the Interior
Washington, D.C. 20240

Dear Mr. Andrus:

We have reviewed the report, The Housatonic in Connecticut: A Wild and Scenic River Study, under the Wild and Scenic Rivers Act, and support implementation of the findings and recommendations.

95 We are pleased that the Housatonic towns have already formed a Housatonic River Commission to develop a specific management plan for implementing the recommendations.

Since efforts are underway to solve the PCB problem, the discovery of PCB's in fish should not deter any request by the State for inclusion in the National Wild and Scenic Rivers System.

It has been our pleasure to serve on the Housatonic Wild and Scenic River Study.

Sincerely,

William R. Adams, Jr.
Regional Administrator

Status of PCB Problem in the Housatonic River
For Wild and Scenic River Study

The existing water quality classification of the Housatonic River was downgraded from Class B to D when it was discovered that PCB concentrations in Housatonic fish exceeded limits set by the United States Food and Drug Administration. In 1977, the Connecticut Department of Health placed a health advisory against eating fish from the Housatonic.

Although the State of Connecticut Water Quality Standards Classification (September 1977) lists the anticipated conditions of the Housatonic as Bsb by November 1979, the PCB problem in the Housatonic will not actually be solved by that time.

A special act of the Connecticut Legislature (78-50) appropriated an initial $200,000 by the Department of Environmental Protection for planning to solve the PCB problem in the Housatonic. This allocation was in response to strong interest in restoring water quality in the Housatonic. A portion of the initial effort will be to determine the health effects of PCB's. The Health Department will examine the bio-chemical effects of PCB's on persons who have ingested PCB-contaminated fish.

Discharges of PCB's from the General Electric plant site upstream in Pittsfield, Massachusetts have been virtually eliminated and cleanup operations are underway under the NPDES permit schedule. After April 1, 1979 the permit will limit levels to 10 parts per billion. Connecticut is evaluating potential problems from, and seeking solutions to, residual PCB's in landfills, sediments and other sources.

Since efforts are underway to solve this specific problem, it should in no way detract from designation under the Wild and Scenic Rivers Act.

FEDERAL ENERGY REGULATORY COMMISSION
NEW YORK REGIONAL OFFICE
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10007

January 29, 1979

Mr. Jack E. Stark
Regional Director
North Atlantic Region
National Park Service
15 State Street
Boston, MA 02109

Re: Review of the Housatonic River
Wild and Scenic River Draft
Study Report

Dear Mr. Stark:

In response to your correspondence of December 6, 1978, we appreciate the opportunity of reviewing and commenting on the Housatonic Wild and Scenic River Draft Study Report. Our comments follow: 97

There are existing river crossings of electric transmission lines within the designated study area that should be detailed. These include extra high voltage (EHV) lines. Transmission towers associated with these lines may have an aesthetic bearing on the "wilderness" characteristic of river segments and impinge on the scenic vista. In addition, transmission lines presently under construction or currently proposed may have direct bearing on the study area proposal. It is suggested that electric utilities in the Housatonic area be consulted so that exact or proposed transmission routing can be determined. Enclosed for your information is the latest schematic map from FERC Form 12F 1978 for the Northeast Utilities system which serves the study area. In addition, there are two major natural gas pipelines (not indicated on that map) owned by Algonquin Gas Transmission Company and Tennessee Gas Pipeline Company that traverse the study area.

Page 4 (last paragraph) - There is a basic question as to whether the river reach, situated between Falls Mountain Road and the Massachusetts - Connecticut boundary, should be incorporated into the National Wild and Scenic River system. According to the study report, Falls Village dam, located in this river segment, impounds a reservoir 5 miles long. The total length

appears to violate, a U.S. Department of the Interior criteria for recreational river classification which states that the water should not have characteristics of an impoundment for any significant distance.

Page 10 (3rd Paragraph) - Spelling error: Gaylordsvills should be Gaylordsville.

Page 11 (1st paragraph) - The study report states that flows in the eligible study reach are not directly influenced by the daily operations of the Falls Village and Bulls Bridge hydropower plants. According to U.S. Geological Survey Water Supply Paper No. 2101, however, upstream powerplants do affect the flows in the study area (i.e., Falls Village and Gaylordsville stream gaging stations).

Page 27 (section on hydropower production) - An important consideration in this "wild and scenic river" classification process is the fact that the proposed areas encompass two existing hydroelectric developments, Falls Village (9000 kW) and Bulls Bridge (8400 kW). There is no specific mention in the study report as to provisions for minimizing the aesthetic impact of certain features of these developments (i.e., transmission lines, powerhouse). 98

Page 28 (last paragraph) - Although there are currently no plans for further hydropower development in the eligible stream reach, certain potential hydroelectric project sites have been identified (71,500 kW combined capacity). At the time of their identification in the NENYIAC study, these sites were considered to be economically infeasible. It should, however, be noted that the power values used in determining project benefits were predicated on the cost of the cheapest alternative source of power, privately financed steam generation. Today, such power generation would most likely rely on the use of high-cost fossil fuel, thereby possibly making proposed hydropower projects more economically desirable in comparison. An additional factor favoring such development would be the improved hydroelectric technology now available (i.e., packaged plants). We suggest that the last sentence be changed to read:

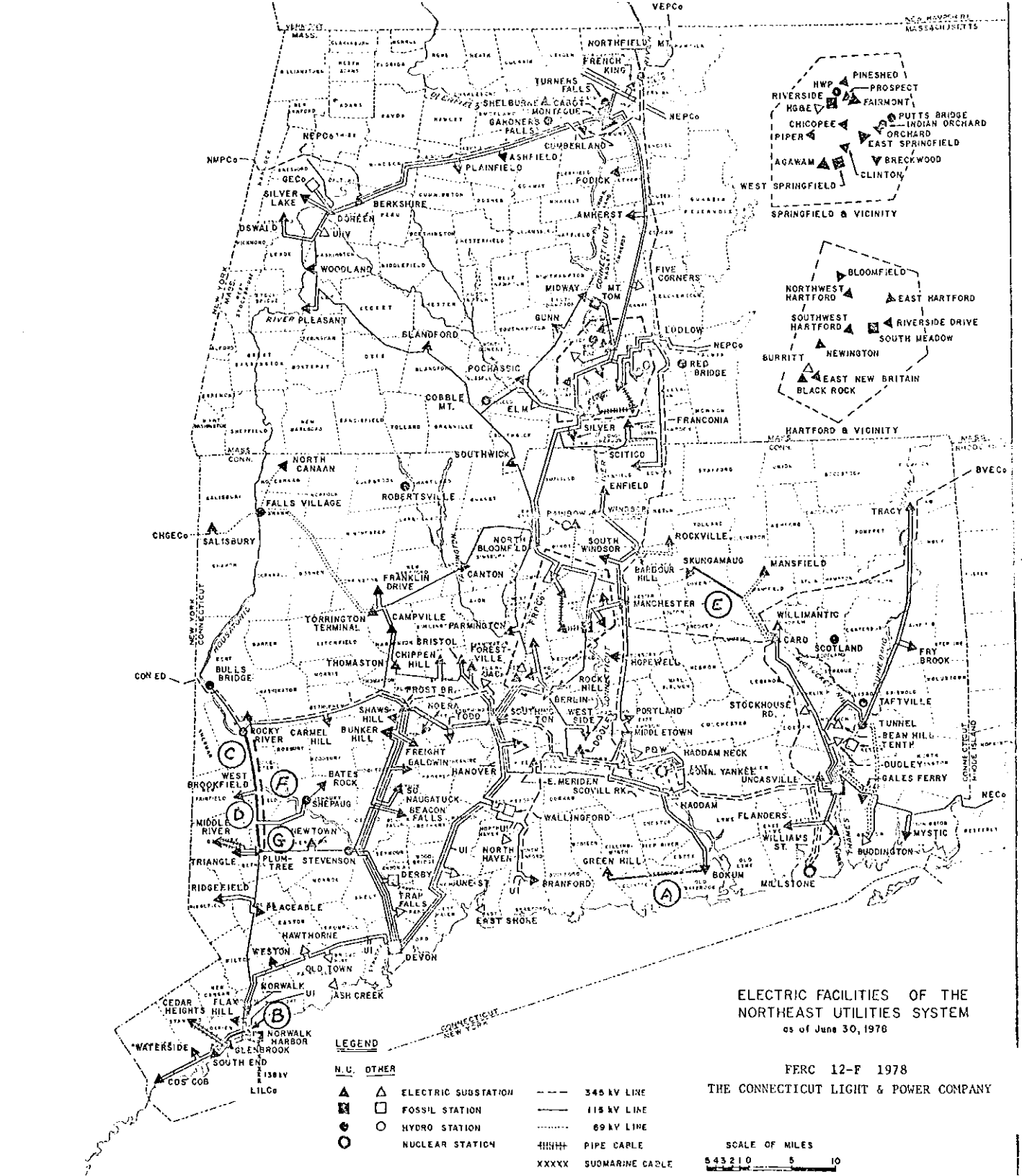
> "In summary, the current records of the FERC do not indicate any new applications for development of conventional or pumped storage hydroelectric facilities on the study segment of the river".

Page 39 (4th paragraph) - The study report states that technical assistance will be available from the Bureau of Outdoor Recreation (now reorganized as the Heritage Conservation and Recreation Service). In as much as the responsibility of conducting "Wild and Scenic River Studies now lies with the U.S. Park Service, the text should indicate this latter organization.

Sincerely,

James D. Hebson

James D. Hebson
Regional Engineer



ELECTRIC FACILITIES OF THE
NORTHEAST UTILITIES SYSTEM
as of June 30, 1978

FERC 12-F 1978
THE CONNECTICUT LIGHT & POWER COMPANY

100

ELLA GRASSO
GOVERNOR

STATE OF CONNECTICUT
EXECUTIVE CHAMBERS
HARTFORD

December 13, 1978

Honorable Cecil D. Andrus
Secretary
Department of the Interior
Interior Building
Washington, D.C. 20240

Dear Mr. Secretary:

101 Thank you for sending me a copy of the draft report on the study of the Housatonic River in Connecticut as a potential unit of the National Wild and Scenic Rivers System.

I have forwarded the material to Commissioner Stanley J. Pac of the Department of Environmental Protection for his review and consideration.

Your courtesy is appreciated.

With best wishes,

Cordially,

Ella Grasso
ELLA GRASSO
Governor

HOUSATONIC VALLEY ASSOCIATION, INC.

Route 7, Kent, Connecticut 06757 Telephone 203-927-4088

West Cornwall, Connecticut 06796 Telephone 203-672-6044

January 25, 1979

U. S. Dept. of the Interior
National Park Service
North Atlantic Region
15 State Street
Boston, MA 02109
ATTN: Mr. J. E. Stark, Regional Director

RE: A study entitled "The Housatonic in Connecticut, a Wild and Scenic River Study," U.S. Dept. of Interior: National Park Service Draft Report August 1978

Gentlemen:

We have reviewed the subject draft and consider it an excellent piece of work - well organized and well presented, comprehensive and easy to understand. 102

With regard to the recommendations in the top paragraph of page 4, we believe that primary responsibility for implementing any management plan should be delegated to town governments.

We recommend that the first sentence of the second column on page 28 of the draft be deleted. This sentence, which reads, "However, this is unlikely to be considered for development due to several reasons related to costs, practicality, and political feasibility," should be deleted for the following reasons:

1. The statement is misleading; such development has at various times been very seriously considered.
2. The statement is now irrelevant; through the recent conveyance of a 30-year conservation easement to the Housatonic Valley Association by The Stanley Works, the development of a hydro plant is impossible within the foreseeable future.

We suggest that the following brief statement be substituted for the deleted sentence in the final report on the river:

> "A study completed in 1977 by Chas. T. Main, Inc. for The Stanley Works, owner of flowage rights and river frontage beginning at Kent Furnace and extending upstream approximately 5 miles to Swift's Bridge in Sharon-Cornwall, indicated that an 800 megawatt pumped storage installation at Kent was economically feasible. However, the possibility of such installation becoming a reality has been eliminated for the foreseeable future through a 30-year conservation easement conveyed to the Housatonic Valley

On page 33, the Housatonic Valley Association might be added to the conservation organizations named in the first paragraph, as ours is the only organization specifically devoted by its charter and by-laws to protecting and preserving the natural resources and beauties of the Housatonic watershed in its entirety.

The Housatonic Valley Association might also be named in the first paragraph of page 40 as an information source. We have already provided a great deal of information on the river in connection with your Wild and Scenic River study.

On page 71, please use the above address for our Association.

Once again, congratulations on an excellent report.

Sincerely,

John L. Kuhn
President

JLK:kch

NERBC
53 STATE STREET • BOSTON, MASSACHUSETTS 02109
PHONE (617) 223-6244

January 31, 1978

Mr. Robert Schenck
Department of the Interior
Heritage Conservation & Recreation Service
600 Arch Street
Philadelphia, Penn. 19106

Dear Bob:

With regard to our telephone conversation yesterday, I am transmitting my comments on the draft wild and scenic river study, The Housatonic in Connecticut. In general, I found the report to be clearly written and well presented. There are a few areas, however, in which I would like to offer suggested changes or additions.

First, I have attached copies of several pages for which I would recommend specific changes in the geologic or hydrologic terminology. "Precambrian" and "Cambrian" are the proper geologic eras; "gneiss" and "quartizite" are the proper rock types. Other small technical changes are indicated on the attached sheets.

104

Secondly, I have comments of a more general nature which I discussed over the phone with you yesterday, and which I hope could be considered as you redraft the report. There are three general areas of concern.

Most important, perhaps, is the need for greater emphasis on the impact of activities outside the study area on the segment of the Housatonic under consideration in the report. Even though the Massachusetts portion of the Housatonic was not designated for study as a potentially wild and scenic river, any actions taking place upstream in the basin will inevitably affect the Housatonic in Connecticut. The same is true, of course, with regard to the Housatonic's tributaries in New York and in Connecticut itself. I am thinking here not only of the obvious water quality problems resulting from PCBs and other contaminants, but also of other aspects of upstream activities such as alterations in stream flow from potential hydropower or industrial facilities in Massachusetts, increased sediment load from upstream erosion, or increased flood heights from the loss of upstream natural valley storage. Thus, greater emphasis should be placed on these issues, and the report's management guidelines to Connecticut communities should include recommendations for increased coordination with agencies and com-

Next, it might be appropriate for the section on hydrology to contain a reference to the potential use of the Housatonic as a source of water supply for Connecticut. In its Summary Report of the Northeastern United States Water Supply (NEWS) Study (July 1977), the U.S. Army Corps of Engineers discusses the potential for developing 100 million gallons of water supplies per day from the river's existing power impoundments, should Connecticut change its policy of developing supplies only from those sources which do not receive treated wastes.

Finally, more detailed information should be developed in the report concerning the causes of water quality degradation, such as lake eutrophication and PCB contamination (p. 12) and to measures presently being undertaken to resolve these problems. Such a discussion, requiring a few sentences at most, would lend credibility to the statement that "...by November 1979, the anticipated classification for the river...is Bsb..." (p. 12).

Many thanks for the opportunity to comment on this study. As the report notes, NERBC plans to develop a Housatonic Basin Overview in the near future, and the findings of this effort will be of great use to us. I hope that local communities in the study area will continue to pursue a wild and scenic classification for the Housatonic as it offers a truly unique and valuable resource for the people of New England.

105

Sincerely yours,

Jane F. Carlson

Jane Fisher Carlson
Senior Planner

JFC:js
Enclosures

ESTABLISHED 1924

TELEPHONE ~~ELgin~~ 4-4720
AREA 203

Herbert E. Crawford & Son

Architectural Service • Building Contractor

NEW MILFORD, CONNECTICUT

Jan. 26, 1979

U.S. Dept. of the Interior
North Atlantic Region
15 state street
Boston Mass.

Ref.* Reply to Housatonic River Study Report.

Gentlemen:

The Housatonic river study booklet you sent me made very interesting reading and shed new light on the enviorn-mental problems which confront all concerned people try-ing to improve the quality of life in the river valley from Pittsfield, Mass. to New Milford, Conn.

106

My first big question is why the report limited its scope to an area north of the Boardman bridge and did not include all area at least as far south as the confluence of the Shepaug and Housatonic rivers, or all the way down to Long Island sound? I see no point in trying to improve water quality in only one section of the river. Fish and aquatic life travel the entire length of the river and its tributaries and are directly effected by all its pollution sources, and recreat-ional, or industrial uses.

According to the best documented sources that I have seen, the (P.C.B.) chemical pollution in the sediment of the northern sections of the river will not disapate through any natural process for at least 40 years, and maybe never, since this chemical seems to reproduce itself through the life cycle of all effected species, and is still finding its way into the river from the General Electric dumping area in Pittsfield.

ESTABLISHED 1924

TELEPHONE ELgin 4-4720
AREA 203

Herbert E. Crawford & Son

Architectural Service • Building Contractor

NEW MILFORD, CONNECTICUT

Jan. 26, 1979

U.S. Dept. of the Interior (cont.)

Using present technology the only way to rid the river bottom of this chemical pollution would be to dredge all the silt from its bed and deposit it far away from the river valley, in a safe place, and remove all the fish from an area from the Stevenson Dam all the way up to Pittsfield. This would be a vast undertaking which would have to be per-formed by the Army Engineers and private contractors. An operation of this sort would have several long term ben-ifits for this area, but I know of no plan presently under consideration by any level of government, to proceed with
107 this project.

Until this (P.C.B.) problem is solved and all municiple sewer plant and industrial plant waste lines are completely re-moved from the river basin it would seem rather foolish to proceed with your plan to designate one half of this river as wild and scenic.

I would like to make one important point which is missing from your report. This river, if completely cleaned up by the method outlined above, could become a good supplementary food source in the future as it was in the past for the Indian cultures.

I stand ready to help anyone who can generate the momentum to get this real river clean up plan into operation and out of talking stage. Legislation already exists to stop all parties from discharging large volumns of pollution into any water shed area, if someone only has the guts to crack the whip.

Respectfully yours,

Hon. Jack E. Stark, Regional Director
National Park Service, North Atlantic Region
Department of Interior
15 State Street, Boston 02109

Dear Mr. Regional Director:

(Re: Housatonic River Wild and Scenic River Study)

Although during the study period I submitted both personal testimony and submitted material a number of times in behalf of Candlewood Lake Defense Associates, please regard my comments at this time as personal.

This is because our interest as an organization has been primarily with the lower part of the river not included in the proposal; because the issues in which we are involved are not yet fully resolved before the FERC and EPA and may require our further activity and statements of position; and because, since the issues of Wild and Scenic are now managerial, I believe formal organizational positions are best left primarily to those organizations based in the actual river towns physically.

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My personal position is much in favor of completion of steps needed to win the Wild and Scenic status. I hope that you will see to it that every possible time allowance and time extension required for the towns and legislature to act will be given. With eight towns involved, and legitimate difficulties of procedure in sight in order to fashion a workable legal status, things simply don't move fast--surely not as fast as when issues are simpler and fewer entities must act. 108

The study as published is admirable. Not only does it coordinate vast research in a highly competent manner, it strikes out on its own in well-balanced, creative style, and reflects the devotion and affection for the river by those who conducted it. The study is in itself a handbook and a textbook that I hope will find its way into many a classroom in Western Connecticut.

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I'd like to comment on two matters in the rest of this letter: 1) Lovers Leap, 2) Explanation of resistance to a river ordinance by some elements, and the misunderstandings upon which such resistance is based.

LOVERS LEAP

I have not yet seen, either in the study itself or in proposals now pending at FERC, anything that deals with Lovers Leap satisfactorily. The present maintenance, or lack of it, is deplorable. I walked the unimproved road from the old landmark iron bridge last summer. The precipitous side facing the river was littered with papers and beer cans and bottles and other appropriate debris left by those who take the name of the site literally, wherever a blanket could be spread.

It is unrealistic to expect the state to maintain this site properly. It is in no sense of the word a recreation spot in the usual sense. State funds are limited, and the maintenance problems and deficiencies at heavily used state parks are great

reverence.

Physically, it is very dangerous and quite tiny. The unimproved road has no winter maintenance. January 14, 1979, a car descending in low gear at 10 mph went out of control on the ice. The driver escaped, but the car careened through the trees, down the steep bank, and plunged through the ice of the river.

Any attempt to make a picnic area along those banks will inevitably lead to deaths, especially of children. The promontory part is very small, and very spectacular. The half-polished tannish marble-appearing rocks at the edge are sheer beauty. The long views between mountains, and at the Y-shaped waters below are unforgettable and wild.

I think the right way to handle Lovers Leap is as follows:

1.) Accord it, and the iron landmark old bridge (now closed to traffic) National Monument Status.

2.) Assign a National Park Service Ranger to duty, at least from Memorial Day to the third week of October.

3.) Limit vehicular traffic to those who require it for access.

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4.) Since tourists and other visitors come in limited numbers, they can find their own parking places along the road outside the monument in the general traffic area.

5.) Have vistors sign a registry book, provide them with a brochure, bar picknicking, urge them to see, admire, and leave. Avoid such publicity that would attract large numbers.

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CAUSES OF RESISTANCE TO A RIVER ORDINANCE

Probably most times where a wild and scenic river issue has existed, there were only two camps--those who favored it, and development interests which opposed. In the Housatonic River situation, there is a third element. It is a grouping which favors protection of the river, but is so mortally fearful that a river ordinance would bring federal or state interference with local zoning that places (incorrectly) the matter of local autonomy over river protection.

In my opinion, this is a false issue, but easily understandable. Our towns have been the object, for years, of some of the most unprincipled outside assaults any towns have had to withstand. Intertwined have been activities of developers, of a couple of federal agencies, of Tri-State Regional Planning Agency, and of the DEP of Connecticut that have been incessant.

Especially noteworthy was the totally false, provocative assault of March-April, 1972, instigated by the then Philadelphia BOR, under the authorship of Earl Nichols, under the leadership of Roland Handley. The memory of that period simply will not erase

position held by the local towns and citizens have been upheld, albeit at great cost and disturbance of tranquility.

This has taken its toll, however, in fear and suspicion, even when unwarranted. There has grown an illusion, for instance, that towns have full local control of the river right now, whereas in fact they do not, and never have.

I studied your Wild and Scenic report especially in this regard. I sincerely feel that the study team has been very careful to stress the advisory nature of all their proposals. I think they took care at every turn to stress the desire that local people should do the administering, with state or federal participation in the back seat.

I believe that local control would really be augmented, because there would be a delegation of powers to a river body by federal and state agencies in which the powers to be delegated actually reside at present.

All this is hard to get across, and for that reason I repeat the need that you cooperate to get as much time and/or time extension as is possible.

I believe an added difficulty comes from the fact that the temporary river commission was not aware of the extent to which enabling legislative action by the legislature would be needed. Therefore, members of the legislature from Western Connecticut were not enlisted early enough to draft the required enabling legislation.

Attorneys of several towns, which appear to be sympathetic to Wild and Scenic status,, have pointed out that the ordinance as first presented might be unenforceable, in the absence of required state legislation. The probability that such legislation could be introduced in the 1979 session seems to me unlikely. 110

Under the circumstances, in addition to gaining time for action, the most useful thing your agency can do is to do everything it can to assure the public and the various town officials that you intend to delegate powers as much as possible to local towns, which they do not presently have, and that your policy is to stay away from administration, except, cooperatively, at Lovers Leap.

Sincerely,

Frederick Benedikt

Frederick Benedikt

(copies: Congressman Toby Moffett
Housatonic Valley Association
Lake Lillinonah Authority)

BRUCE M. RIDGWAY
DIBBLE HILL ROAD
WEST CORNWALL, CONN. 06796

Mr. Jack E. Stark,
National Park Service,
15 State St.,
Boston, Mass. 02109

Jan. 6, 1979

Dear Mr. Stark:

I have found the Housatonic River Study most interesting and feel sure it will be very useful to the citizenry of the area as the towns in general and the temporary Housatonic River Commission in particular grapple with the best way to protect the many outstanding values the Housatonic gives us in the Northwest Corner.

However, there are two points that, in the interest of accuracy, I should like to draw to your attention. One refers to the Appalachian Trail, which, of course, is now also under the jurisdiction of the National Park Service. On page 31 it is described as being in "close vicinity to the Housatonic for 30 miles" and "on the east bank in Canaan" and then on pages 36 and 42 the study says the AT "parallels the Housatonic for approximately 30 miles". In actual fact
111 it only goes along the Housatonic for several miles on the west bank in the northern section of Kent.

Also on page 42 under "Critical Recreational Areas"the study mentions the Housatonic River Road from Boardmans Bridge to Gaylordsville as a "dirt road paralleling a scenic stretch ofthe river". Surely the dirt road north from West Cornwall along the east bank to Falls Village town line would qualify equally well on all points for inclusion here.

May I also express my support of the need for coordination between the Northeast Utilities and the management plan being worked up by the temporary Housatonic River Commission as set forth on page 47.

Sincerely yours,

Bruce M. Ridgway

Bruce M. Ridgway

BMR b