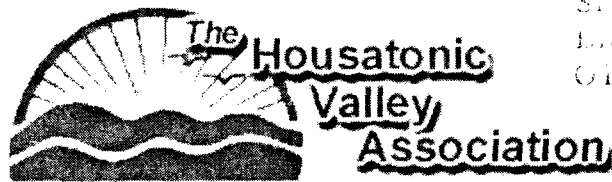


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The HOUSATONIC RIVER WATERSHED

The Housatonic River flows 149 miles from its four sources in western Massachusetts. Following a south to southeasterly direction, the river passes through western portions of Massachusetts and Connecticut before reaching its destination at Long Island Sound at Milford Point. The Housatonic River has a total fall of 959 feet. Its major tributaries are the Williams River and the Green River in Massachusetts, the Tenmile River in New York, and the Shepaug, Pomperaug, Naugatuck and Still Rivers in Connecticut.



The river's watershed, or the land area which drains into the river, encompasses 1,948 square miles and is characterized by rugged terrain giving way to rolling hills and flat stretches of marshland in the south.

While problems do exist in defined stretches, overall the river is characterized by high water quality. The river's flows are sufficient to support Class I, II, III and IV rapids.

With over 100,000 acres of public recreation land throughout the watershed, opportunities for swimming, canoeing/kayaking, fishing, sculling, boating, hiking, camping and cross-country skiing abound. The Appalachian Trail runs along the river for five miles between Kent and Cornwall Bridge, the longest stretch of river walk between Georgia and Maine.

HISTORY

The Mohican family of the Algonkin Indians, who came from New York west over the Taconic mountains, were the first valley settlers. The six main tribes migrated southward as follows: the Weataugs settled in Salisbury; Weantinocks in New Milford; Paugassets in Derby; Potatucks in Shelton; Pequannocks in Bridgeport; and, Wepawaugs in Milford. The Indians named the river "usi-a-di-en-uk" which meant "beyond the mountain place". The river was sometimes known as "Potatuck", or the "Great River", until the 18th century. A large portion of the river basin was developed for agriculture in Colonial times. Water power played a prominent role in 19th century industrial development, and remnants of dams, mill races and iron ore furnaces can still be seen today. Northeast Utilities operates five hydroelectric facilities on the river today. Dams at three of these facilities - the hepaug, Stevenson and Derby - form a chain of lakes, Candlewood Lake, Lake Lillinonah, Lake Zoar and Lake Housatonic, from New Milford south to Shelton. Much of the upper section of the river in Massachusetts is still in agricultural use, however, past industrial discharges of PCB's (polychlorinated biphenyls) into the river has created water quality problems. PCB's still remain in the river's sediments from Massachusetts to the Stevenson Dam in Connecticut. These synthetic organic chemicals can persist for decades and are a cause for concern and continued action.

Further down in the valley, in the areas of New Milford and Brookfield, tobacco farms flourished until the surge of 20th century development. South of Derby, industrial development, including steel mills and heavy manufacturing, characterizes the river. This stretch is also a tidal estuary, which supports a number of critical habitats for rare plants and animals and is a significant contributor to Connecticut's shellfish population. The Housatonic estuary is the most consistent producer of seed oysters in the northeast as a public oyster bed, and generates over one-third of all oyster seed available to the state shellfish industry.

RIVER PROTECTION

<http://www.hvathewatershedgroup.org/housatonicfactsheet.htm>



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While much of the Housatonic from New Milford north to the Massachusetts border, together with the Shepaug-Bantam tributary, qualified for protection under the Wild and Scenic Rivers Act, riverside communities have opted for local protection by establishing cooperative river commissions.

In 1985, The Housatonic Valley Association (HVA), a non-profit watershed protection group, played a primary role in gaining permanent protection for 1,800 acres of river corridor land between Kent and Sharon through easement and acquisition by the National Park Service for the Appalachian Trail.

Because of intensive residential, commercial and industrial development throughout the valley, riverfront protection is even more critical to ensure the continued enjoyment of this naturally beautiful river valley. Today, HVA continues its efforts to maintain the beauty and natural diversity of the river ecosystem through its Housatonic RiverBelt project. The goal of the project is to assist and support the development of local riverfront plans, bringing them together into a comprehensive plan with a greenway as the major component. This greenway will link together existing parks, open space parcels, pathways and trails within the river corridor from its Massachusetts source to Long Island Sound.

PHYSICAL DESCRIPTION

The Housatonic River begins its 149 mile journey in southwestern Massachusetts. The mainstem of the river is formed by the joining together of the East and West Branches of the Housatonic River in the vicinity of Pittsfield. The East Branch begins at Muddy Pond in Hinsdale and Washington and flows a total distance of approximately 17 miles, dropping 480 feet before merging with the West Branch. Outflows from Pontoosuc Lake in Lanesboro, Onoto Lake in Pittsfield and Richmond Pond in Richmond merge to form the West Branch, which flows approximately 5 miles, dropping 140 feet before joining the East Branch. The confluence of these two branches forms the headwaters of the Housatonic River mainstem, which flows in a southerly direction 132 miles to its outfall at Long Island Sound at Milford Point in Connecticut. The mainstem of the river has an overall drop of 959 feet. The Housatonic River and its tributaries drain an area of 1,948 square miles. This area is referred to as the watershed. From its headwaters flowing south toward Great Barrington, the valley is narrow and the river flows quickly, characterized by several swift drops in elevation, before it emerges from the Berkshire Hills. In this section there is a good deal of commercial and industrial development. Below Great Barrington, the valley flattens and broadens out. This region is rich in farmland, and through this section the river flows more slowly, meandering its way through the valley to Falls Village in Connecticut.

As the Housatonic River moves into Connecticut, the valley changes dramatically. The valley walls narrow and are flanked by hills on either side. The river now flows through a much harder substrate consisting of limestone, quartz and granite, and the river bottom becomes much rockier. There are still some agricultural activities in this northwestern part of Connecticut due to the presence of the river's nutrient rich floodplains.

Just south of Bulls Bridge power station, water is diverted from the river and pumped uphill, through a penstock, to Candlewood Lake, the first pump storage reservoir built in the country. Constructed in 1926, it is the largest (5,400 acres) lake in Connecticut. When river levels are too low to support the power generation at the Rocky River Power Station in New Milford, lake water is sent rushing down the penstock and through the generators. Upon leaving New Milford, the river again changes dramatically, becoming a series of 3 in-stream lakes. Each lake is formed by a hydroelectric power dam. The Shepaug Dam forms Lake Lillinonah (1,900 acres) in Bridgewater. Farther south in Monroe, the Stevenson Dam, which is the largest, creates Lake Zoar (975 acres). The third lake is Lake Housatonic (328 acres), formed by the Derby Dam between Derby and Shelton.

The flow of the Housatonic River may vary in this area. River flows are periodically "ponded" behind the dams when normal river flows are inadequate. The water is then released to turn the turbines which produce electric power. Below the Derby dam, the river begins its final change, becoming an estuary, where salt and fresh water mix. The Housatonic River estuary produces one-third of all the seed oysters which are a vital part of Connecticut's commercial shellfish industry. In this lower 12 mile section of the river are tidal wetlands and salt marshes which provide important habitat for plants, birds, shellfish, finfish and other aquatic life. The Housatonic River enters Long Island Sound at Milford Point.

The Housatonic River's major tributaries are:

- The **Williams River** and the **Green River** in Massachusetts. These two rivers merge in Great Barrington before joining the Housatonic near the Great Barrington/Sheffield border.
- The **Tenmile River**, whose headwaters are in Connecticut, flows south through New York state and enters the Housatonic River at Gaylordsville, Connecticut. Its watershed covers 210 square miles, most of which lies in New York.
- The **Still River** begins in Danbury, Connecticut and flows north, entering the Housatonic in New Milford. Its watershed has an area of almost 72 square miles.
- The **Shepaug River** has its source west of Goshen, Connecticut and flows south, joining the Housatonic at the Bridgewater and Southbury border. The watershed of the Shepaug River is 156 square miles.
- The **Pomperaug River** originates in Woodbury, Connecticut and merges with the Housatonic at Southbury. Its watershed is almost 89 square miles in area.
- The **Naugatuck River** is the largest tributary, with a watershed of 312 square miles. It begins in Torrington, Connecticut and joins the Housatonic River in Derby.
- The **Housatonic River** is highly regarded for its diverse scenic beauty, its unique vegetative and wildlife habitats and its broad recreational opportunities.

GEOLOGICAL DESCRIPTION

It is believed that in its earliest formation, over 50 million years ago, the Housatonic River was a straight flowing river, originating above the Hudson Valley in New York state. The forces of erosion caused the Hudson River to eventually break through and steal the headwaters of the Housatonic, leaving it with its source as it presently is, originating in Massachusetts.

The basin geology is somewhat complex, reflecting the results of hundreds of millions of years of natural events and processes. Most of the valley is underlain by metamorphic rock, mainly gneiss and schist from the Precambian era. This metamorphic bedrock was formed during the ancient collision of the North American continent with Europe and Africa some 300 to 400 million years ago. The intense pressure of the collision hardened the rock and caused it to fold and fault. These rocks form the steep mountains found in the valley.

Some portions of the valley, notably north of Falls Village, south of Cornwall Bridge and near New Milford are underlain by marble and are known as the "Marble Valley". During the Paleozoic era, seas covered a large portion of the valley, leaving sedimentary rock made up of carbonate mud, shells and marine fossils, material which later formed limestone. Metamorphism turned this limestone to marble. Above the bedrock is found glacial drift, comprised of the sand, silt and boulders left spread across the land by the melting glaciers as they receded over 18,000 years ago. As the glaciers advanced and receded, the river's path was continually altered, especially through the easily eroded Marble Valley.

Today the Housatonic River begins its journey in Massachusetts, separating the Taconic Mountain and New England Upland sections of the New England Physiographic Province. As it enters Connecticut's Western Uplands, it follows the Northern Marble Valley as far south as the Housatonic Highlands Plateau, two miles south of Falls Village. Here the river leaves the Marble Valley, flowing through the Housatonic Highlands until it rejoins the Northern Marble Valley at Cornwall Bridge, following it until it reaches Gaylordsville.

The river then cuts a gorge through the Hudson Highlands Plateau until it reaches the Southern Marble Valley north of New Milford center. *Two miles south of New Milford, the river crosses Cameron's Line and enters the Southwest Hills,* flowing south easterly until it eventually reaches the Coastal Slope and discharges into Long Island Sound.

FLORA AND FAUNA

The Housatonic River watershed boasts a diverse and abundant array of plant and wildlife species. Due to the changes in topography, geology, soils and climate the watershed provides the ideal setting for many types of habitat. The Housatonic River passes through five major vegetative associations:

Northern Hardwoods - Found in the upper reaches of the river through Massachusetts, this region is characterized by Sugar Maple, Beech, Yellow Birch, White Pine and Hemlock. The valley of Schenob Brook in Sheffield contains unusual Carolinian vegetation, normally found much farther south along the Atlantic Coastal Plain.

Transition Hardwoods (White Pine - Hemlock Zone) - Dominant species found in this area, which starts in southern Massachusetts and extends through northern Connecticut to Cornwall Bridge, are Northern Red Oak, Basswood, White Ash, and Black Birch. Some of the rarer plant species found in the region are Bog Rosemary, Marsh Willow-Herb, Canada Violet and Stiff Club-Moss.

Central Hardwoods - Extending from Cornwall Bridge into New Milford, the region supports the growth of Red, White and Black Oak, Hickories, and until the blight of the 1920's, Chestnuts were predominant. Rarer plant species include New England Grape, Hairy Wood-Mint and Wiegand's Wild Rye.

Appalachian Oak - Reaching from New Milford to Derby, dominant tree species include White, Red and Black Oak, Hickories, Yellow or Tulip Poplar, Black Birch, White Ash and Hemlock. Green Violet, Virginia Snakeroot, Green Milkweed, Vasey's Pondweed and Side-Oats Grama are among the characteristic rare plants found in this zone.

Coastal Hardwoods - The tidal portion, or estuary, of the river flows through this zone, characterized by alder, willow, sedge, shrubs, vines, and southeastern Piedmont and Coastal Plain species. Among the rarer plant species, Eaton's Quillwort and Mudwort are found at the mouth of the river.

The watershed provides a number of "**critical habitats**", or those which support the survival of rare and endangered species. Among the most important critical habitats are the marble ridges and ledges, caves, calcareous (calcium-rich or limy) wetlands and lakes and ponds found in the central portion of the watershed. Since the soil and surface water is less acidic, these areas are very fertile and rich in nutrients and are especially suited to agriculture.

Marble ridges and ledges, such as Bartholomew's Cobble in Ashley Falls, the Great Falls area in Canaan and the Bull's Bridge area in Kent, are home to many types of uncommon ferns, including the Narrow-leaved Spleenwort and the Slender Cliffbrake. Caves, predominantly found in Salisbury, are home to bats, invertebrates and salamanders. Calcareous wetlands, such as Robbins Swamp in Canaan and Beeslick Pond and State Line Swamp in Salisbury, while supporting such lush and diverse plant species as the Spreading Globe Flower and Showy Lady's Slipper, also attract an abundance of insects and game and non-game bird species. Marl (hard water) lakes and ponds provide the ideal setting for many unique aquatic plants, such as Pondweeds, and algal and fish species. Examples found in the Housatonic region are Twin Lakes in Salisbury and Mudge Pond in Sharon. Other habitats, and their associated species, are comprised of:

Flood Plain Forests - Once abundant in the region until extensively cleared for agricultural uses, today only remnants remain from Falls Village to Kent. Dominant trees include Cottonwood, Black Willow, Sycamore and Silver Maple. Uncommon plants such as Box Elder, Ostrich Fern and Varigated Horsetail are found, along with a wide variety of songbirds.

High Summits - These are wind-swept mountain summits, found on Canaan Mountain, Bear Mountain in Salisbury and Mohawk Mountain in Cornwall. Sparsely vegetated with low-growing woody and herbaceous plants, lichens and mosses, they support some species which are quite rare south of Central Vermont and New Hampshire.

Black Spruce Bogs - These are poorly drained acid wetlands, characterized by a luxuriant cover of mosses, Black Spruce and Larch. Several unusual and rare species of orchids and sedges are found here. The bog areas are extremely fragile and easily destroyed. Examples are Bingham Pond in Salisbury and Spectacle Pond in Kent.

Grasslands - These areas include open meadows, pastureland, grassy meadows, golf courses and hayfields. Several rare breeding birds are limited to this habitat in the Housatonic region, such as the Upland Sandpiper and the Short-Billed Marsh Wren.

Coastal Salt Marshes and Mud Flats - Located in the estuary of the Housatonic River, these areas support Cord-grasses, Spikegrass, Sedges and Eelgrass.

The presence of wildlife is also associated with the diverse habitat found within the river valley. Ringnecked pheasant, cottontail rabbit, red fox and woodchuck are found in Openland habitat, while white tailed deer, gray fox, gray squirrel, snowshoe hare, porcupine, ruffed grouse and woodcock are found in Woodland habitat. River edges provide habitat for primarily furbearing species, such as the beaver, muskrat, raccoon, river otter and mink. Waterfowl found in the area include the Canada goose, blackduck, woodduck, blue-winged teal, ringnecked duck, common goldeneye, hooded and common merganser, peregrine falcon, bald eagle, and osprey.

RIVER USES

Throughout the course of time, the Housatonic River has played a prominent role in the growth and development of the valley land which surrounds it. The earliest settlers, the Mohican Indians, migrated out of New York's Hudson Valley, coming over the Taconic Mountains. Arriving in Massachusetts some 10,000 years ago, the Indians settled along the river's banks, farmed the river's nutrient-rich floodplains and fished the river for food.

The first English colonists arrived in 1639, settling in Stratford at the mouth of the river. Agriculture was the major activity throughout the valley for much of the next century, and is still evident today where the Housatonic meanders through southern Massachusetts, and into Kent and New Milford in Connecticut, creating wide, fertile floodplains. The river was used by the early colonists for transportation and waste disposal. Farther south, Derby was a shipping and fishing port, where shipbuilding flourished for almost 200 years.

During the 18th and 19th century, water power played a dominant role in the development of industry throughout the valley, and remnants of dams, mill races and furnaces can still be seen today. In the northwest hills of Connecticut high quality iron ore was abundant. The ore was melted with limestone in blast furnaces, molded into finished iron utensils, tools and armaments and then cooled with river water. Many forests were cleared to make the charcoal used as fuel in the furnaces. The iron industry began in Salisbury in 1730, and more than 40 blast furnaces were in operation from Lanesboro to Kent during the 1800's. One of the best known examples is the Kent Furnace, built in 1864. The last furnace ceased operation in 1923.

The 1800's brought a shift to manufacturing and extensive mining of marble and limestone in the "Marble Valley" of northwestern Connecticut, and the start of papermaking. The Pittsfield region was the first area in the nation to start making paper, and by the end of the Civil War there were at least 28 paper mills in Berkshire County alone! About this same time, tobacco farming began in the Still River valley, reaching its peak near the end of the century.

By 1850, most towns up and down the river had small factories along the Housatonic's banks, using the river as both a source of water for their manufacturing or milling processes and a dumping ground for their waste products. The mills and factories eventually polluted the river, and it wasn't until the passage of the Federal Water Pollution Control Act Amendments (1972) and the Clean Water Act (1977) that a system was created for reducing and controlling pollutant loading into the river, by mandating treatment for the removal of chemicals from wastewater discharges.

Since the earliest colonial times, the river has been used as a source of power. The earliest dams were built to operate gristmills and sawmills, and later to turn turbines. In 1870 the first dam was constructed across the river between Derby and Shelton for the generation of electric power. Other hydroelectric power dams were built in Great Barrington, Falls Village (1914), Kent (Bulls Bridge, 1902), New Milford (Rocky River, 1928), Monroe (Stevenson, 1919) and Southbury (Shepaug, 1955). Hydroelectric power generation remains an important river use today.

The onset of the 20th century brought with it the decline of industrialization in the valley. While no one knows for sure, it is believed that the decline was caused by inadequate roadway transportation routes and railway systems along with competition from larger industries located outside of the Housatonic River valley. Industry survived only in the areas of Pittsfield, Danbury, and from the Naugatuck valley to the mouth of the river.

RECREATION

Throughout time, the Housatonic River has provided bountiful recreational opportunities. There are more than 100,000 acres of public recreation land in the watershed, offering hunting, hiking, camping, winter sports and water-based activities.



The waters of the Housatonic River provide excellent white-water canoeing, kayaking, tubing, boating and swimming. For the expert, Rattlesnake Rapids in Falls Village and Bull's Bridge in Kent offer challenging white-water runs. Flat water canoeing is at its best in the gentler currents found through southern Massachusetts, West Cornwall and Kent as the river flows past meadows and picturesque farms. Hikers will enjoy a splendid view of the river from the Appalachian Trail where it parallels the river as it passes through Sharon, Cornwall and Kent.

Fishing is a major activity along the entire length of the river and its tributaries. Trout, bass, and perch abound and some of the best fly fishing can be found in northwestern Connecticut. Farther south, Candlewood Lake and the Housatonic's three instream lakes, Lillinonah, Zoar and Housatonic provide opportunities for motor boating, fishing, water-skiing and swimming. Near the Shepaug Dam, one can view the endangered bald eagle, nesting and feeding near the river during the winter months.

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The tidal Housatonic estuary provides coastal recreation, commercial fishing and critical habitats for rare plants and animals. The estuary is also a significant contributor to the state's shellfish population, is the most consistent producer of seed oysters in the northeast as a public oyster bed and generates over one-third of all oyster seed available to the state shellfish industry.

The role of the Housatonic River in our future lives will depend on how well we learn to balance the many competing, and often conflicting, demands that we make on the river and its surrounding lands.

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