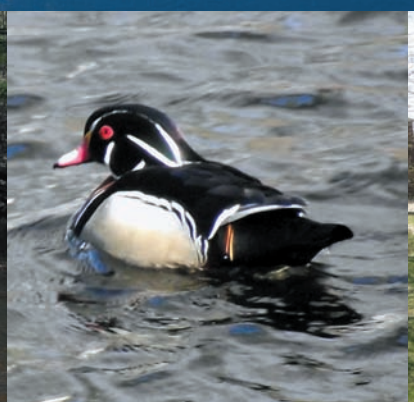
National Park Service
U.S. Department of the Interior

Wild and Scenic River Reconnaissance Survey of the Wood-Pawcatuck Watershed

Prepared by: National Park Service Northeast Region 2013



Wild and Scenic River Reconnaissance Survey of the Wood-Pawcatuck Watershed

Prepared by: National Park Service Northeast Region 2013

Department of the Interior
National Park Service
Northeast Region
15 State Street
Boston, MA 02109-3572
Tel: 617-223-5191

National Park Service
Northeast Region
200 Chestnut Street, 3FL
Philadelphia, PA 19106
Tel: 215-597-6482

All photographs were provided by WPWA

Contents

Wild and Scenic River Reconnaissance Survey Wood-Pawcatuck Watershed

I. Summary 1
A. Brief History 1
B. Summary of Preliminary Findings 2

II. Overview: National Wild and Scenic Rivers 3
A. Congressionally Authorized Wild and Scenic River Studies 3
B. Eligibility & Suitability Criteria 3
C. Partnership Wild and Scenic Rivers Model 4

III. Description of Survey Area 6

IV. Preliminary Evaluation of Eligibility 8
A. Potential ORVs 8
1. Overview of Natural Resources 8
2. Overview of Geological Resources 9
3. Overview of Cultural and Historical Resources 10
4. Overview of Recreation and Scenic Resources 10
5. Summary of Potential ORVs by River Segment 11
B. Preliminary Free-Flow Analysis 13
C. Existing Water Quality 16

V. Preliminary Evaluation of Suitability 20
A. Existing River Protection 20
B. Existing Support for Wild and Scenic Study 22
C. Partnership Wild and Scenic River Considerations 22
D. Hydro Project 23
E. Information Gaps/Potential Research Studies 23

VI. NPS Findings 25

I. Summary

A. Brief History

A reconnaissance survey of the Wood-Pawcatuck Watershed was conducted by the Northeast Region of the National Park Service (NPS) at the request of Representative Jim Langevin (RI-2). Representative Langevin requested that five rivers (86-miles) of the Wood-Pawcatuck Watershed as they run through the towns of Charlestown, Coventry, East Greenwich, Exeter, Hopkinton, North Kingstown, Richmond, South Kingstown, Westerly, West Greenwich in Rhode Island, and North Stonington, Sterling, Stonington, Voluntown in Connecticut, be evaluated as candidates for a potential Wild and Scenic River designation and as a step toward a full Wild and Scenic River Study.

The reconnaissance survey provides a preliminary assessment of the eligibility and suitability of the Wood-Pawcatuck River as a candidate for a Wild and Scenic designation according to criteria established under the Wild and Scenic Rivers Act (WSRA). Included in the preliminary eligibility assessment is the identification of potentially significant natural, cultural and recreational resources that may be determined to be Outstandingly Remarkable Values (ORVs) as defined by the WSRA. The overall objective is to determine whether Congressional authorization for a Wild and Scenic River Study is warranted, and to make an initial determination on whether Wild and Scenic designation is an appropriate technique for river protection.

There are no public documents prepared for this reconnaissance survey nor does it trigger NEPA (National Environmental Policy Act), since NPS is not taking a major federal action significantly affecting the human environment. The survey determines only whether a full Wild and Scenic Study is warranted. Although the reconnaissance survey does not involve the public, consultation with key stakeholders was vital to this process. The NEPA process and full public involvement would be part of a Wild and Scenic Rivers Study should it be authorized by Congress. The survey began in January, 2013 and was completed in September, 2013 by staff of the Northeast Regional Office.

Since 2010, the locally-based Wood-Pawcatuck Watershed Association including residents, town leaders, and others interested in river conservation has been leading an exploratory effort to determine whether the Wild and Scenic River designation might be an appropriate way to recognize and protect the Wood-Pawcatuck River and its associated resources. The group has developed local, regional and state partnerships, gathered letters of support and gained votes of approval from all of the towns that would be involved in a Wild and Scenic Study. Specifically, local interest has been expressed in pursuing a "Partnership Wild and Scenic River Study," based on river management models such as the Lamprey River in New Hampshire and Farmington River in Connecticut. As such, this reconnaissance survey addresses some of the particular features and requirements of the Partnership Wild and Scenic River (PWSR) model as a part of the preliminary evaluation process.

The Wood-Pawcatuck Watershed Protection Bill (Study Bill) was introduced in the House of Representatives during the 112th Congress. The Study Bill passed the House but failed to make its way through the complete legislative process. The Study Bill was re-filed in February, 2013. The bill has since passed the House and gained unanimous passage by the Senate Committee on Energy and Natural Resources. The Study Bill would amend the Wild and Scenic Rivers Act to designate a segment of the Beaver, Chipuxet, Queen, Wood, and Pawcatuck Rivers for study for potential inclusion in the National Wild and Scenic Rivers System.

B. Preliminary Findings

The NPS reconnaissance survey team has determined, based on readily available information, that segments of the Wood-Pawcatuck River exhibit free-flowing character and noteworthy natural, cultural and recreational resource values likely to meet eligibility criteria for inclusion in the National Wild and Scenic Rivers System. In addition, the presence of very strong community and interest group support for a Wild and Scenic River Study, together with a demonstrated track record of natural and cultural resource protection, support key elements of suitability for inclusion in the System, and provide a strong indication that a Wild and Scenic River Study would be appropriate and productive.

The Wild and Scenic Rivers Act provides for three possible classifications of eligible river segments: wild, scenic and recreational. The criteria distinguishing these classifications are based on the degree of human modification of the river and its adjacent shorelines. Based upon the applicable criteria, segments of the Beaver, Chipuxet, Queen, Wood and Pawcatuck Rivers will not meet the "wild" river area criteria. However, a more in-depth analysis would be required to determine whether a "scenic" or "recreational" classification is appropriate for river segments likely to meet the eligibility criteria.

II. Overview: National Wild and Scenic Rivers

Background

The National Wild and Scenic Rivers System was established by Congress in 1968 through the Wild and Scenic Rivers Act (WSRA) to protect outstanding rivers from harmful effects of new federally assisted projects such as dams and hydroelectric facilities. To be considered eligible for inclusion in the System, a river or river segment must be free-flowing and possess at least one Outstandingly Remarkable Value (ORV). The ORV must be natural, cultural or recreational in character, river-dependent, and have unique, rare or exemplary qualities on a regional or national scale. The most common way for an eligible river to be added to the System is through federal legislation. Each river that is designated into the national system receives permanent protection from development of federal water resource projects that would have an adverse effect on its free-flowing condition, water quality, and ORVs. In addition, the Federal Energy Regulatory Commission (FERC) may not license the construction of any dam or associated project works on a designated segment of river.

A. Congressionally Authorized Wild and Scenic River Studies

To determine whether a river is both eligible and suitable to be included in the National Wild and Scenic Rivers System, a Wild and Scenic River Study is conducted. Congress authorizes studies based on Section 5(a) of the WSRA. Eligibility is based on the presence of a free-flowing river condition and the presence of at least one ORV.

A Study assesses the potential ORVs through objective analysis of known data by resource experts using professional judgment. The Study process provides ample time for extensive education and broad participation in the process. This extensive public process is critical to ultimate determination of suitability for inclusion in the System. Congress generally directs that Wild and Scenic River Studies be concluded within three years from the initial funding of the Study.

According to Section 5(c) of the WSRA, the study should be pursued in close cooperation with the appropriate agencies of the state or its political subdivisions and shall include a determination of the degree to which the state might participate in the preservation and administration of the river should it be proposed for inclusion in the National Wild and Scenic Rivers System.

B. Eligibility and Suitability Criteria

Eligibility

To be eligible for designation, a river must be free-flowing and possess at least one river-dependent Outstandingly Remarkable Value (ORV). Free-flowing is defined by the Wild and Scenic Rivers Act (WSRA) as, "existing or flowing in a natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway. The existence, however, of low dams, diversion works and other minor structures at the time any river is proposed for inclusion in the national wild and scenic rivers system shall not automatically bar its consideration for such inclusion: Provided, That this shall not be construed to authorize, intend, or encourage future construction of such structures in components of the national wild and scenic rivers system."

The WSRA defines an ORV as scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. An ORV must be a river-related unique, rare or exemplary feature on a regional or national scale of comparison.

Suitability

Suitability is an assessment of factors to provide the basis for determining whether to recommend a river for addition to the National Wild and Scenic Rivers System. The Interagency Wild and Scenic Rivers Coordinating Council (IWSRCC) developed the following questions that can assist with the determination:

1) Should the river's free-flowing character, water quality and ORVs be protected, or are one or more other uses important enough to warrant doing otherwise?

2) Will the river's free-flowing character, water quality, and ORVs be protected through designation? Is it the best method for protecting the river corridor? In answering these questions, the benefits and impacts of Wild and Scenic River designation must be evaluated, and alternative protection methods considered.

3) Is there a demonstrated commitment to protect the river by non-federal entities that may be partially responsible for implementing the management plan?

Determining a river's suitability for a Wild and Scenic designation is uniquely based on the specific characteristics and conditions of an individual river. The Study Team is responsible for making this determination based on a wide range of considerations including evaluating any potential threats to the free-flowing condition or resources in a region with high development pressure.

C. Partnership Wild and Scenic Rivers Model

The Partnership Wild and Scenic River model was developed in response to the need for a Wild and Scenic River designation model tailored to rivers that meet the Wild and Scenic River criteria and that are characterized by community-based settings, extensive private land ownership along the river, non-federal lands, and well-established traditions of local governance. This model has a proven track record of effectively creating river protection strategies that bring communities together in protecting, enhancing and managing local river resources, while focusing federal involvement on technical assistance rather than direct land or resource management. With the exception of the Allagash River in Maine and the Westfield River in Massachusetts, all of the other New England rivers are designated through the Partnership Wild and Scenic River model.

For more than 20 years, the NPS has taken advantage of this direction when conducting Studies bordered by predominantly private and non-federal lands by encouraging formation of informal Study committees based around state and local representation. Such Study committees have become an integral part of the study approach, and ensure active local participation in the process. Local and state knowledge is often critical to effective and efficient research regarding potential ORVs of the study area, and is absolutely essential to the development of local and state-based management strategies for protection of such values. Since it is a central tenet of such Studies that land-based resource protection must be primarily accomplished through local, state, and non-governmental action, it is therefore a central task of the Study committee to develop a locally-based management plan (Plan) to protect the important river values being researched and documented throughout a Study. Adoption of the plan by state and local governments prior to designation provides evidence of local commitment to protecting Wild and Scenic River values without the need for direct federal management, a major factor in determining whether the Partnership model is suitable for the river under study. This Plan can serve the river, local communities, state agencies and other stakeholders regardless of whether Wild and Scenic River status is achieved as a result of the Study.

During a Partnership Wild and Scenic Rivers Study the suitability determination is based on factors such as:

1) Public support and evidence of commitment by non-federal entities that will be partially responsible for implementing a plan for protection;

2) Evidence of existing resource protection to meet the requirements of Section 6(c)[1] of the WSRA; and

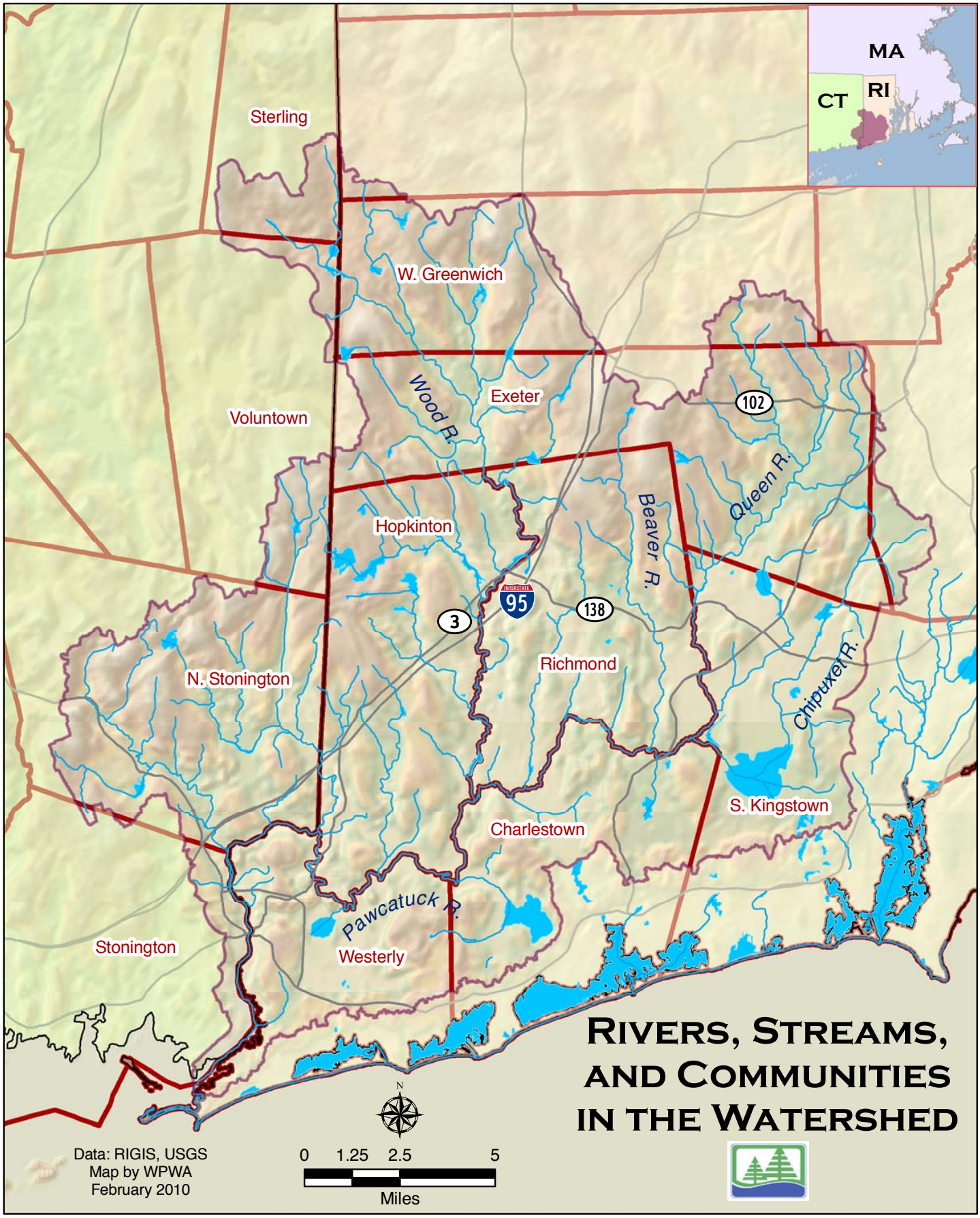
3) Lasting protection measures set forth in a non-regulatory, locally-developed comprehensive management plan as required under Section 3(d)(1)[2] of the WSRA.

---

1 Section 6(c) states that federal condemnation of lands cannot be used in towns that have zoning ordinances in force that are consistent with the purposes of the WSRA.

2 Section 3(d)(1) requires that a comprehensive management plan address resource protection, development of lands and facilities, user capacities, and other management practices necessary or desirable to achieve the purposes of the WSRA.

Wood-Pawcatuck Watershed



III. Description of Survey Area

The Wood and Pawcatuck Rivers system lies in southeastern Connecticut and the southwestern region of Rhode Island. The source of the Pawcatuck River is in the Town of South Kingston, RI and its terminus is in the Town of Westerly, RI and Stonington, CT, where it drains to the Little Narragansett Bay (Long Island Sound). The coastal Town of Westerly is a popular tourism destination with its scenic views of the Narragansett Bay. It has long been a destination for those seeking a beach community vacation.

The watershed area is approximately 300 square miles, encompassing many high quality tributaries within seven major drainage areas including the Queen, Wood, Chickasheen, Chipuxet, Shunock, Green Falls, and Pawcatuck Rivers. It is one of the few remaining relatively pristine natural areas along the northeast corridor between New York and Boston.[3] The Pawcatuck River is 38 miles long and the Wood River, its major tributary is 27 miles long.[4]

The Pawcatuck River and its associated tributaries run through a rural wooded landscape amongst a series of towns that grew up on the banks of the watercourses, historically as mill villages. Vestiges of the textile and fabric dyeing industry can still be found on the banks of the rivers. The watershed is the most rural, least developed in Rhode Island with approximately 87 percent of the land undeveloped and approximately 75 percent forested. The estuary of the Pawcatuck River winds its way through the more highly developed communities of Pawcatuck, Connecticut and Westerly, Rhode Island. Development pressure is high in this region as is typical in the states along the Atlantic coastline.

The following description of the eight possible Study stream segments was provided by the Wood-Pawcatuck Watershed Association. The extent of the segments for Study and possible designation would require a full investigation during a possible Wild and Scenic Study.

---

3 The Pawcatuck Watershed Report, Pawcatuck Watershed Partnership, (EPA. Region 1, New England, 1999), 1.
4 http://www.wpwa.org/waterOverview.htm

Proposed River	Proposed Segment	Length in Miles
Chipuxet River	**From:** Hundred Acre Pond, South Kingstown **To:** Worden Pond, South Kingstown	5
Pawcatuck River	**From:** Worden Pond, South Kingstown **To:** Main Street/Rt. 3 (Nooseneck Hill Road), Hopkinton/Westerly	28
Pawcatuck River	**From:** Main Street, Hopkinton/Westerly **To:** Pawcatuck Rock, Westerly/Stonington	7
Wood River	**From:** Its headwaters, Sterling/Voluntown/Exeter/ West Greenwich **To:** Skunk Hill Road, Richmond/Hopkinton and including all of its tributaries	11
Wood River	**From:** Skunk Hill Road, Hopkinton/Richmond **To:** Pawcatuck River, Charlestown/Hopkinton/ Richmond	10
Queen River	**From:** Its headwaters, Exeter/West Greenwich **To:** Kingstown Road, South Kingstown and including all its tributaries	10
Queen River (Usquepaugh River)	**From:** Kingstown Road, South Kingstown **To:** Pawcatuck River, Richmond/South Kingstown	5
Beaver River	**From:** Its headwaters, Exeter/West Greenwich **To:** Pawcatuck River, Richmond	10

IV. Preliminary Evaluation of Eligibility

A reconnaissance survey does not catalog all of the potential Outstandingly Remarkable Values (ORVs) within the Study area. The goal is to identify representative resources that reflect the natural, cultural and recreational values that may meet the eligibility threshold of being unique, rare or exemplary on a regional or national scale of reference and be river-related or dependent.

The interdisciplinary Study team would be tasked with making the final determinations on river-dependent resources that meet the eligibility criteria of "… being a unique, rare or exemplary feature that is significant at a comparative regional or national scale."[5] This reconnaissance survey identifies resources that may or may not fully meet the ORV criteria, and it would be expected that a Study team would determine which features merit this status.

The Nationwide Rivers Inventory (NRI) is a registry, compiled by the NPS, of river segments that potentially qualify as national wild, scenic or recreational river areas. River segments included must have free-flowing conditions and at least one potential ORV. Six segments of the Wood-Pawcatuck system are included in the NRI: one segment of the Chipuxet River for botanic values; two segments of the Pawcatuck River for geologic and historic values; and three segments of the Wood River for recreational values. All of these segments, as well as the reasons for listing, would be included as a part of a full Wild and Scenic River Study process, as envisioned in the pending Study Bill.

A. Potential Outstandingly Remarkable Values (ORVs)

1. Overview of Natural Resources

This watershed displays a high level of habitat and species diversity along with a large percentage of rare and endangered species relative to the state and region as well, including species considered globally rare. The Nature Conservancy, a local partner of the Wood-Pawcatuck Watershed Association, has dubbed the Wood River a "Unique and Special Place," and the associated "Borderlands" along the Connecticut/Rhode Island border valuable due to the thousands of acres of intact woodland. The area is considered one of the few remaining relatively pristine natural areas with large forested tracts between Boston and New York.[6] In addition, the North Atlantic and lower New England ecoregions intersect within the watershed, providing for plant and animal communities that reflect a mixture of coastal and inland, and northern and southern influences.[7]

Watershed species diversity relates to the water and land's unspoiled character and large variety and of high quality habitat types including pitch pine barrens, rhododendron swamps, laurel thickets, flood plain forests, marshes, bogs, fens, hundreds of vernal pools, crystal clear ponds, an estuary and some of the regions' largest Atlantic white cedar evergreen swamps.[8]

---

5 Jackie Diedrich, Cassie Thomas, U.S. Forest Service and National Park Service, The Wild & Scenic River Study Process, (Portland, Oregon, and Anchorage, Alaska, 1999), 12.

6 Wood Pawcatuck Rivers Study Draft Executive Summary, October 1984, NPS, Mid-Atlantic Regional Office, Rhode Island DEM.

7 The Pawcatuck Watershed Report, 1999, Pawcatuck Watershed Partnership, printed by EPA. Region 1, New England.

8 The Pawcatuck Watershed Report, 1999, Pawcatuck Watershed Partnership, printed by EPA. Region 1, New England.

Occupying a narrow band from southern Maine to Florida, some of the largest stands of Atlantic White Cedar are found in the Pawcatuck River watershed at such places as the Great Swamp [found on the Chipuxet River, a Pawcatuck tributary, this swamp is the largest in New England and is a National Natural Landmark], *Indian Cedar Swamp, and Chapman's Swamp in Westerly. Forests of white Cedar provide a specialized habitat for many organisms, including the Hessel's Hairstreak butterfly...species feed exclusively on cedar foliage...* [9]

Also of particular note, is the existence of one of the largest deciduous floodplain forests in Rhode Island, of more than 300-acres. Located near the headwaters of the Pawcatuck, it is potentially the highest quality swamp site in Rhode Island and is a prime example of pre-European settlement vegetation due to the complete lack of development. The "Great Swamp" is a RI State Management Area and is the only New England nesting site of the Prothonotary Warbler.

According to the 1999 Pawcatuck Watershed Report, 75 percent of all animal species found in Rhode Island are found within the watershed — this includes 36 mammals, 16 amphibians, 18 reptiles, 123 nesting birds, 33 freshwater fish and thousands of insects. Some of the species found here such as nesting neotropical migrant birds, freshwater mussels, river invertebrates, reptiles and amphibians rely on a landscape of large undisturbed areas for survival.

About "... 70 percent of Rhode Island's globally rare (generally found at fewer than 100 sites, worldwide) and 63 percent of its rare species and natural community occurrences are found within the Pawcatuck watershed."[10] The species that are considered rare within a state-wide context, represent about 70 percent of the total number of rare species present. Some species of note are the Sandplain Gerardia, Northern Parula Warbler, Etuberlated Rush, Eastern Spadefoot Toad, Spatterdock Darner, Eastern Pearlshell and Pale Green Pinion Moth. They are not found elsewhere in the state.

2. Overview of Geological Resources

In a 1999 Technical Report of the Wild and Scenic Rivers Coordinating Council, eligibility criteria for geologic resources are described as the river, or the area within the river corridor, containing one or more examples of a geologic feature, process or phenomenon that is unique or rare within the region of comparison. The feature(s) may be in an unusually active stage of development, represent a "textbook" example, and/or represent a unique or rare combination of geologic features (erosional, volcanic, glacial or other geologic structures).

The glacial history of this watershed has resulted in a diverse mixture of habitat types, an unspoiled scenic landscape and extensive water resources. There are some exceptional examples of glacial features such as outwash plains, kettle ponds and glacial deposition of the late Ice Age. The Pawcatuck River runs east to west versus north to south due to the existence of the Charlestown Moraine that was deposited by the last glacial retreat.[11]

The Pawcatuck Watershed has gained the special EPA designation of Sole Source Aquifer due to the region's reliance on this source of drinking water.

---

9 The Pawcatuck Watershed Report, 1999, Pawcatuck Watershed Partnership, printed by EPA. Region 1, New England.

10 The Pawcatuck Watershed Report, 1999, Pawcatuck Watershed Partnership, printed by EPA. Region 1, New England.

11 http://www.wpwa.org/documents/PawcatuckRiverFacts.pdf

3. Overview of Cultural and Historical Resources

The Interagency Wild and Scenic Rivers Coordinating Council (IWSRCC), provides guidance on eligibility criteria for prehistory and history values. Native American sites must have unique or rare characteristics or exceptional human interest value. Sites may have other attributes such as national or regional significance for interpreting prehistory. Historical values related to a river could be associated with a significant event, an important person or a rare cultural event. Such prehistory or historic sites or features could be also listed on the National Register of Historic Places. Cultural or historical resources that have local significance may not meet the criteria on a regional or national level. The reconnaissance survey has identified resources that may or may not fully meet the ORV criteria, and it would be expected that a Study team would determine which features merit this status.

Human occupation by Native Americans dates back several thousand years. The lasting occupation/ settlement of this area relates to the resources provided by the natural environment. Native American sites that could potentially meet the eligibility criteria include:

- Granite rock shelter campsites and seasonal campsites that were the base of operations for farming, fishing and harvesting shellfish.
- The site of an important battle that was fought at Shannock Falls between the Narragansett and Pequot Indian tribes over the right to control this productive fishing location. The Narragansett prevailed.
- The site of the Great Swamp Massacre, that took place in modern day South Kingstown, was a post-contact battle that devastated the Narragansett Indian Tribe. The Narragansett Tribe was never the same after the great losses of this battle.

In the 18th and 19th centuries, European communities developed as mill villages along the watershed rivers to harness water power for saw, grist and carding mills. This assembly of historical mill villages was identified by the NPS for a potential "Thematic Group" designation on the National Register of Historic Places.

Kenyon's Grist Mill, located at the site of Kenyon Mill Pond Dam that is slated for removal in 2013, is the oldest manufacturing business, and the second oldest continuously operated in Rhode Island. Grain is milled on the original granite millstones quarried from Westerly, RI.[12]

There is a long-term tradition of ship building and boat yards in this area due to this coastal location. Dating back to 1680, ship building was the most popular occupation. Although there is no longer any ship building, there are still a number of boatyards and marinas in the watershed.

Based on this brief survey of historical and cultural resources, it appears that the Wood-Pawcatuck River has some sites and/or features that could qualify as ORVs. A more detailed review of the resources that are river-related is recommended to be undertaken during a possible Study to determine whether they are river-dependent and unique, rare or exemplary — regionally or nationally. The study team will determine which of the resources meet all of the eligibility requirements. Sources of information may include the Rhode Island Historical Society, town historical committees and the Tomaquag Indian Memorial Museum.

4. Overview of Recreation and Scenic Resources

A potential recreational resource is based on the popularity of the activity and the extent to which visitors are willing to travel to use the resources. In addition, interpretive opportunities may be significant, and may potentially attract visitors from throughout the region and a river-related activity could be a setting for a national or regional event.[13] The guidance on scenery is that the elements of the landscape result in "notable or exemplary visual features and/or attractions."

12 http://www.kenyonsgristmill.com/about_us.html

13 Jackie Diedrich, Cassie Thomas, U.S. Forest Service and National Park Service, The Wild & Scenic River Study Process, (Portland, Oregon, and Anchorage, Alaska, 1999), 13.

The recreational opportunities and scenic resources of this region are closely linked. The forested scenery is the backdrop that creates an enjoyable environment for recreating on and beside the Wood and Pawcatuck Rivers and their tributaries, and the unspoiled quality of the landscape contributes to the recreational experience.

Some of the most popular recreational activities of the Wood-Pawcatuck Watershed include paddling, fishing and hiking. Other popular recreational pursuits include camping, wildlife viewing, and photography. The rivers' high water quality supports recreational use.

The watershed has about 52-miles of primarily flat paddling miles with some limited Class II opportunities. There are a large number of access points to the river, along with 11 ponds with public access, two state parks, and eight state management areas. The removal of the Lower Shannock Dam has resulted in a new fast-water recreational feature for kayakers.

The Wood-Pawcatuck Watershed Association (WPWA) has a fleet of canoes and kayaks, stored on their campus on the banks of the Wood River for their educational and recreational programs. The WPWA produces the Wood-Pawcatuck River Guide and water trail maps for the Wood River. Paddling provides exceptional wildlife viewing opportunities as well as the ability to view some of the historical mill sites. Fairly narrow watercourses with heavily vegetated banks provide a unique backwoods paddling experience. A sense of solitude can be achieved in the midst of a densely populated region of southern New England.

Paddling opportunities are promoted locally and regionally, and paddling on Rhode Island's many water trails has been identified by National Geographic Society (NGS) as a "Best Adventure Destination" of 2012. NGS refers to the Rhode Island Blueways Alliance as they have mapped the paddling links between the many miles of coastline with the rivers of Rhode Island.

There is an outstanding New England sports fishery here due to the significant cold-water trout fishery that includes a native brook trout population. The Wood River and tributaries of both the Wood and Pawcatuck Rivers are the most heavily Rhode Island DEM trout-stocked rivers in the state. Multiple efforts to remove dams and provide fish passage have resulted in some fish restoration successes (see free-flow analysis section for details). The Pawcatuck had early success restoring a self-sustaining shad population to the river that dropped off around 2005. Since then a stocking program has been re-introduced.[14]

5. Summary of Potential ORVs by River Segment

The following table provides an overview of potential ORVs related to the river segments proposed for Wild and Scenic River Study, based on a summary provided by the Wood-Pawcatuck Watershed Association. A Study Team would determine if these potential ORVs meet the WSRA eligibility requirements.

14 http://www.dem.ri.gov/programs/bnatres/fishwild/pdf/wrisum12.pdf

Proposed River	Segment	Potential ORVs
Chipuxet River	**From:** Hundred Acre Pond, South Kingstown **To:** Worden Pond, South Kingstown	**Natural** — Segment includes Great Swamp, which is the largest swamp in New England and supports extensive swamp forest and marsh vegetation. The area is a National Natural Landmark. **Geological** — Segment contains three large unique kettle ponds — Thirty Acre, Hundred Acre, and Larkin Ponds. **Historic** — Segment includes portions of the site where a decisive colonial battle was fought with the Narragansett Indians.
Pawcatuck River	**From:** Worden Pond, South Kingstown **To:** Main Street/Rt. 3 (Nooseneck Hill Road), Hopkinton/Westerly	**Geological** — The topography, including outwash plains and depressions forming Worden Pond, is an exceptional example of glacial deposition of the late Ice Age. **Historic** — Segment includes portions of the site where a decisive colonial battle was fought with the Narragansett Indians.
Pawcatuck River	**From:** Main Street, Hopkinton/Westerly **To:** Pawcatuck Rock, Westerly/ Stonington	**Recreational** — The river provides unmatched opportunities for non-motorized boating, wildlife viewing, and photography. Adjacent to the river are many areas for hiking and camping.
Wood River	**From:** Its headwaters, Sterling/Voluntown/Exeter/ West Greenwich **To:** Skunk Hill Road, Richmond/Hopkinton and including all of its tributaries	**Recreational —** Segment is in close proximity to the urban population centers of southeastern New England and includes significant and diverse recreation features. **Natural —** Segment contains large continuously forested areas, along with a mix of many diverse aquatic and terrestrial habitats. Segment contains two unusual bogs and hundreds of vernal pools, along with many habitats supporting state-listed rare or endangered species.
Wood River	**From:** Skunk Hill Road, Hopkinton/Richmond **To:** Pawcatuck River, Charlestown/Hopkinton/ Richmond	**Recreational —** Segment is in close proximity to the urban population centers of southeastern New England and includes significant and diverse recreation features including a trout fishery, a trail network, and Class II paddling.

Queen River	**From:** Its headwaters, Exeter/ West Greenwich **To:** Kingstown Road, South Kingstown and including all its tributaries	**Natural —** Segment is unique in that it contains several populations of rare and endangered odonata and habitat which could support other rare and endangered species.
Queen River (Usquepaugh River)	**From:** Kingstown Road, South Kingstown **To:** Pawcatuck River, Richmond/South Kingstown	**Natural —** Segment contains a significant native trout fishery and extensive wildlife habitat.
Beaver River	**From:** Its headwaters, Exeter/ West Greenwich **To:** Pawcatuck River, Richmond	**Natural —** Segment contains suitable habitat for rare and endangered native species and exemplary habitat for native brook trout.

B. Preliminary Free-Flow Analysis

A Wild and Scenic designation preserves certain rivers in their free-flowing condition and protects them from the harmful effects of new federally assisted projects such as dams and hydroelectric facilities. Rivers or river segments must be determined to be free-flowing to be eligible for designation. Section 16(b) of the WSRA defines "free-flowing" as "…existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway. "Free-flowing" refers to the flow within the designated river segment and is not the same as naturally flowing. For instance, Section 16(b) of the WSRA also states that the existence of "low dams, diversion works, and other minor structures" does not automatically bar its consideration for designation. The 1982 Interagency Guidelines define water flow sufficiency for a determination of eligibility stating that "Flows are sufficient if they sustain or complement the outstandingly remarkable values for which the river would be designated."[15]

Local stakeholders have identified river segments that could be included in a possible Wild and Scenic Study. However, it has not yet been determined what the full scope of study would be within each of the tributary watersheds. For instance, feeder streams are considered critical for watershed protection in this region, as well as for protection of the exceptional groundwater resources of the region, and therefore may be considered for Study inclusion.

The Wood-Pawcatuck Watershed Association (WPWA) also provided an inventory of dams that are situated within the watershed. According to this inventory there are seven dams on the Wood River, ten dams on the Pawcatuck River, six dams on the Queen River and three dams on the Beaver River and no dams on the Chipuxet. The majority of these small dams were developed to power small industry mills of the 17th and 18th centuries, and are no longer used for their original purpose.

The WPWA, along with partners, has taken the lead in restoring free-flowing conditions to segments of the waterways through dam removal. The table below indicates the dams that have been breached or removed, and where fish passage facilities have been constructed on the Wood and Pawcatuck. When available, the potential status of an existing dam's free-flowing condition is also indicated based on a preliminary analysis. All of the dams should be field-examined during a Wild and Scenic Study to determine whether they meet the "free-flowing" criteria and are therefore eligible to be included within a potential Wild and Scenic designation. For example, dams that create significant impoundments, along with their associated river segments, would result in the exclusion of the segments from are area found eligible for Wild and Scenic designation.

15 "Department of the Interior and Agriculture Interagency Guidelines for Eligibility, Classification and Management of River Areas," published in the Federal Register (Vol. 47, No. 173; September 7, 1982, pp. 39454-39461).

Dam Name	Height in feet	Owner	Comments
Wood River			
Hazard Pond Dam	7.0	Buckley, Alfred, Jr.	
Barberville Dam	10.0	RIDEM	
Wyoming Pond Upper Dam	11.0	RIDEM	
Hope Valley Mill Pond Dam	15.0	RIDEM	breached in 2010 flood
Switch Road USGS Gaging Weir			
Woodville Pond Dam	10.0	unknown	
Alton Pond Dam	19.0	RIDOT	
Confluence with Pawcatuck River			
Pawcatuck River			
Kenyon Mill Pond Dam	8.0	Kenyon Industries	to be removed and rock ramp installed summer 2013
Horseshoe Falls Dam	18.0	Flynn, Francis	fish ladder and eel way installed 2012
Lower Shannock Dam			removed 2011
Carolina Pond Dam	10.0	Atlas Corp., (John Quinn)	free-flowing through raceway
Carolina USGS Gaging Weir			
Burdickville Dam		Bloomfield, Paul	breached
Bradford Mill Dam	9.5	Bradford Dyeing Association, Inc.	fish ladder
Potter Hill Dam	10.0	Renewable Resources, Inc. (Edward Carapezza)	fish ladder; owner filed for FERC license which was denied; currently in talks with RIDEM to purchase
White Rock Dam	8.0	Griswald Textiles, Inc. (James Blair)	free-flowing through raceway
Stillmanville Dam		(Eagle Waste Company)	breached
Chipuxet River			
None in the proposed reaches			

Queen River			
New Road Pond		TNC	
Rodman Sawmill Pond		RI Coon Hunters Association, Inc	
Edwards Pond	unknown	Exeter Country Club	small farm dam
Exeter Country Club Dam	unknown	Exeter Country Club	small farm dam
Williams Reynolds Road Pond Dam	unknown	Estate of Peter Brownell	small farm dam
Glen Rock Reservoir Dam	7.0	Kenyon Cornmeal Co., Inc. (Paul Drumm III)	
Beaver River			
James Pond Dam	9.0	Buchanan, Helen	
Tug Hollow Pond Dam	9.0	Buchanan, Helen	
DeCoppett Estate Pond	unknown	RIDEM	

Based on available information, the NPS conducted a preliminary evaluation of the river segments that include dams. This initial assessment did not evaluate the riverine conditions of all river segments nor does it replace the need for a full on-the-ground free-flow assessment that would be required during a possible Wild and Scenic Study.

Wood River — Of the seven dams listed on the inventory, one has been breached (Hope Valley Mill Pond Dam) and four appear to be small and free-flowing (Hazard Pond Dam, Barberville Dam, Wyoming Pond Upper Dam, Woodville Pond Dam). The status of the Alton Pond Dam is unclear based on available information. The Switch Road USGS Gaging Weir is low and free-flowing.

Pawcatuck River — Of the ten dams listed on the inventory, one was removed (Lower Shannock Dam), two were breached (Burdickville Dam, Stillmanville Dam), two are free-flowing through the raceway (Carolina Pond Dam, White Rock Dam), and two appear to be small and free-flowing (Bradford Mill Dam, Potter Hill Dam). The Horseshoe Falls Dam is 18-feet high, though appears to be free-flowing, with upstream and downstream conditions riverine in appearance. The Kenyon Mill Pond Dam is scheduled for removal and the Carolina USGS Gaging Weir is low and free-flowing.

Queen River — It appears that five of the six dams are small, though it is not clear whether they are potentially free-flowing based on available information ((New Road Pond, Rodman Sawmill Pond, Edwards Pond, Exeter Country Club Dam, Williams Reynolds Road Pond Dam). There appears to be ponded conditions associated with some of these dams. The Glen Rock Reservoir Dam appears to be small and free-flowing, though may impound water in a lake-like reservoir.

Beaver River — The James Pond Dam and the Tug Hollow Pond Dam appear to be small and free-flowing though further assessment would be required to determine whether these dams are impounding water significantly. There was little available information about the DeCoppett Estate Pond.

In addition, it appears, that based on preliminary information, the following river segments may contain particular features that would require special examination during a Study due the presence of large road crossings, streambank alterations, dams and/or impounded waters. For instance the Pawcatuck River in the vicinity of the Kenyon Mill Pond Dam may or may not be eligible due to significant bank alterations. There may be impounded stream segments associated with additional dams not already noted, that do not qualify as riverine, however, this was beyond the scope of this survey.

Wood River	Rt I-95 bridge crossing, Rt 91 bridge crossing, Hazard Pond and Wyoming Pond
Pawcatuck River	Development associated with the Kenyon Mill Pond Dam
Queen River	Ponds associated with golf courses, dams and small road crossings
Beaver River	James Pond Dam and Tug Hollow Pond Dam
Chipuxet River	Worden Pond, Hundred Acre Pond and associated docks within pond

Also based on available information, it is recommended that a point upstream of the Rt 1 bridge crossing of the Pawcatuck River, in the Town of Pawcatuck, be considered as a possible downstream boundary for potential Wild and Scenic River designation consideration, based on the altered shoreline in downtown Pawcatuck and the presence of multiple docks and marinas downstream of this bridge. A free-flow assessment would consider these features as well as all of the dam sites and stream segments that have been modified.

River segments within this survey area that include dams, impounded waters and large road crossings would require special examination during a possible Study to determine the impacts on free-flowing condition and potential eligibility for Wild and Scenic River designation. In addition, significant streambank development and alterations to the bed and banks of the waterways such that the segments lack ORVs and/or free-flowing conditions would deem a river segment ineligible. Such factors would result in exclusion of a river segment from consideration for further study. Conducting a free-flow assessment at the outset of any future Study, including an inventory of infrastructure such as dams, concrete bridge piers, docks, riprap, etc., would allow Study participants to focus their ORV identification and suitability assessment work on segments known to be free-flowing.

C. Existing Water Quality

The Wild and Scenic Rivers Act provides some general direction on protecting water quality for Wild and Scenic Rivers. Also, the 1982 Interagency Guidelines refer to consistency with the Federal Clean Water Act, and require water quality to be maintained and "where necessary, improved to levels which meet Federal criteria or federally approved state standards for aesthetics and fish and wildlife propagation." In addition, the Guidelines emphasize the importance of developing strategies for managing water quality and collecting "baseline data during river studies and development of comprehensive river management plans."[16]

This 300 square-mile primarily rural watershed is approximately 70 percent wooded – the forested landscape safeguards the streams' excellent water quality. In addition, high quality wetlands offer protection of water quality both in the tributaries and in the mainstem Wood and Pawcatuck. More urban portions of the watershed include the Westerly- complex and South Kingstown. Challenges are greater in the more urbanized areas that are downstream of the proposed Study area.

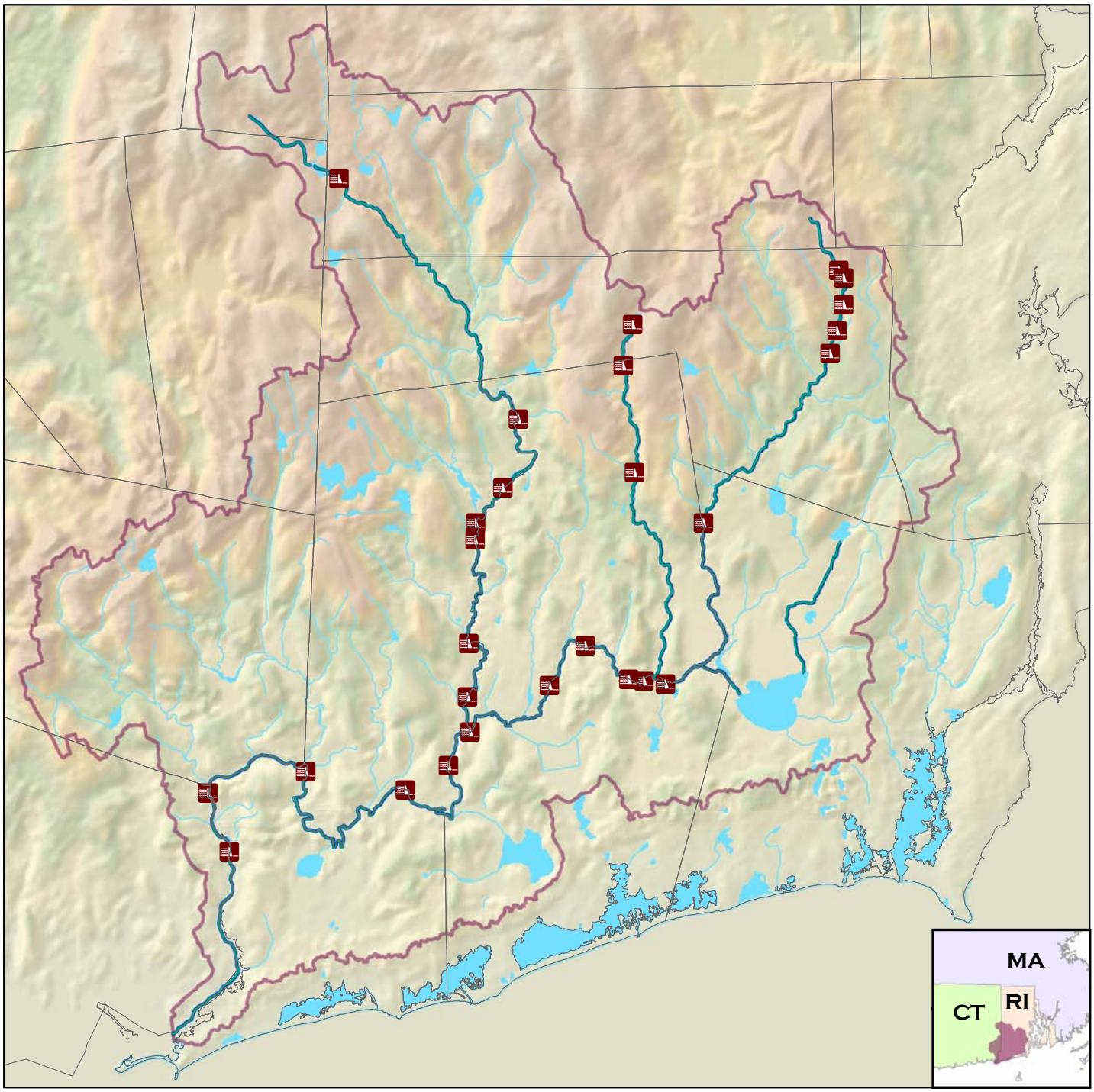
As a "Sole Source Aquifer" the region depends on the groundwater resources for all drinking water needs. Drinking water is supplied to approximately 60,000 people in two states, 14 towns and one sovereign nation. Protection of this important resource is vital since no alternative viable surface water supplies are readily available. The importance of protecting the hydrologic resources is recognized by both Connecticut and Rhode Island. The CT DEEP and RI DEM identify the surface and ground water resources as closely linked and of the highest quality compared to others in these states.

Some example indicators of high water quality include the large diversity of habitat, including a cold-water river habitat that supports aquatic life such as freshwater mussels and native brook trout. Also indicative of high water quality is the existence of river invertebrates, reptiles and amphibians.[17]

16 "Department of the Interior and Agriculture Interagency Guidelines for Eligibility, Classification and Management of River Areas," published in the Federal Register (Vol. 47, No. 173; September 7, 1982, pp. 39454-39461).

17 The Pawcatuck Watershed Report, 1999, Pawcatuck Watershed Partnership, printed by EPA. Region 1, New England.

Wood-Pawcatuck Watershed



Rivers Proposed for Wild & Scenic Designation Study & Location of Dams

Data: RIGIS, USGS
Map by WPWA
June 2013

0 1 2 4
Miles

The Pawcatuck River watershed has the following Water Quality Classifications:

Connecticut segments[18],[19],[20]:

Pawcatuck River: Classification B, B*, SB; Category 5
Wood River: Classification A; Category 1

Rhode Island segments[21],[22]:
Fresh Water Segments:

Beaver River: Classification A; Category 2
Chipuxet River: Classification A; Category 2
Pawcatuck River: Classification B; Category 2
Queen River: Classification A; Category 2
Wood River: Classification A; Category 4A

Salt Water Segments:

Tidal Pawcatuck River: Classification SA; Category 4A

There are two municipal wastewater facilities discharging to the Pawcatuck River in the tidal portion of the river; United Water Treatment Plant in the Town of Westerly and the Stonington Waste Water Treatment Plant. Both wastewater treatment plants would likely be downstream of a Study area. Kenyon Industries in the towns of Charlestown and Richmond is the only industrial plant with a Rhode Island Pollution Discharge Elimination System (RIPDES) permit currently discharging into the Pawcatuck River. The other industry with a RIPDES permit, Bradford Dye Association, closed in early 2012.

The Charbert Dye Company property is a site with long-term ground water contamination. It is located in the Village of Alton along the Wood River, just downstream of the Alton Pond Dam and one-mile upstream of the confluence with the Pawcatuck. The contamination was discovered in 2008 when the plant closed. In the intervening years, monitoring and remediation plans were developed, and have been undertaken. The RI DEM maintains a record of activity related to this site. If a Wild and Scenic Study is undertaken for this river, this segment should be carefully evaluated for eligibility if poor water quality is an ongoing issue, or for suitability if a future cleanup would involve sediment dredging.

Overall, water quality is considered to be excellent and greatly improved from the days of textile mill waste and sewage direct discharge to the waterways. The greatest threat today is from nonpoint source pollution, resulting in segments of waterways within the watershed being included on the Rhode Island 2012 303(d) List of Impaired Waters. In particular, the tidal area of the Pawcatuck River is not supporting for contact recreation, shell fish and aquatic life. Two segments were recently de-listed due to the completion of a TMDL (Total Maximum Daily Load) for contamination by *Enterococcus*, the bacteria found in the human intestinal system that may indicate contamination by untreated sewage. Some additional causes of impairment include fecal coliform, nutrients, metals, wastewater effluent, and non-native aquatic plants. TMDL approval dates have been identified for many of the impairments.

Another challenge relates to protecting and balancing the use of the productive aquifers of the region as a clean drinking water source, and for habitat, wildlife and recreational uses. Balancing

18 Connecticut Water Quality Standards, Connecticut Department of Energy and Environmental Protection Bureau of Water Protection and Land Reuse Planning and Standards Division, 2011, http://www.ct.gov/deep/lib/deep/water/water_quality_standards/wqs_final_adopted_2_25_11.pdf

19 Connecticut Water Quality Classification Maps, Connecticut Department of Energy and Environmental Protection http://cteco.uconn.edu/map_catalog/maps/town/wtrqualcl/WtrQualCl_Stonington.pdf

20 Connecticut Integrated Water Quality Report 2012, Connecticut Department of Energy and Environmental Protection http://www.ct.gov/deep/lib/deep/water/water_quality_management/305b/2012_iwqr_final.pdf

21 Rhode Island 2012 Integrated Water Quality Monitoring and Assessment Report, 2012, Rhode Island Dpartment of Environmental Management, http://www.dem.ri.gov/programs/benviron/water/quality/pdf/iwqmon12.pdf

22 Rhode Island Water Quality Regulations, July 2006, Amended December 2010, Rhode Island Department of Environmental Management, http://www.dem.ri.gov/pubs/regs/regs/water/h2oq10.pdf

these demands in a region where new development potential is high is an ongoing priority and challenge for local river protection advocates.

Based on this initial survey of available water quality data there appears to be a large amount of baseline information available to understand the condition of the water quality in the river. The Wood-Pawcatuck Watershed Association (WPWA) in conjunction with local partners and volunteers employs a comprehensive water quality monitoring program. WPWA is currently working to make this large amount of data readily available to the public in an understandable form on their website. Rhode Island Department of Environmental Management also conducts extensive water quality monitoring under their rotating basins schedule. The Wood-Pawcatuck Watershed was most recently monitored for this program in 2012.

A more detailed review of the data is recommended to take place during a possible Wild and Scenic Study. In a technical report developed by the IWSRCC regarding "Water Quality and Quantity as Related to the Management of Wild and Scenic Rivers," it is advised that the water quality section of a Wild and Scenic Management Plan document baseline conditions, define water-related values to be protected and identify potential threats and protection opportunities. Documenting baseline water quality is important because this establishes the threshold for meeting the WSRA mandate to protect and enhance this WSR value should the river be designated.

V. Preliminary Evaluation of Suitability

For the purpose of this survey, a preliminary suitability analysis considers readily available information related to:

- Existing river protection measures
- Existing support for a Wild and Scenic Study
- Initial level of demonstrated commitment to protect river
- Preliminary assessment of whether Wild and Scenic designation might be an appropriate scheme for river protection
- Local interest in participating in the Partnership Wild and Scenic Rivers model
- Potential for water resources development

A. Existing River Protection

The IWSRCC offers guidance on evaluating the adequacy of river protection and the consistency with which designation matches other agency plans, programs or policies and in meeting regional objectives. Such analysis is conducted as a part of the larger report requirements outlined in Section 4.(a)(ii) of the WSRA. An in-depth analysis is undertaken during a Wild and Scenic Study and includes an evaluation of:

- The adequacy of local zoning and other land use controls in protecting the Wild and Scenic River values[23] by preventing incompatible development. This evaluation may result in a finding that the local zoning, when combined with other forms of existing resource protection, fulfills Section 6(c) of the Wild and Scenic Rivers Act, which in turn preempts the federal government's ability to acquire land through eminent domain if the river is designated.
- The state/local government's ability to manage and protect the Wild and Scenic River values on non-federal lands.

In conducting this evaluation a study team will determine if the communities and state have existing zoning and land use controls adequate to protect the waterways and associated ORVs, or whether additional controls are necessary to protect resources. Essential programs or regulations, together with resource objectives and recommendations for future action, are documented in the comprehensive river management plan (CRMP) developed as a part of the Study. Partnership Wild and Scenic River (PWSR) designation under the WSRA is only suitable when there is strong, broad-based support for these critical elements as included in the Plan.

Water Quality and Riverine Habitat Protection

Based on a preliminary review of some existing river-related protections currently in place, it appears that the states, towns and local organizations have responded to the challenges of ongoing growth of the area by establishing a series of regulations, policies and programs to protect the watercourses and associated resources.

For instance, at the state level, the RI DEM and the CT DEEP administer programs under the Clean Water Act such as the National Pollutant Discharge Elimination System (NPDES). Under NPDES, the DEM and the DEEP have established an MS4 General Permit that requires a permittee to develop, implement, and enforce a Stormwater Program Management Plan. Many of the communities within the watershed are regulated under the RIPDES's program.

The RI DEM's Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act provides statewide jurisdiction over the protection of freshwater

23 Wild and Scenic River values include free-flowing condition, water quality and Outstandingly Remarkable Values.

wetlands. It requires a 200 feet buffer area for watercourses that are greater than 10 feet in width and a 100 feet buffer for wetlands and watercourses of all other sizes. The CT Inland Wetland and Watercourses Act requires permitting of activities affecting inland wetlands and watercourses. In Connecticut, wetland regulation occurs mostly at the local level through municipal inland wetland commissions. It appears that all of the CT towns within the watershed have an upland review area of 100 feet or greater. The wetland regulations in both states likely provide the single most important protection for the rivers.

There is a tradition of the state, local government, local organizations and other stakeholders collaborating on conducting research and on projects that recognize, support, and protect the resources within the Pawcatuck watershed. For example the University of Rhode Island (URI) conducts research through their Watershed Watch program, and the Coastal Resources Center. The goal of the University of Rhode Island's Queen River Watershed project was to prioritize non-regulatory protection to support highly productive vernal pools and high quality upland forest.[24]

Some additional examples include:

- The RI DEM and the WPWA take a collaborative approach to monitoring for aquatic invasive species.
- The URI hosts the Rhode Island Stormwater Solutions program and works with multiple partners to address this problem, including the RI DEM, most of RI's towns and cities, the RI DOT, RI Nonpoint Education for Municipal Officials (NEMO), and the Southern RI Conservation District.

24 http://www.dem.ri.gov/programs/benviron/water/wetlands/queenrvr.htm

- The Pawcatuck Watershed Partnership brought together more than 40 organizations to produce the Pawcatuck Watershed Report.
- The Nature Conservancy of RI and CT work to protect the "Borderlands" (largest forested land tract between Boston and Washington D.C.) in cooperation with the WPWA and land trusts. Example projects include land protection efforts and helping to restore herring runs in the Pawcatuck River.[25]
- The WPWA's success with dam removal and construction of fish passage facilities has been a result of a great deal of support and funding via partners such as the USDOC's National Oceanic & Atmospheric Administration, Rhode Island Coastal Resource Management Council, USDA's Natural Resource Conservation Service, US Fish & Wildlife Service, Save the Bay, Trout Unlimited, Rhode Island Historical Preservation & Heritage Commission and the Rhode Island Department of Environmental Management.
- Conservation lands have been protected through partnerships at the local and regional level.

This extensive network of local and regional organizations working to protect and preserve watershed resources also includes groups such as land trusts, and other conservation-related organizations. Some other organizations not already mentioned include the UCONN Cooperative Extension System, Narragansett Estuary Program, Audubon Society of Rhode Island, and the Rhode Island Wild Plant Society.

B. Existing Support for Wild and Scenic Study

The locally-based Wood-Pawcatuck Watershed Association (WPWA) led the exploratory effort to determine the level of support for a Wild and Scenic Study. Representatives from the WPWA attended public meetings in the ten Rhode Island towns and four Connecticut towns that could potentially be included in a Wild and Scenic Study. Votes of support for the potential study were obtained from the governing body of each of these towns:

Rhode Island
Charlestown
Coventry
East Greenwich
West Exeter
Hopkinton
North Kingstown
Richmond
South Kingstown
Westerly
West Greenwich

Connecticut
North Stonington
Sterling
Stonington
Voluntown

Both the Rhode Island Department of Environmental Management and the Connecticut Department of Energy and Environmental Protection have sent letters of support.

C. Partnership Wild and Scenic River (PWSR) Considerations

Based on available information there seems to be a willingness among local, state, federal and other partners to participate cooperatively in a Wild and Scenic River Study, including development of a river management plan to manage, protect and enhance the Wild and Scenic River values that include free-flowing condition, water quality and Outstandingly Remarkable Values (ORVs). Key local leaders have been working for over four years to educate the public and build support for federal Wild and Scenic Study authorization. A watershed-wide PWSR

25 http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/rhodeisland/placesweprotect/pawcatuck-borderlands.xml

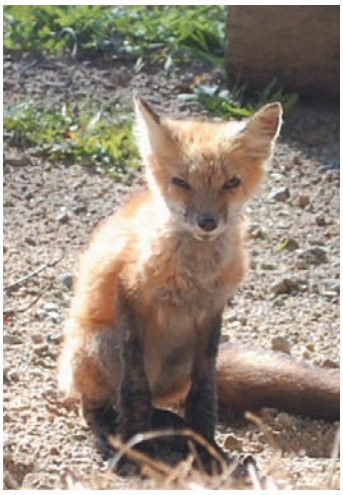
study method and management plan development would likely be an appropriate approach for the Wood-Pawcatuck due to the important network of tributaries within an ecologically intact landscape. This study approach recognizes a fully functioning watershed, such as was undertaken on the Eightmile River in Connecticut.

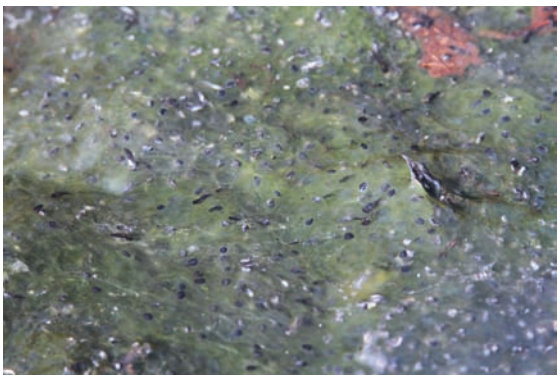
D. Hydro Project

A Federal Energy Regulatory Commission (FERC) preliminary permit application for the Swift River Project No. 12662-004 by Renewable Resources, Inc., the Potter Hill Dam owner, was rejected in 2012. This third preliminary permit application was turned down on the grounds that the applicant had not made substantial progress toward developing the project plans and that there were no extraordinary circumstances to prevent progress. The RI DEM is currently considering the purchase of the dam site. There are no other known FERC license applications or water resources development projects impending in the survey area.

E. Information Gaps/Potential Research Studies

There is typically a study budget associated with an authorized Wild and Scenic Study. This allows for research and technical analysis of the resources, river flows, recreational use surveys etc. *These "studies within the study" help establish benchmarks for the protection of ORVs, and this information will generally result in enhanced river protection even if Wild and Scenic River designation is not achieved.*[26]





Under the Wild and Scenic Rivers Act, a comprehensive river management plan (CRMP) must be prepared that addresses, "resource protection, development of lands and facilities, user capacities..." The NPS recommends that the CRMP be prepared during Studies where there are extensive non-federal lands within the area, and strong local interest in self-regulation combined with opposition to federal land acquisition. Developing a CRMP can support the suitability determination and establish the importance of multiple partners working for river protection. Beyond this responsibility, the Study team would make a determination as to what additional studies may be necessary to determine eligibility and suitability for designation. In collaboration with the Study team, the NPS would screen prospective research studies to determine if they meet the following criteria:

- How essential is the study to the overall eligibility and suitability determinations?
- How much time would the study take (studies should take less than three years, from scoping through contracting to completion)?
- Would the potential study budget be adequate to cover costs, or if not, is there an alternate source of funding?

If there is funding available through the NPS, the following potential research study list is representative of the type of research needed to conduct a Study, and characterizes the types of research that could be necessary to document eligibility and suitability. It is important to note that this list of possible studies has not been finalized nor determined to be essential for determining eligibility and suitability. If a Study is authorized, the NPS would work with the local Study team to prioritize the scope of research based on the criteria referenced above.

GIS Mapping:

- Document existing conditions.
- Document and inventory protected lands within the watershed.
- Conduct an evaluation of type and extent of existing development.
- Conduct a watershed-wide build-out analysis to determine trends in development expansion and resulting impact to the watershed.

26 Jackie Diedrich, Cassie Thomas, U.S. Forest Service and National Park Service, *The Wild & Scenic River Study Process*, (Portland, Oregon, and Anchorage, Alaska, 1999), 11.

Water quality:

- Inventory and prepare a database of existing water quality data to describe existing water quality and to determine trends. Identify location and types of impacts to surface water quality.

Hydrology:

- Conduct further integration and correlation of groundwater/surface water flow model to determine working method for balancing/limiting uses within watershed.
- Use the existing Pawcatuck Optimization Model as a tool to determine, and prioritize, improvements to dams, roadway crossing culverts, bridges, weirs, embankments, and other natural and man-made restrictions.
- Use the existing Pawcatuck Optimization Model to determine the impact of future human development within the watershed.

History and Archaeology:

- Conduct historical documentation of significant river-related existing and former mill sites.
- Document and locate significant river-related historic events, and historical structures.
- Document and locate river-related structures and features currently registered or that have the potential to be listed on the National Historical Register.

Recreation:

- Evaluate current recreational uses and recreational resources related to the river.

Dams, Ponds and Streambank Development:

- Evaluate existing dams and remnant dams to determine whether they meet the free-flowing requirements of the WSRA.
- Document and evaluate existing riverfront development, docks, and structures to determine their impact on free-flow, natural features, fisheries, and habitat.

Regulations, Plans, Programs and Policies:

- Conduct an evaluation of existing and proposed local, state, and federal regulations and policies pertaining to land use, fisheries, and the natural, recreational, cultural and historical resources within the watershed.
- Determine adequacy and consistency of existing regulations, policies and permitting in achieving the purposes of the WSRA.
- Review local, regional, and state objectives for the preservation of protected lands and determine adequacy and consistency.

VI. NPS Findings

Based on a preliminary analysis through this reconnaissance survey, the National Park Service (NPS) concludes that the Wood-Pawcatuck Watershed appears to be a good candidate for a Wild and Scenic River Study. This conclusion is founded on preliminary evidence of free-flowing river conditions and the presence of multiple natural, cultural and recreational resources with potential to meet the Outstandingly Remarkable Value threshold as defined by the Wild and Scenic Rivers Act. There is demonstrated local and regional interest and support for a study, and existing river/watershed protection elements that would support the NPS framework for a Partnership Wild and Scenic River designation. In addition, local stakeholders have indicated an initial level of interest in developing the river management plan that would be developed as a part of the Study process, and required as a part of the designation. As a part of any eventual Study, special attention regarding eligibility and suitability should be paid to existing dams in the watershed, road crossings, impounded waters and/or significant streambank alterations.

In sum, all of the elements for a successful Study process appear to be in place for the Wood-Pawcatuck River. The local stakeholders have indicated an interest in pursuing a Pawcatuck River watershed-wide study approach and the NPS concurs that this would be an appropriate study methodology for the Pawcatuck River.

If a study is authorized by Congress, the NPS believes that the use of the established Partnership Wild and Scenic River Study process, in close cooperation with the towns of Charlestown, Coventry, East Greenwich, West Exeter, Hopkinton, North Kingstown, Richmond, South Kingstown, Westerly, West Greenwich in Rhode Island, and North Stonington, Sterling, Stonington, Voluntown in Connecticut and the states of Rhode Island and Connecticut, and other local and regional stakeholders would be an effective approach.

National Park Service
U.S. Department of the Interior

Wild and Scenic River Reconnaissance Survey of the Wood-Pawcatuck Watershed