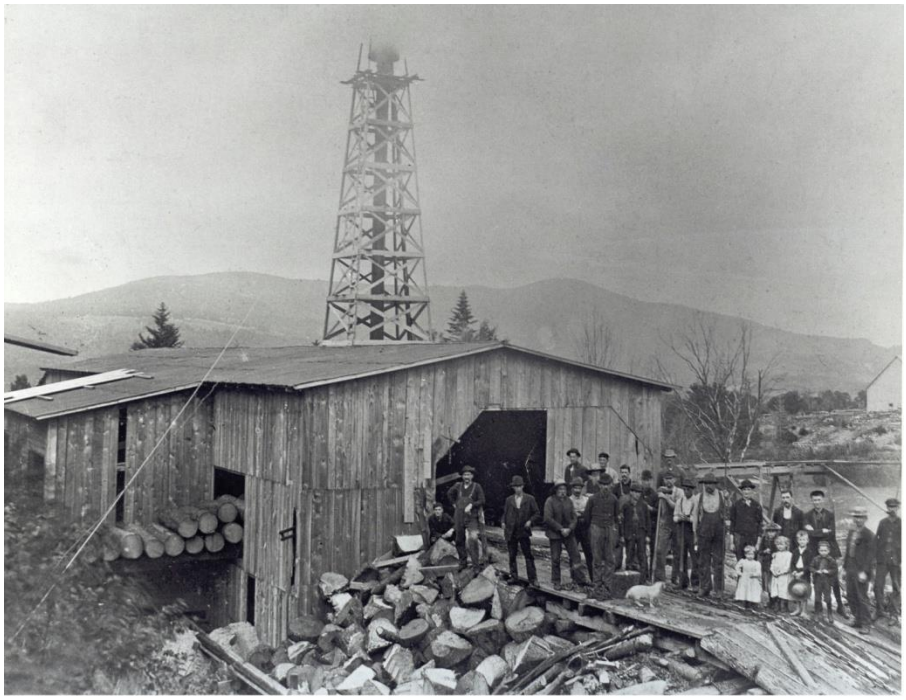
Nomination of the Ham Branch Watershed in Easton

to the

New Hampshire Rivers Management and Protection Program



Andrew Upper Mill 1890's. Barn in distance on Lane (Winter Place).

Submitted by Kris Pastoriza
on behalf of the Ham Branch Nomination Committee
Funding provided by Campbell McLaren
Historic photographs provided by Susan Schibanoff

Bald Knob and North Kinsman Mountain. Photo by Kris Pastoriza.

GIS Mapping provided by Tara Bamford of North Country Council
June 1, 2014

River Nomination Form

New Hampshire Rivers Management and Protection Program

Instructions: Before beginning any work on a river nomination, sponsors should contact the State Rivers Coordinator at the NH Department of Environmental Services. The Rivers Coordinator can provide initial guidance by identifying local and regional contacts and other sources of information and can give advice throughout the preparation of a river nomination. Refer to the publication, "A Guide to River Nominations," for a step-by-step explanation of the nomination process and a directory of federal, state, regional, and private sources of information and technical assistance. The River Coordinator's address and telephone number are: PO Box 95, 29 Hazen Drive, Concord, NH 03302-0095; (603) 271-2959.

I. NOMINATION INFORMATION

1. *Name of River*: Ham Branch Watershed, Easton.

2. *River/River Segment Location (and start/end points) and Length (miles)*:

Ham Branch River from its headwaters in Easton at 44.060275, -71.791586 north 6.1 miles to the Franconia-Easton town line.

Reel Brook from its headwaters in Easton at 44.10318, -71.76841 northwest 3.6 miles to its confluence with the Ham Branch River.

Unnamed Tributary D from its headwaters in Easton at 44.11914, -71.76787 west 0.7 miles to its confluence with Reel Brook.

Unnamed Tributary C from its headwaters in Easton at 44.126754, -71. 779108 northwest 1.3 miles to its confluence with Reel Brook.

Unnamed Tributary E from its headwaters in Easton at 44.13398, -71.81106 northeast 1.0 miles to its confluence with the Ham Branch River.

Slide Brook from its headwaters in Easton at 44.13108, -71.76225 northwest 2.4 miles to its confluence with the Ham Branch River.

Unnamed Tributary B from its headwaters in Easton at 44.12875, -71.76939 northwest 0.5 miles to its confluence with Slide Brook.

Noyes Brook from its headwaters in Easton at 44.15239, -71.80263 southeast 0.6 miles to its confluence with the Ham Branch River.

Unnamed Tributary A from its headwaters in Easton at 44.13807, -71.77415 northwest 1.1 miles to its confluence with the Ham Branch River.

Judd Brook from its headwaters in Easton at 44.14258, -71.76733 northwest 1.2 miles to its confluence with the Ham Branch River.

Flume Brook from its headwaters in Easton at 44.15427, -71.75769 northwest 0.7 miles to its confluence with Kendall Brook.

Kendall Brook from its headwaters in Easton at 44.15002, -71.76195 northwest 1.2 miles to its confluence with the Ham Branch River.

Pepper Book in Easton from 44.17521, -71.78583 near the Easton-Franconia-Sugar Hill town line southeast 1.1 miles to its confluence with the Ham Branch River.

Brooks Brook from its headwaters in Easton at 44.15655, -71.74998 northwest 1.6 miles to its confluence with the Ham Branch River.

In total, 23.1 miles of rivers and streams in the Ham Branch watershed are being nominated for inclusion into the New Hampshire Rivers Management and Protection Program. See Figure 1. Coordinates described in NAD 1983 State Plane New Hampshire.

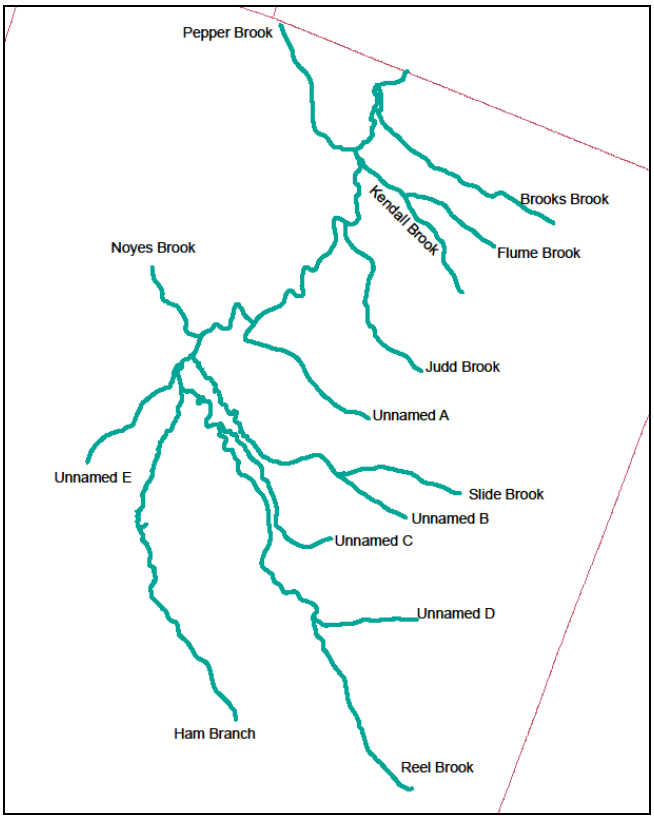


Figure 1 – Ham Branch River and tributary streams in Easton, NH.

3. (a) *Sponsoring Organization or Individual*: Easton River Committee

(b) *Contact Person*: Kris Pastoriza

(c) *Address*: 294 Gibson Road, Easton, NH 03580

(d) *Daytime Telephone Number*: 603-823-9063

II. SUMMARY: RESOURCES OF STATEWIDE OR LOCAL SIGNIFICANCE

Explanation: In order to be eligible for designation to the Rivers Management and Protection Program, a river must contain or represent either a significant statewide or local example of a natural, managed, cultural, or recreational resource.

Instructions:

By checking the appropriate boxes below, indicate the resource values that you believe are present in the nominated river and its corridor and whether you believe these values are present at a level of significance that is statewide or local. If the value is not present, leave the box blank.

Natural Resources

	Value Present/ Local Significance	**Value Present/ Statewide Significance**
Geologic or Hydrologic Resources	X	X
Wildlife Resources	X	X
Vegetation/Natural Communities	X	X
Fish Resources	X	X
Rare Species or Habitat	X	X
Water Quality	X	X
Open Space	X	X
Natural Flow Characteristics	X	X

Managed Resources

	Value Present/ Local Significance	**Value Present/ Statewide Significance**
Impoundments		
Water Withdrawals/Discharges		
Hydroelectric Resources		

Cultural Resources

	Value Present/ Local Significance	**Value Present/ Statewide Significance**
Historical/Archaeological Resources	X	
Community River Resources	X	

Recreational Resources

	Value Present/ Local Significance	**Value Present/ Statewide Significance**
Fishery Resources	X	
Boating Resources		
Other Recreational Resources	X	X
Public Access	X	

Other Resources

	Value Present/ Local Significance	Value Present/ Statewide Significance
Scenic Resources	X	X
Land Use	X	X
Land Use Controls	X	X
Water Quantity	X	
Riparian/Flowage Rights	X	
Scientific Resources	X	

Briefly describe the most important resource values that are present in the nominated river and why you believe these values are significant from either a statewide or local perspective. For example, if the river contains a segment of whitewater that attracts kayakers from throughout the state and is identified in a regional boaters' guide as a premier whitewater boating segment, you should identify recreational boating as a significant statewide resource and include one or two sentences in support of this statement. In addition, if you feel that a resource value is threatened, explain why.

Through the Easton valley flows the Ham Branch River, whose headwaters are located around 2,300 feet in elevation on Beech Hill, just south of the power-line that cuts through the community. As the Ham Branch flows north toward Franconia, it is fed by approximately sixteen tributary streams. Six of these streams flow from the Cole Hill/Cooley Hill ridgeline which runs along the western border of Easton, and ten of them flow from the Kinsman Ridge, which runs along its eastern border. Seven of these streams are second order streams at their confluence with the Ham Branch. The Ham Branch itself becomes a third order stream at the confluence of the Ham Branch and Reel Brook and continues as a third order stream to the Easton/Franconia town line. Four of the streams that flow into the Ham Branch are officially named on the US Geological Survey topographic maps (Kendall Brook, Judd Brook, Slide Brook and Reel Brook); these four streams flow off the Kinsman Ridge. Slide and Reel Brooks have headwaters that extend as high as 3,200 feet and possibly higher. See Appendix B, Map 2 for an illustration of the rivers and streams included in the nomination.

From Paine Road eastward up the flanks of Kinsman Ridge, ninety percent of the watershed corridor is comprised of Highest Ranked Habitat in New Hanpshire, as is the ninety percent of the Reel Brook watershed corridor that lies in the White Mountain National Forest (WMNF), and the portion of the Ham Branch west of N.H. Route 116. Fifty percent of the total watershed corridor is rated Highest Ranked Habitat in New Hampshire. One half mile of Reel Brook east of N.H. Route 116, on the Darvid Farm, is within Highest Ranked Habitat in Biological Region and the fields through which it runs are farmlands of statewide importance. Overall, two percent of

the river corridor is Highest Ranked Habitat in Biological Region. Another two miles of river corridor west of Paine Road and N.H Route 116 are ranked as Supporting Landscapes, which accounts for five percent of the watershed (NHF&G 2006). Three and a half miles of river corridor lie within private conservation easements.

Roughly forty-six percent of the Ham Branch watershed is within the White Mountain National Forest. Easton has no business zoning and the only industrial presence in the town is the Northeast Utilities Right-of-Way which contains a single circuit 115Kv electrical line on pairs of 50' wooden poles. Approximately ninety-two (92) percent of Easton is forested.

The Judd Brook corridor east of Paine Road and the upper two thirds of Kendall/Flume Brook corridors pass through Northern Hardwood Conifer Forest, as does the Reel Brook drainage east of Reel Brook Road, except for the highest half mile of headwaters which lies in High Elevation Spruce Fir forest.

From N.H. Route 116 west to their junction with the Ham Branch, the Reel Brook and Slide Brook drainages pass through one mile of wetland and peatlands that overlie a stratified drift aquifer.

The Ham Branch east of N.H. Route 116 passes through predominantly lowland spruce-fir, and west of N.H. Route 116 to the Reel Brook junction it passes through a mile and a half of wet meadow/shrub woodland.

One half mile south of the Franconia border, the Ham Branch borders a forest floodplain. Above its junction with Brooks Brook considerable sediment was deposited during the flooding produced by Tropical Storm Irene.

The Easton valley is also an alluvial fan, probably of prehistoric origin and a classic valley-fill sand and gravel aquifer that has been mapped by the United States Geological Survey (USGS). In less technical terms, during the last ice age a glacier "ground off the mountains and scoured out this valley, then as it melted it deposited the rocks and soil...Glacial runoff continued to wash this soil, resulting in a basin of mostly fine textured soils. These soils are excellent growing soils and comprise much of the prime agricultural soils in Easton." (Falkenham 2012, pg. 6)

The Easton valley contains 1,955 acres of land classified as Prime Farmland, Farmland of Statewide Importance or Farmland of Local Importance. Though the majority of these acres have reverted to forest, approximately 250 acres remain in pasture and provide important habitat, scenic vistas and livestock grazing. They are also a resource for the revival of local agriculture, a small but important movement in the town.

New Hampshire Fish and Game's 1988 deer yard map (Appendix B, Map 7) shows the forest areas directly around Judd Brook, the unnamed stream shown south of it, the lower half of Slide Brook and the lower half of Reel Brook as important areas for deer in Easton.

The Reel Brook Trail is within the Reel Brook corridor for all of its three miles. The trail is maintained by the Appalachian Mountain Club and local and non-resident volunteers. It is generally accepted as the route Easton's first permanent settler, Nathan Kinsman, followed from North Woodstock to get to his pitch in the Easton Valley in the early 1780's. From Easton it leads to the Appalachian Trail, which has several views of the Easton Valley as it heads north along the Kinsman Ridge. Bald Knob, off of the Kinsman Trail, is a very popular hike with extensive views of the Easton and Franconia valley and watershed. A local landowner recently donated land for a safer parking area and the first half mile of a new trail.

The Ham Branch and its tributaries are not just important and unusually pristine features; they are also the lifeblood of the valley. The locations of its streams determined the patterns of

settlement and roads in the valley. Houses and mills were placed near these tributary streams, and fields were cleared on the soils they brought down from the mountains. Springs and spring-houses are still scattered in the valley, and one foundation between Reel Brook and Slide Brook contains a well within it. Subsistence activities took place in the nearby fields and woods, but the dwelling places of the residents were established within the river corridor.

Anyone following the river and streams will find evidence of the history of Easton: the mills, logging activity, and farming practices that supported life in the nineteenth and twentieth centuries. Appendix C, the River Narrative, documents important parts of Easton's and the Ham Branch River's history.

The river corridor is home to rare plants, animals and natural communities including: Lindley's aster, mountain firmoss, pine martens, high-gradient rocky riverbank systems, medium level fen systems, high-elevation spruce-fir forest, and semi-rich mesic sugar maple forests. The Ham Branch River is free-flowing throughout Easton and it supports a variety of fish and other wildlife, aquatic and terrestrial. Though invasive species exist, they are not yet threatening native species and ecosystems. As in most towns, development is a threat to the river, but less than half a percent (0.5%) of the river corridor has been developed as residential property.

Designation would support the Town's land conservation efforts. Designation would also educate abutters on best practices to protect the river, and the River Corridor Management Plan could aim for more protective regulations for the watershed. Designation could also support the Town's goal for zoning measures that cluster housing to preserve open space.

State and federal pre-emption of local zoning for siting of energy projects is also a great threat to the watershed. Designation of the Ham Branch River and its tributaries would give them greater protection from the potential impacts which may result from the Northern Pass and other potential expansions of the existing Public Service of New Hampshire/Northeast Utilities (PSNH/NU) Right-of-Way, or from industrial wind turbine siting in the White Mountain National Forest. The Ham Branch River and its tributary streams are rare natural headwater features contained almost entirely within one town. Their listing in the Rivers Management and Protection Program could be the first step in designating the watershed from the Easton-Franconia border to the Gale River and beyond to the designated Ammonoosuc River.

III. COMMUNITY AND PUBLIC SUPPORT

Explanation: The level of community and other public support which is demonstrated for a river nomination will be an important factor in determining whether that river will be recommended for legislative designation.

Such support may be shown by the adoption of a town resolution, a letter from selectmen, master plan excerpts, or documented support from other groups, either public or private (if private, explain the group's purpose and who is represented).

Instructions: Describe the type of community and other public support that exists for the river nomination and attach appropriate documentation. Include copies of any letters of support from local elected and appointed officials. Include documentation of notification of the nomination to elected public officials of all municipalities through which each nominated river or segment flows.

Letters of support are included in Appendix A:

- The Easton Selectmen supported Warrant Article #2 "Formation of Easton River Committee to Nominate the Ham Branch under the New Hampshire Rivers Management and Protection Program." This article passed unanimously at the Easton 2014 Town Meeting.
- The Easton Conservation Commission supports the nomination.
- The Society for the Protection of New Hampshire Forests supports the application as Conservation Easement holders on the 386 acre Pastoriza/Ward property, which contains 3 miles of river frontage, on Slide Brook, Reel Brook and the Ham Branch River. This easement permits no subdivision, pesticide or herbicide use or sludge spreading as well as requiring all timber harvesting to be under the supervision of a forester.
- The USDA Natural Resources Conservation Service supports the application as easement holder on the Stever property which contains ½ mile of frontage on Judd Brook.
- The Ammonoosuc Conservation Trust supports the application.
- New Hampshire Fish & Game supports the application.
- Grafton County Conservation District supports the nomination.
- New Hampshire Rivers Council supports the nomination
- The Ammonoosuc Chapter of Trout Unlimited supports the nomination.
- Steve Sabre, resident of Franconia and founder, former president and former director of the Ammonoosuc Chapter of Trout Unlimited, supports the nomination.
- Roy R. and Deborah P. Stever, riparian landowners along the headwaters of Judd Brook, support the nomination.
- The White Mountain National Forest supports the nomination.
- The Appalachian Mountain Club supports the nomination.
- The Ammonoosuc River Local Advisory Committee supports the nomination.

The Town of Easton's Master Plan (2010) records strong support for conservation measures of all kinds. The majority of respondents (65%) supported town acquisition of property and development rights for conservation to preserve the rural nature of the town. Ninety-six percent (96%) of respondents agreed or strongly agreed that the town should control the rate of growth. Protection of the Ham Branch and its wetland is identified in the Master Plan as a priority. It also states:

> To maintain the high quality of Easton's surface waters and its healthy aquatic ecosystems, it is necessary to both keep human activities separated from the town's rivers, brooks and wetlands, and to maintain a vegetated buffer around these surface waters. Shoreline vegetation and the layer of organic matter that builds up underneath it slow down storm-water runoff and trap sediment and other pollutants before they reach the river or brook. Vegetation also provides for necessary shade for aquatic species and slows the advance of some harmful invasive species.

Easton's zoning defines a Wetlands Conservation District that specifically addresses wetlands protection:

> An Aquifer Protection District manages land uses over high potential stratified drift aquifers to ensure toxic and hazardous materials do not contaminate the town's important groundwater

resources. In addition, a Flood Hazard Zone protects the community from the health, safety, financial and environmental impacts of development in the floodplain. The Zoning Ordinance protects the town's wetlands from most development activities with a Wetlands Conservation District, and provides that wetlands can form no more than 25% of the 3 acre minimum lot size. In addition, new lots must have at least one acre of contiguous land that is neither wetland nor over 25% slope.

Recommendations in Easton's adopted 2010 Master Plan include:

> Ensure the protection of wetlands and other surface waters through separation of human activities from shorelines and maintenance of vegetated buffers.
>
> Ensure the protection of the quality and quantity of groundwater supplies for the next generation of residents to be served by on-site wells. This includes review of the town's aquifer protection ordinance to ensure it is up-to-date.
>
> Ensure that all development incorporates best management practices (BMPs) for storm-water management.
>
> Continue to prohibit development and other loss of flood storage in wetlands and other mapped flood storage areas. (p. 40)
>
> Provide homeowner education on the proper care of septic systems and wells to ensure continued high quality water supply. (p. 42)

Easton's Natural Resource Inventory gives recommendations for water resource protection including land conservation, wetlands planning, fish surveys, road maintenance guidelines and timber harvesting rules (Falkenham 2012, pp. 24-25). These recommendations are described more fully in Section VII.5(c) of this report.

Finally, the Towns of Easton, Franconia and Sugar Hill fully supported the purchase of the 750 acre parcel that has become the Cooley-Jericho Community Forest.

IV. OTHER SUPPORTING INFORMATION

Explanation: In addition to the information provided on this nomination form, sponsors are encouraged to submit any other information which you believe will support the nomination of the river. This information may include a visual presentation, for example, a slide program or a map showing the location of significant resources, or studies and reports on the river.

Instructions: List what, if any, additional supporting information has been submitted with this river nomination.

Attached to this nomination as appendices:

Appendix A – Documentation of Public Support

Appendix B – Maps

Appendix C – River Narrative and Historic Photos

V. RIVER CLASSIFICATIONS

Explanation: Each river or river segment that is designated by the state legislature will be placed into a river classification system. This classification system consists of four categories: natural, rural, rural-community and community rivers. Refer to Appendix A in the Guide to River Nominations, for a complete description and explanation of the river classification system and the instream protection measures which have been adopted by the state legislature for each classification. In this part of the nomination form, DES and the state Rivers Management Advisory Committee are interested in learning which river classification(s) you believe is most appropriate for your river.

Note: If tidal or tidally influenced sections of river are included in your nomination be sure to include the recommended downstream extent of the section(s) suggested by the NH Fish and Game Department and the Piscataqua Regional Estuaries Project.

(a) General Description

☒ Natural Rivers - The river or segment is free-flowing and characterized by high quality natural and scenic resources. The river shoreline is in primarily natural vegetation and the river corridor is generally undeveloped and development, if any, is limited to forest management and scattered housing.

☐ Rural Rivers - The river or segment is adjacent to lands which are partially or predominantly used for agriculture, forest management, and dispersed or clustered residential development. Some instream structures may exist, including low dams, diversion works and other minor modifications.

☐ Rural-Community Rivers - The river or segment that flows through developed or populated areas of the state and which possesses existing or potential community resource values such as those defined in official municipal plans or land use controls. Such a river has mixed land uses in the corridor reflecting some combination of open space, agricultural, residential, commercial and industrial land uses. It is readily accessible by road or railroad and may include impoundments or diversions.

☐ Community Rivers - The river or segment flows through populated areas of the state and possesses actual or potential resource values, with some residential or other building development near the shoreline. The river or river segment is readily accessible by road or railroad, and may include some impoundments or diversions.

(b) Length

☒ The river or segment is at least 5 miles long. (Natural Rivers)
☐ The river or segment is at least 3 miles long. (Rural & Rural-Community Rivers)
☐ The river or segment is at least 1 mile long. (Community Rivers)

(c) Water Quality

☒ The actual water quality of the river or segment meets Class B standards under the state's water quality standards. (Natural Rivers)

☐ The actual water quality of the river or segment meets Class B standards under the state's water quality standards, or has the potential for restoration to that level. (Rural, Rural-Community & Community Rivers)

(d) Distance to Roads

☒ The minimum distance from the river shoreline to a paved road open to the public for motor vehicle use is at least 250 feet, except where a vegetative or other natural barrier exists which effectively screens the sight and sound of motor vehicles for a majority of the length of the river. (Natural Rivers)

☐ There is no minimum distance from the river shoreline to an existing road. Roads may parallel the river shoreline. (Rural, Rural-Community & Community Rivers)

2. *Based on the boxes checked above, and your knowledge of the river or segment, identify those segments of the river that you believe should be classified as Natural, Rural, Rural-Community, or Community River segments. Be sure to include the start and end point of each segment and the length of the segment in miles (for example: Natural River: headwaters, Z miles, to the Town of ABC town line; Rural River: Town of ABC town line, Y miles, to the state border). Although a river or segment may be given more than one classification, the number of differently classified segments should be kept to a minimum. If your recommendation is incompatible with any of the above-listed criteria for a particular river classification, and you believe the classification is nevertheless appropriate and justified, explain why.*

The Ham Branch River and its watershed tributaries in Easton including: Reel Brook, Slide Brook, Noyes Brook, Judd Brook, Kendall/Flume Brook, Pepper Brook, Brooks Brook, and five unnamed tributaries.

(a) Ham Branch River--as a natural river from its headwaters at 1,620' elevation in Easton (44.060275, -71.791586) 6.1 miles to the Franconia-Easton town line.

(b) Reel Brook--as a natural river from its headwaters in Easton at 2,000' elevation (44.10318, -71.76841) 3.6 miles to its confluence with the Ham Branch River.

(1) Unnamed Tributary D--as a natural river from its headwaters in Easton at 2,000' elevation (44.11914, -71.76787) 0.7 miles to its confluence with Reel Brook.

(2) Unnamed Tributary C--as a natural river from its headwaters in Easton at 1,500' elevation (44.126754, -71. 779108) 1.3 miles to its confluence with Reel Brook.

(c) Unnamed Tributary E--as a natural river from its headwaters in Easton at 44.13398, -71.81106 1.0 miles to its confluence with the Ham Branch River.

(d) Slide Brook--as a natural river from its headwaters in Easton at 1,900' elevation (44.13108, -71.76225) 2.4 miles to its confluence with the Ham Branch River.

(1) Unnamed Tributary B--as a natural river from its headwaters in Easton at 1,700' elevation (44.12875, -71.76939) 0.5 miles to its confluence with Slide Brook.

(e) Noyes Brook--as a natural river from its headwaters in Easton at 44.15239, -71.80263, 0.6 miles to its confluence with the Ham Branch River.

(f) Unnamed Tributary A--as a natural river from its headwaters in Easton at 44.13807, -71.77415, 1.1 miles to its confluence with the Ham Branch River.
(g) Judd Brook--as a natural river from its headwaters in Easton at 1,550' elevation (44.14258, -71.76733) 1.2 miles to its confluence with the Ham Branch River.
(e) Kendall and Flume Brooks
(1) Kendall Brook--as a natural river from its headwaters in Easton at 1,500' elevation (44.15002, -71.76195) 1.2 miles to its confluence with the Ham Branch River.
(2) Flume Brook--as a natural river from its headwaters in Easton at 1,550' elevation (44.15427, -71.75769) 0.7 miles to its confluence with Kendall Brook.
(f) Pepper Brook--as a natural river from the Easton-Franconia border (44.17521, -71.78583) 1.1 miles to its confluence with the Ham Branch River in Easton.
(g) Brooks Brook--as a natural river from its headwaters in Easton at 1,700' elevation (44.15655, -71.74998) to its confluence with the Ham Branch River.

Note: Coordinates described in NAD 1983 State Plane New Hampshire.

VI. Maps

A map of the river must be appended to this resource assessment. This map should be taken from a U.S. Geological Survey quadrangle (scale 1:24,000) or equivalent in accuracy and detail. GIS maps produced to show river-related resources can serve this purpose. Include an inset or locator map showing the location of the river or segment within the state.

Attached as Appendix B:

Map 1: Ham Branch River Segments Proposed for Nomination, with Buffer
Map 2: Ham Branch River Segments Proposed for Nomination, without Buffer
Map 3: Ham Branch River Key
Map 4: Pastoriza/Ward Conservation Easement, Easton, NH
Map 5: Easton, NH Flood Plain Map
Map 6: Easton, NH Agricultural Soils
Map 7: Easton, NH Deer Yards
Map 8: Ham Branch River Stratified Drift Aquifer
Map 9: Ham Branch River Stratified Drift Aquifer Transmissivity
Map10: New Hampshire Lynx Protection Zone
Map 11: Stever Conservation Easement, Easton, NH
Map 12: White Mountain National Forest and Conserved Lands in Easton, NH
Map 13: Highest Ranked Wildlife Habitat by Ecological Condition in the Ham Branch Watershed
Map 14: Wildlife Habitat Landcover in the Ham Branch River Watershed
Map 15: Land Use in the Ham Branch River Watershed

VII. RESOURCE ASSESSMENT

1. Natural Resources

(a) Geologic Resources

Briefly describe the significant geologic resources of the river and its corridor, including any unique or visually interesting features such as waterfalls, unusual rock formations, and areas of rapids. If you are unable to include such features, then simply describe the bedrock geology map. Consider geologic resources on the basis of natural history, visual, and economic interest. Indicate if the state geologist or a national or state resource assessment has identified these geologic resources as significant at a national, regional (New England), state, or local level.

The most obvious geological resources of the river are the Kinsman Ridge and Cooley-Cole Ridge, without which the watershed would not exist. The Kinsman Ridge Trail is a popular hike and part of the Appalachian Trail, providing views of Franconia Notch, the Easton Valley and much of Ham Branch Watershed. A less well-known hiking trail goes up to Cooley Hill, close to the southwestern boundary of the watershed, providing limited views of the valley and Mt. Madison.

Several of the streams in the watershed provide natural routes for trails. Two former mill ponds at the Town center, which provided water power for mills in the 1800s, have become local swimming holes where the bedrock provides natural waterslides and sunning surfaces.

Bald Knob, off the Kinsman Trail, is a very popular hike, providing a tremendous view of the Kinsman Range above and the Easton and Franconia Valleys below, with only a moderate hike. Just below the spur path to Bald Knob is a short path to the top of Howlands/Kinsman Flume, a large and deep dike with a waterfall that has been recorded in stereographs from the late 1800s but is rarely viewed from the bottom at present.

One of the more notable geological features of the Ham Branch watershed is the stratified-drift aquifer which lies under a large portion of it:

> The Ham Branch Brook aquifer underlies 3.8 mi^2 of the narrow Ham Branch Brook Valley in Easton and Franconia and is long relative to its width (almost 7 mi long and less than 1 mi wide) …. The mode of deposition is not well defined, but at least three distinct sequences of deposits have been identified in the aquifer. Thick, fine-grained lake-bottom deposits compose the southern end of the aquifer west of New Hampshire Route 116. Here, the aquifer is drained by Reel and Slide Brooks …. These deposits formed in the waters of glacial Lake Franconia when the ice margin occupied most of the Ham Branch Brook Valley. USGS observation well EBS-1 penetrated 68 ft of progressively finer lake-bottom deposits beneath ice-contact glaciofluvial deposits. Many of the domestic wells in this area are shallow dug wells that derive water from the coarse-grained aquifer material overlying the lake-bottom sediments ….
>
> At some time in the glacial history of the aquifer area, ice entered the Ham Branch Brook Valley from the south and, while stationary near present-day Easton Village, a northward-trending moraine was deposited consisting of thick stratified-drift deposits at the southern end of the valley …. Coarse-grained material consisting of glaciofluvial deposits formed in glacial Lake Franconia at the northern end of the aquifer area. This is the most productive part of the Ham Branch Brook aquifer.
>
> Saturated thickness is greatest in the center of the valley, exceeding 80 ft at the northern end and exceeding 120 ft at the southern end of the aquifer area …. USGS observation wells FDW-3 and

FDW-4 were drilled in the northern end of the area …. Each well penetrated 68 ft of coarse-grained aquifer material overlying thin (4 to 8 ft) very fine to medium-grained lacustrine deposits. Transmissivity, estimated from grain-size distribution of aquifer materials collected during test drilling was 12,000 ft^2/d for well FDW-3 and 6,000 ft^2/d for well FEW-4.Currently (1993), the aquifer is not used for public supply; however, the aquifer has high potential to yield water and was selected to demonstrate how water availability can be evaluated by use of the analytical ground-water-flow model discussed in the section on "Estimation of Water Availability for Selected Aquifers. (Flanagan 1996, pp 40-41)

(b) Wildlife Resources

(1) List the species of mammals, birds, reptiles and amphibians commonly found in the river and river corridor.

Birds: Goldfinch, Kingfisher, Common Yellowthroat, Chestnut-sided Warbler, Saw Whet Owl, Barred Owl, Great Horned Owl, Redpoll, Nuthatches, Yellow Warbler, Black-throated green warbler, Common Merganser, Spotted Sandpiper, Woodcock, Grouse, Wild Turkey, Grackle, Crow, Raven, Hermit Thrush, Veery Thrush, Wood Thrush, Northern Shrike, Broad-winged Hawk, Red-tailed Hawk, Kestrel, Barn Swallow Chimney Swift, Purple Martin, Cedar Waxwing, Golden-crowned Kinglet, Phoebe, Song Sparrow, Northern Shrike, Broad-winged Hawk, Red-tailed Hawk, Kestrel, Barn Swallow Chimney Swift, Purple Martin, Cedar Waxwing, Golden-crowned Kinglet, Phoebe, Song Sparrow, Pileated Woodpecker, Hairy Woodpecker, Downy Woodpecker, Flicker, Bluebird, Robin, Blue Jay.

Reptiles & Amphibians: Eastern Newt *(Notophthalmus viridescens)*, Red-backed Salamander *(Plethodon cinereus*), Spotted Salamander (*Ambystoma maculatum)*, Garter Snake *(Thamnophis sirtalis)*, Ringneck Snake *(Diadophus punctatus*), Painted Turtle *(Chrysemys picta)*, Spring Peeper *(Hyla crucifer*), Gray Treefrog *(Hyla versicolor*), Pickerel Frog *(Rana palustris*), Green Frog *(Rana clamitans)*, American Toad *(Bufo americanus)*, Smooth Green Snake *(Opheodrys vernalis)*, Northern Red-Bellied Snake *(Storerea occipitomaculata occipitomaculata).*

Invertebrates: Red Milkweed Beetle (*Tetraopes tetraopthalmus*), Firefly *(Photuri*s *pennsylvanicus)*, June-bug *(Phyllosphaga sp.)*, Japanese Beetle *(Popillia japonica)*, Rose chafer (*Macrodactylus subspinosis)*, Whirligig Beetle *(Dineutus sp.)*, Small Milkweed bug *(Lygaeus Kalmii)*, Green lacewing *(Chrusopa sp.*), Water strider *(Gerris remigis)*, Earwig *(Forficula auricularia*), Snowflea *(Achorutes nivicola)*, Canada darner (Aeshna c*anadensis*), Deer tick (*Ixodes dammiai*), Daddy long-legs (Leiobunum sp.) Pillbug *(Armadillidium*), Freshwater leech *(Macrobdella decora*), Earthworm *(Lumbricus sp.*), Northern Paper Wast *(Polistes fuscatus)*, Eastern Yellow Jacket *(Vespula maculifrons*), Bald-faced Hornet *(Vespula maculata*), Bumble Bee (*Bombus pensyllvanicus)*.

Moths & Butterflies: Eastern Tiger Swallowtail *(Papilio glaucus*), Cabbage White (*Picris rapae*), Clouded sulpher *(Colias Philodice*), Luna moth *(Actias luna)*, Cecropia moth *(Hyalophora cecropia*), Wooly Bear moth *(Isia isabella*), Monarch *(Danaus pletippus)*, Viceroy *(Limenitis archippus).*

Mammals: Moose, White-tailed Deer, Black Bear, Fisher, Beaver, Coyote, Mink, Otter, Least

Weasel, Red Squirrel, Porcupine, Bobcat, Snowshoe Hare, Red Fox, Pine Marten, Skunk, Raccoon, Woodchuck, Muskrat, Chipmunk, Meadow Vole, Star-nosed Mole, Southern Red-backed Vole, Deer Mouse, Southern Flying Squirrel, Eastern Red Bat, House Mouse, Norway Rat.

List any endangered or threatened animals that are supported by the river and river corridor environment. Include location, if known. Check whether these animals are endangered [E] or threatened [T] species and if they are significant at a national [N] or state [S] level.

> Wildlife species in need of conservation that may exist in the wetlands and vernal pools of Easton: American Bittern, **Coopers Hawk, Northern Leopard Frog, American Black Duck, Eastern Towhee, Northern Goshawk, American Woodcock**, Eastern Box Turtle, Purple Finch, **Blanding's Turtle**, Eastern Hognose Snake****, Spruce Grouse, **Black Racer*, Eastern Meadowlark**, Rusty Blackbird, **Bay-Breasted Warbler**, Great Blue Heron, Three Toed Woodpecker*, **Bobcat**, Golden Winged Warbler, **Wood Turtle, Canada Lynx*****, **Northern Harrier****, **Blue Spotted Salamander**, Bull Frog, Damselflies and Dragonflies, Eastern Garter Snake, Fairy Shrimp, Fowlers Toad, Gray Tree Frog, Green Frog, **Jefferson Salamander, Marbled Salamander**,** Pickerel Frog, Red-Spotted Newt, Snapping Turtle, Spring Peeper, **Spotted Turtle**, Wood Frog, **Wood turtle.** *(Species shown in **bold letters** are species identified by the New Hampshire Wildlife Action Plan as having the greatest need for conservation; *State threatened species, **State endangered species, ***State endangered and federally threatened species.)* (Falkenham 2012, p.30)

Canada Lynx has been confirmed in the WMNF in Lincoln, near the Easton border. Bobcats have been sighted in the river corridor.

List significant wildlife habitat which is supported by the river or to which the river is integral, for game and non-game wildlife populations. Identify if the habitat has been determined to be exceptionally diverse, very diverse, or moderately diverse by the NH Fish and Game Department or the U.S. Fish and Wildlife Service.

From Paine Road eastward up the flanks of Kinsman Ridge, ninety percent of the watershed corridor is comprised of Highest Ranked Habitat in N.H., as is the ninety percent of the Reel Brook watershed corridor that lies in WMNF, and the portion of the Ham Branch westerly of N.H. Route 116. Fifty percent of the total watershed corridor is rated Highest Ranked Habitat in New Hampshire. One half mile of Reel Brook east of N.H. Route 116, on the Darvid Farm, is within Highest Ranked Habitat in Biological Region and the fields through which it runs are farmlands of statewide importance. Overall, two percent of the river corridor is Highest Ranked Habitat in Biological Region. Another two miles of river corridor west of Paine Road and N.H Route 116 are ranked as Supporting Landscapes, as is five percent of the watershed (NHF&G 2006). Three and a half miles of river corridor lie within private conservation easements.

(4) Determine if the river corridor is important for the movement of wildlife between large habitat areas. If it is, explain why.

If northern hardwood forests, lowland spruce fir forests, emergent wetland, and grasslands are defined as large habitat areas, the answer is yes. These are large blocks of unbroken land that have micro-habitats embedded in them. Several feeder streams to the Ham Branch River start in

the WMNF in northern hardwoods. Most of the watershed traverses through beaver/alder meadows, lowland spruce fir, and passes grasslands on its way to Franconia. Any animal that uses two or more of these habitats (beaver, muskrat, bear, waterfowl, woodcock etc.) would use the river as a corridor for movement. Woodcock probably use it frequently since the Easton Valley, especially between Reel Brook, Slide Brook and the Ham Branch, offers at least three if not four of the habitats they require. Black Bear use the river as a corridor, especially females who want to feed young and stay out of sight. The Ham Branch watershed serves the needs of wetland and riparian wildlife, both migratory and non-migratory (beaver, muskrat, otter, woodcock, bear, moose, mink, etc.). The Ham-Branch is a critical corridor because it spans so many different and important habitats in Easton, as well as the grassland areas in Franconia.

There are likely some wood ducks and other small-water-body ducks making a summer home in the beaver ponds formed by the Ham Branch. If they are not living there they are at least using them as feeding/resting grounds during migration, though the Ham Branch is probably not a major migratory corridor for them.

The stream corridor is also a connecting link between the Kinsman's ridge area and the Connecticut River basin. Both of those are different large habitat areas (e-mail communication with Dave Falkenham, Grafton County forester).

The greatest barrier to wildlife movement is NH Route 116.

(c) Vegetation/Natural Communities

(1) *List the plant species commonly found in the river and river corridor.*

Wildflowers: Northern Blue Flag *(Iris versicolor),* Swamp Aster *(Aster puniceus*), Closed Gentia *(Gentiana andrewsii*), Purple Trillium (*Trillium erectum*), Purple fringed orchid *(Plantanthera psylodes),* Beech drops *(Epifagus virginiana*), Water avens *(Geum rivale),* Bluets *(Hedyotis caerulaca*), Pitcher plant *(Sarracenia purea),* Joe Pye weed *(Eupatorium maculatum*), Marsh St. Johnswort (*Hypericum virginicum*),Swamp thistle *(Corsium muticum*), Bearberry *(Arctostapholys uva-ursi),* Dogmint *(Satureja vulgaris),* Lowbush blueberry), Northern Willow Herb (*Epilobium glandulosom*), Lady-slipper *(Cypripedium acaule),* Spring Beauty *(Claytonia caroliniana*), Pipsissewa *(Chimaphilia umbellata),* Steeplebrush *(Spriea tomentosa*), Orange Jewelweed *(Impatiens capensis*), Trout Lily *(Erythronium americanum),* Bluebead Lily *(Clintonia borealis*), Swamp Candles *(Lysimachia terrestris*), Marsh Marigold *(Caltha palustris),* Woodland agrimony (Agrimonia striata), Cow Parsnip *(Heracleum lanatum),* Spikenard *(Aralia racemosa),* Wild Sarsaparilla *(Aralia nudicalis),* Pussytoes plantain *(Antennaria howelli*), Boneset *(Eupatorium perfoliatum),* Round leaved sundew *(Drosera rotundifolia*), Labrador Tea *(Ledum groenlandicum*), False Solomon's Seal *(Smilacina racemosa*), Rattlesnake Plantain *(Goodyera tesselata),* Shinleaf Purola *(Pyrola elliptica),* Wood Anemone *(Anemone quinquefolia*), Goldthread (*Coptis trifolia),* Turtlehead *(Chelone glabra*), Nodding Ladies' Tresses *(Spiranthes cernua),* Whorled Loosetrife *(Lysimachia quadrifolia),* Virgin's Bower *(Clematis virginiana),* False Hellebore *(Veratrum virid*e), Indian Cucumber Root *(Medeola virginiana),* Carrion Flower *(Smilax herbacea*), Foamflower *(Tiarella cordifolia),* Canada Mayflower *(Mainathemum canadense*), Bunchberry *(Cornus canadensis),* Goldthread *(Coptis groenlandica*), False Spikenard *(Smilacina recemosa),* Partridgeberry *(Mitchella repens),* Mountain cranberry *(Vaccinium Vitis-Idea),* Sheep Laurel *(Kalmia angustifolia),* Sweetfern *(Comptonia pererina),* Ground Pine (Lycopodium obscuram), Running Pine *(Lycopodium complanatum).*

Ferns: Spinulose Wood Fern *(Dryopteris spinulosa),* Interrupted Fern *(Osmunda claytoni*a), Bracken Fern *(Pteridium aquilinium),* Hay-scented fern *(Dennstaedtia punctilobula*), Maidenhair Fern *(Adiantum pedatum*), Christmas Fern *(Polystichum achrostichoides*), Royal Fern (*Osmunda regali*s), Cinnamon Fern *(Dennstaedtia punctilobula*).

Shrubs**:** Highbush Cranberry *(Viburnum Trilobum),* Elderberry *(Sambucus canadensis),* Red-Berried Elderberry (*Sambucus Pudens),* Alder *(Alnus rugosa),* Barberry *(Berberis vulgaris),* Honeysuckle *(Lonicera spp.),* Rhododendron *(Rhododendron canadense*), Winterberry *(Ilex verticilata),* Japanese Honeysuckle *(Lonicera thunbergi*), Hawthorn *(Cratageus coccinea*), Pasture gooseberry *(Ribes cynosbati),* Downy Serviceberry *(Amelancher arborea*), Ninebark *(physocarpus opulifolius*), Flowering Raspberry *(Rubus odoratus),* New Jersey Tea *(Ceanothus americanus),* Beaked Hazelnut *(Corylus cornuta*), Speckled Alder *(Alnus rugosa*), Pussy willow *(Salix discolor*), Meadowsweet *(Spirea alba*), Hobblebush *(Viburnum alnifolium*), Wild Raisin *(Viburnum cassinoides),* Staghorn Sumac *(Rhus* typhias), Smooth Sumac (*Rhus glabra*), Red Rasberry *(Rubus idaeus),* Black Rasberry *(Rubus allagheniensis),* Mountain Ash *(Pyrus americana),* Red Osier Dogwood *(Cornus stolonifera*), Bebb Willow *(Salix bebbiana*).

Grasses: Tall Cottongrass *(Eriophorum viridicarinatum*), Dark Green Bulrush *(Scirpus atrovirens),* Carex Lucida, Carex crinida, Sweet Vernal Grass *(Anthoxanthum odoratum*), Timothy *(Phleum pratense*), Poverty grass *(Aristida dichotomata),* Bur Reed *(Sparganum spp.),* Bulbostylis capillaris, Soft Rush *(Juncus effuses),* Rattlesnake grass *(Glyceria canadensis),* Japanese Brome *(Bromis japonicus*), Redtop *(Agrostis alba),* Reed Canary grass *(Phalaris arundinacea*), Barnyard grass *(Echinocloa crusgalli*), Blue Joint *(Calamagrostis canadensis*), Three Square *(Scirpus americanus).*

Lichen: Reindeer Lichen *(Cladina metis),* Star-tipped Reindeer Lichen *(Cladina stellaris),* Gray reindeer lichen *(Cladina rangiferina),* British Soldiers *(Cladonia cristata),* Thorn Lichen (*Cladonia uncialis)* Trumpet lichen *(Cladonia fimbriata*), Smooth Rock Tripe *(Umbilicaria mammulata*), Common Greenshield *(Flavoparnelia caperata*), Bristly Bearch Lichen *(Usaea hirta*), Lipstick Powerhorn *(Cladonia macilenta)* Pink Earth Lichen *(Dibaeis baeomyces*), Fringed wrinkle lichen *(Tuckermanopsis americana),* Boreal oakmoss *(Evernia mesopmopha),* Candleflame lichen *(Candelaria concolor).*

Fungi: Clinker polypore *(Inonotus obliquus),* Birch polypore *(Piptoporus betulinus),* Puffball *(Lycoperda perlatum),* Chicken of the Woods *(Laetiporus sulphereus),* Chantarelle *(Cantharellus cibarius),* Irregular Earth Tongue *(Neolecta irrecgularis),* Elegant Stinkhorn *(Mutinus elegans),* Turkey tail *(Trametes versicolor*), Belted polypore *(Fomitopsis pinicola*), Black Trumpet *(Craterellus fallax).*

(2) *List any endangered or threatened plant species that are supported by the river and river corridor environment. Include location, if known. Check whether these plants are endangered [E] or threatened [T] species and if they are significant at a national [N] or state [S] level.*

Lindley's American Aster (*Symphotrichum ciliolatum*) T, S (location unknown)
Mountain Firmoss (*Huperzia appressa*) E, S (location unknown)
(NH NHB 2013)

(3) *List any vegetative communities supported by the river and the river corridor environment which have been identified as "exemplary natural ecological communities" by the New Hampshire Natural Heritage Inventory. Include location, if known.*

Natural Communities-Terrestrial:

High Elevation Spruce Fir – Reel Brook headwaters
"….generally above 2,800'. Common tree species include balsam fir, red spruce, paper birch, yellow birch, mountain paper birch, aspen, mountain ash, striped maple, red maple and mountain maple." (Falkenham 2012, p. 35)

Northern Hardwood/Conifer
"Stands include American beech, sugar maple, red maple, striped maple, white ash, hemlock, paper birch, yellow birch, red spruce white pine and balsam fir." (Falkenham 2012, p. 39)

Northern Hardwood Forests
"This very common cover type exists throughout Easton from about 1,200 to 1,600 feet and forms the transition zone between the lowland softwood stands on the lowest slopes and northern hardwood/conifer forests higher up. Much like the hardwood/conifer forests, the logging history of the past 200 years is very evident in these stands and most of these forests are second and third growth stands. As a result many of these stands are even-aged between 80-100 years old… Some locations, particularly near the Jericho trail, Reel Brook trail and the Bowen Brook Road have impressive stands of northern hardwoods." (Falkenham 2012, p. 37)

Semi-rich mesic sugar maple forest present (location unknown, NH NHB 2013).

Lowland Spruce/Fir Forests
"Lowland spruce fir only makes up a small percentage of the forests of Easton…. Most of the lowland spruce-fir stands in Easton can be found in the basin where the Ham Branch, Reel Brook and Slide Brook converge and on poorly drained soils throughout the Easton valley. These areas are dominated by upland areas of sandy pine flats and lowland areas of lowland spruce/fir stands. Many of these stands can be viewed from Route 116, just south of the town office and near the town line with Franconia.

Unlike the northern hardwood stands, and the northern hardwood conifer stands that cover a broad spectrum of soil types and elevations, lowland spruce/fir forests dominate a very specific niche habitat. These stands are relatively unusual, small and deserve careful management and protection." (Falkenham 2012, p. 38-39)

Hemlock/Hardwood/Pine Forests
"These stands are commonly found on the well-drained outwash soils throughout the Easton Valley. They are specifically found on dry upland sandy outwash sites in the Ham Branch/Reel Brook/Slide Brook basin and on sandy/gravelly outwash terraces throughout the Paine Road loop. Many of these sites are prime agriculture soils and were cleared for grazing and crops between 1800 and 1860. (Falkenham 2012, p. 40)

Natural Communities-Palustrine:

High-gradient rocky riverbank system (location unknown)
Medium level fen system (location unknown)
(NH NHB 2013)

(d) Fish Resources

(1) *List the fish species commonly found in the river*.

2014: NH Fish & Game conducted a stream inventory of the Ham Branch River and its tributaries during the summer of 2014. Coldwater species brook trout and slimy sculpin were found at nearly every site sampled in the Ham Branch watershed.

> "The mainstem of the Ham Branch in Easton and Franconia contains a coolwater fish community comprised of brook trout, slimy sculpin, longnose sucker, creek chub, blacknose dace, longnose dace, fallfish, tessellated darter and northern redbelly dace. Only a few individuals of one non-native fish were caught, fathead minnow.
>
> The tributaries of the Ham Branch contain a coldwater fish community, dominated by wild brook trout and slimy sculpin, but also include blacknose dace and longnose sucker. Some of the wild brook trout were quite large for the small size of the tributaries, indicating that these streams serve as both vital spawning and also adult trout habitat." (Magee 2014)

1939: Previously, NH Fish & Game undertook a biological survey of the Connecticut River Watershed which was published in 1939 (NHF&G 1939). At that time, species noted were: Northern Sculpin (*Cottus cognatus*), Eastern Common Shiner, (*Notropos cornutus*), Eastern Long Nosed Dace (*Rhinichthys cataractae*), Eastern Black Nosed Dace (*Rhinichthys atratulus*), Adirondack Fine-scaled sucker (*Catostomus nannomyzon*), Eastern Common Sucker (*Catostomus commersonni*), Brook Trout (*Salvelinus fontinalis*).

(2) *List any endangered or threatened fish species which inhabit the river. Check whether these fish are endangered [E] or threatened [T] species and if they are significant at a national [N] or state [S] level*.

Wild brook trout, slimy sculpin, tessellated darter and northern redbelly dace are Species of Greatest Conservation Need in the New Hampshire Wildlife Action Plan (Magee 2014)

(3) *Describe the presence and location of spawning beds, feeding areas, and other significant aquatic habitat for warmwater, coldwater or saltwater fish populations of that is valued, but not necessarily rare, and as determined by the NH Fish and Game Department, based on the NH Wildlife Action Plan, or the U.S. Fish and Wildlife Service*.

As noted above, the size of the trout caught in the tributaries indicates that they serve as both spawning and adult habitat for this Species of Greatest Conservation Need in New Hampshire.

> "Based on the fish communities in the watershed, it appears that wild brook trout populations are sustained throughout the watershed by the movement of individual fish; thus unimpeded fish passage within the watershed is of paramount importance. These types of fish communities are relatively common in northern New Hampshire and uncommon or rare in southern New Hampshire." (Magee 2014)

(4) *Indicate whether the significant fisheries found in the river rely on natural reproduction or a stocking program. If fish populations rely on a stocking program, indicate whether they are partly or wholly dependent on the program.*

Natural reproduction. Note, however, that the 1939 NH Fish & Game survey commented that the lower section of the Ham Branch was listed as high use, and remarks suggested "Stock lower 5 miles," with Brook Trout as the recommended fish.

(5) Is the river a viable anadromous fish resource? If yes, identify any on-going or planned restoration programs.

No.

(e) Water Quality

(1) *Check the state's water quality classification that applies to this river or segment under state law*.

Class A Class B (X)

(2) *According to readily available information, what is the actual water quality of this river under the state's water quality standards?*

Class A (X) Class B

Because the upper Ham Branch River watershed experiences only limited human influence, retaining most of its natural forest cover and subject to very little development, and because NHDES has received no complaints about water quality in the Ham Branch, water quality data in the river and its tributaries is sparse. Until 2014, available data included only some pH data reported in 1939 as part of the NH Fish & Game survey, with results of 7.0, 6.8, 7.4, 6.8 from lower to upper reaches of the Ham Branch, respectively (NHF&G 1939), and some data collected by staff from the White Mountain National Forest in 2013. WMNF data was collected on three days between April and October at a single site on the upper Ham Branch River in Easton. Parameters collected included pH, turbidity, specific conductance, water temperature, alkalinity, color, nutrients and metals. Results from this monitoring effort demonstrated good water quality in the upper reaches of the mainstem, though data collected in July reflected higher levels of some metals likely caused by heavy rains on the three days prior to sampling (Johnson 2013).

As a result of the limited data available, however, the Nominating Committee and Rivers Program staff requested additional monitoring for the Ham Branch in support of this nomination. DES staff conducted this Ham Branch River water quality monitoring on the on three days during the summer of 2014 at two sites in Franconia. Parameters measured included pH, turbidity, specific conductance, temperature, dissolved oxygen, *E. coli*, chloride, chlorophyll-A, nitrogen and phosphorus. Preliminary results again suggest that water quality is good in the Ham Branch watershed, with high levels of dissolved oxygen and low levels of bacteria and other pollutants (NHDES 2014).

(3) *If the river is not currently supporting its water quality classification, identify the existing*

major causes of deficient water quality, e.g., industrial or sewage pollutants, agricultural fertilizer run-off, and possible corrective measures, e.g., regulations, enforcement, local and use controls.

Not applicable

(f) Natural Flow Characteristics

Briefly describe the natural flow characteristics of the river, including natural periodic variation in flow, e.g., spring run-off and summer flow amount, and frequency and duration of flood events. If applicable, describe purpose of and flow variations caused by impoundments, significant diversions, or channel alterations, including interbasin transfers. Indicate which segments of the river are free-flowing.

The Ham Branch River and its tributaries are currently free-flowing. However, there were at least six dams in the watershed between the early 1800s and early 1900s. With very little

Ham Branch River & Gibson Road, April 15, 2014. Water level three to four feet lower than during Tropical Storm Irene in August 2011. Photo by Kris Pastoriza.

Ham Branch River & Gibson Road, May 11, 2014. Photo by Kris Pastoriza.

development in this steeply sloped watershed, the river and its tributaries respond naturally, though rapidly, to precipitation and snow melt events. In fact, with the addition of a permanent stream flow gage, the river would make an excellent reference or control system for natural river flow.

The NH F&G Biological Survey of the Connecticut River Watershed (1939) lists water-flow data, collected in mid-July, for the Upper and Middle portions of Ham Branch. Flows were 0.6 cfs in the upper reaches at 1240' elevation, increased rapidly to 7.1 cfs at 1080' elevation, and increased further to 10.4 cfs at an elevation of 960' just before crossing into Franconia.

Measurements by USGS in September 1990 and July 1991 in the Ham Branch River showed a similar range of flow values, ranging from 0.25 cfs in the upper watershed (1.2 mi^2 drainage area) to 8.7 cfs in the lower watershed, draining 24.1 mi^2 (Flanagan 1996, p 215).

Current flows in the Ham Branch can be estimated using the USGS StreamStats website based on comparable streams, available at http://water.usgs.gov/osw/streamstats/ungaged.html.

(g) Open Space

Briefly describe, give the location and identify the type, e.g., floodplain, forested, etc., and type of ownership, i.e., public or private of significant areas of open space in the river corridor. Describe and include the location of any protected land parcels within the river corridor, e.g., state parks and forests, national forest lands, municipal parks and conservation easements.

Approximately 46% of the watershed's 19 square miles is within White Mountain National Forest. Three miles of the Ham Branch, Reel Brook and Slide Brook are within a private conservation easement held by the Society for the Protection of New Hampshire Forests, and a half mile of Judd Brook is within a private conservation easement held by the Natural Resources Conservation Service.

From Paine Road eastward up the flanks of the Kinsman Ridge, ninety percent of the watershed corridor is comprised of Highest Ranked Habitat in New Hampshire (NHF&G, 2006), as is 90% of the Reel Brook watershed corridor that lies in WMNF, as well as the portion of the Ham Branch east of N.H. Route 116.

A half mile of Reel Brook west of N.H. Route 116, on the Darvid Farm, is within Highest Ranked Habitat in Biological Region, and the fields through which it runs are farmlands of statewide importance.

Another two miles of river corridor west of Paine Road and N.H Route 116 are ranked as Supporting Landscapes.

The Judd Brook corridor east of Paine Road and the upper 2/3 of Kendall/Flume Brook corridors pass through undeveloped areas of Northern Hardwood Conifer Forest, as does the Reel Brook drainage east of Reel Brook Road, except for the highest half mile of headwaters which lies in High Elevation Spruce Fir forest.

From Route 116 west to their junction with the Ham Branch, Reel Brook and Slide Brook drainages pass through one mile of wetland and peatlands that overlie a stratified drift aquifer.

The Ham Branch east of N.H. Route 116 passes through predominantly lowland spruce-fir, and west of N.H. Route 116 to the Reel Brook junction it passes through a mile and a half of wet meadow/shrub woodland.

One half mile before the Franconia border, the Ham Branch borders a floodplain forest. Above its junction with Brooks Brook, considerable sediment was deposited during the flooding produced by Tropical Storm Irene in 2011.

2. Managed Resources

(a) Impoundments

List all of the dams that are present in the river, including any dams that are breached or in ruins. Identify their location, ownership, and purpose, i.e., flood control, low flow augmentation, or storage. Also indicate whether minimum flow requirements exist at any of the impoundments, if known. Include any proposals for new or reconstructed dams; indicate that this is a proposed dam by placing and asterisk (*) next to the name of the dam. Do not include existing or proposed dams which are used for hydroelectric energy production. These will be listed separately in the managed resources category.

NONE. There are locations that have potential for small-scale hydro development. If the Natural River classification were to allow small scale hydro, in support of local energy self-sufficiency for New Hampshire towns, the Ham Branch River could be utilized.

(b) Water Withdrawals and Discharges

(1) *List any significant water withdrawals from the river, including withdrawals for public*

drinking water, industry, and agriculture. Identify the purpose (e.g., irrigation) and location of the withdrawal. Indicate if the river has been identified in a state, regional, or local study as a potential source of water supply and, if so, identify the study.

NONE. There are no permitted surface water withdrawals on the Ham Branch River or its tributaries in Easton.

(2) *List all known surface water and potential discharges to the river and identify the source, type (e.g., industrial wastewater) and location of the discharge. Indicate whether the discharge has been permitted by the state (yes or no).*

NONE. There are no permitted surface water discharges on the Ham Branch River or its tributaries in Easton.

(c) Hydroelectric Resources

List all known existing or potential (as cited in the NH River Protection and Energy Development Project -Final Report; New England Rivers Center, 1983) sites of hydroelectric power production. Record the owner, location and whether the site is regulated or exempt from regulation by the Federal Energy Regulatory Commission (FERC).

NONE. There are no permitted hydroelectric sites on the Ham Branch River or its tributaries.

3. Cultural Resources

(a) Historical and Archaeological Resources

Describe any significant historical or archaeological resources or sites with significant potential for such resources (as determined by the state historic preservation officer) found in the river or river corridor. Identify whether the resource is listed or is eligible to be listed as a National Historic Landmark (NHL) or on the National Register of Historic Places (NRHP) or is a recognized Historic District (HD) or Multiple Use Area (MUA). If known, indicate whether these resources are significant at a national, regional (New England), state, or local level. Below this listing, note any local town histories, oral histories, or general historical knowledge about the use of the river and its corridor.

According to correspondence from the Northern Pass project manager, White Mountain National Forest records in the WMNF Headquarters in Campton, NH list the following historical sites within the Ham Branch watershed in Easton:

C. Young site (WMNF 1-012; 27-GR-2012)
C. Oaks site (WMNF 1-086; 27-GR-2083)
N. Bartlett site (WMNF 1-087; 27-GR-2084)
S. & C. Edwards site (WMNF 1-014; 27-GR-2014)
Edwards Outbuilding site (WMNF 1-177; 27-GR-3464)
Thompson Barn site (WMNF 1-043; 27-GR-2042)
Sugar House site (WMNF 1-174; 27-GR-2084)

Because WMNF staff is overloaded with work requests, clarification of and additions to the above list, including associated flora and fauna data, will be submitted later or incorporated in the future *Ham Branch Watershed Corridor Management Plan* if the river is designated. In particular, the last two listings may not be within the Ham Branch watershed corridor.

Houses with potential to be listed to the NH Register of Historic Places: Stever, Whitcombs, McLaren, Shibanoff/Kennard, Thibeault, Pritham, Darvid, LaVallee, Ford, Shannon-Adams, Farrell, Dionne, Hubbard, Kenney (Mike).

The Kinsman Cemetery on Paine Road is listed to the N.H. Register of Historic Places.

See Appendix C for historical and archaeological information.

(b) Community Resource

Briefly describe how the river is recognized or used as a significant community resource. If the river's importance is recognized in any official town documents, such as a master plan, include reference to such documents.

Easton's Master Plan (2010) calls for protection of the surface water quality and town's aquifers. It also states "The town's natural and scenic resources are important to the community's year-round residents as well as visitors to the town and region." Clearly the Ham Branch watershed is an integral part of these resources. The Master Plan notes the importance of the stratified drift aquifer which underlies a significant portion of the Easton Valley, as well as the importance of maintaining the "high quality of Easton's surface waters and its healthy aquatic ecosystems." The Master Plan gives specific recommendations for reducing soil erosion, especially due to storm runoff, which may well increase due to climate change leading to an increase in flooding. The Ham Branch and its wetlands are listed as priorities in the Master Plan.

Easton's Natural Resource Inventory and Franconia's Master Plan also give specific recommendations for water resource protection, as cited in section 3 of this application, the scope of which has significant overlap with this section.

> An Aquifer Protection District manages land uses over high potential stratified drift aquifers to ensure toxic and hazardous materials do not contaminate the town's important groundwater resources. In addition, a Flood Hazard Zone protects the community from the health, safety, financial and environmental impacts of development in the floodplain. The Zoning Ordinance protects the town's wetlands from most development activities with a Wetlands Conservation District, and provides that wetlands can form no more than 25% of the 3 acre minimum lot size. (Easton 2010, p. 25)

The Ham Branch River, its tributaries, and the wetlands around it are identified as priorities for protection in the Master Plan.

4. Recreational Resources

(a) Fishery

Identify the type and location of any high quality recreational fisheries or areas with such potential that are present in the river, as determined by the NH Fish and Game Department. Also indicate areas that have potential to be significant fisheries.

A popular location for fishing exists where a pool has formed at point where the Ham Branch crosses under NH Route 116. Brook trout, which were found at nearly every sampling station during the NH F&G fish survey of the Ham Branch River and its tributaries, were relatively large even in the small tributary streams.

(b) Boating

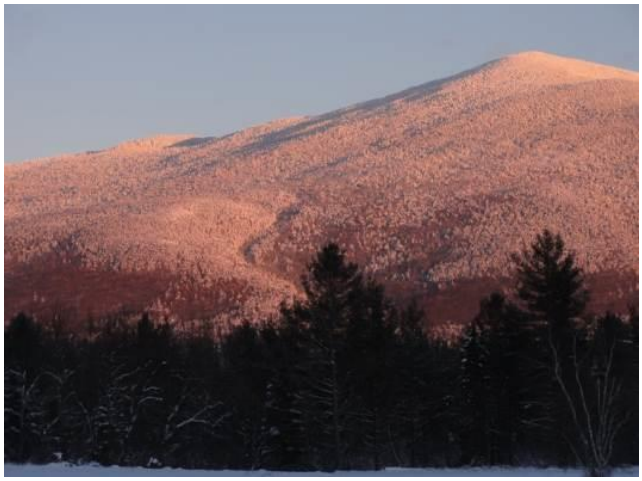
Describe any significant recreational boating opportunities that are present on the river, including whether it is used for motorized boating. Indicate if the river is cited as significant for recreational boating in a publication of a national, regional or statewide recreation organization. Refer to the NH River Protection and Energy Development Project to determine the river's significance as a recreational boating river. Also note if boaters are attracted from beyond the local area and if there are areas with potential to be significant boating resources.

NONE. No significant boating opportunities exist on the Ham Branch River or its tributaries in Easton.

(c) Other Recreational Opportunities

List any other recreational areas, facilities, or opportunities or potential for such on the river or in the river corridor, e.g., hiking, camping, picnicking, etc. Indicate ownership, if known.

There are three swimming holes on the river, one above the Town Hall on Loop Road, one across from the Town Hall and Route 116, and one where the Ham Branch crosses under Route 116 near the northern outlet of Paine Road. Though on private land, there is public access to these places, and Slippery Rock, above the Town Hall, is an especially popular area.



North Kinsman Mountain and Judd Brook. Photo by Kris Pastoriza.

Hiking and camping are permitted in White Mountain National Forest. Roughly 50% of the Ham Branch Headwaters are within National Forest or conserved lands. The Reel Brook and Kinsman Trails have been mentioned in Appalachian Mountain Club and other guidebooks since the early 1900s. The Reel Brook Trail is contiguous with the Reel Brook for roughly 2/3 of its length. The Kinsman Trail is crossed by several feeder streams to the Ham Branch.

(d) Public Access

List any existing public access sites located along the river. These may be formal or non-formal

access points. Include the type of public access (e.g., canoe only), related facilities (e.g., parking), and if known, ownership at each site.

Public access at swimming holes is allowed although they are on private property. Public access for boating does not exist because the river is, for the most part, too shallow for boating. There is public access at all hiking trails. There is parking for Reel Brook Trail and the Kinsman Trail.

Kendall Brook. Photo by Kris Pastoriza

5. Other Resources

(a) Scenic Resources

Briefly describe any significant scenic focal points along the river including designated viewing areas and scenic vistas and overlooks. Indicate the location of the significant views to and from the river.

Though the river is not particularly visible from Bald Knob or South Kinsman, the terrain it has created and in which it is embedded is clearly visible and significant. Reel Brook is visible along much of the Reel Brook Trail. The Ham Branch, Slide Brook, Reel Brook and several unnamed feeder streams are focal points where they cross NH Route 116. The Ham Branch passes the Easton Town Hall on its south and east sides, passing under Route 116 just south of it. The views of the Kinsmans, Cannon Mountain, Moosilauke and the Cooley-Cole ridge from various locations on the watershed are too numerous to mention, but photos of some of these are included in the River Narrative accompanying this application in Appendix C.

(b) Land Use

Briefly describe the general patterns of current land use in the river corridor. Include location of significant developments within the river corridor including agricultural, residential, commercial, and industrial developments, and solid waste management facilities. Also include location of lands used for forest management or which are undeveloped. Identify such features as roads along the river, railroads, bridges, and utility crossings. Describe the type and location of any proposals for major developments within the river corridor.

Howland's (Kinsman) Flume. Stereograph made by G.H. Aldrich Co., Littleton, NH.

Easton has no business or industrial zoning. Attached maps show White Mountain National Forest, private conservation easements, the Northeast Utilities power line which is the "preferred" route for the Northern Pass project, roads, fields, and houses. This Right-of-Way (Special Use Permit in portions of WMNF) is within the river corridor for 4.25 miles and crosses the Ham Branch 0.4 mile south of the end of Gibson Road, on the Ward/Pastoriza property which has a conservation easement.

Easton Land Cover Type	Acres	% of Corridor
Developed-open space	63 ac.	0.4%
Agricultural/Grassland	265 ac.	2%
Scrubland	261 ac.	2%
Forest	11,725 ac.	92%
Wetlands	328 ac.	2%
Other	344 ac.	2.6%
Total	12,986 ac.	100%

(c) Land Use Controls

Identify the municipalities with existing master plans and zoning ordinances within the river corridor. Identify existing or significant proposed land use controls which affect the river and the river corridor (e.g., zoning, easements, subdivision regulations).

Easton's municipal laws regulate land use throughout the town. Because most of the buildable land in the town will also be within the designated river corridors of the Ham Branch mainstem and its tributaries, the protections added by the Rivers Management and Protection Program will be added to most of the town. Land use controls are currently outlined in the Easton Master Plan and the town's zoning ordinance:

> The Town of Easton Zoning Ordinance provides for a minimum lot size of three acres, and a density of one dwelling unit per three acres, throughout the community. Permitted uses include residential (single family and duplex), churches, agriculture and home occupations. Certain additional uses are allowed by special exception. These include public utilities, municipal buildings, noncommercial recreation, bed and breakfasts, antique/gift shops, home occupations, and small day care or group home. The Zoning Ordinance places some restrictions on home occupations, signs and lighting, and provides for telecommunications facilities. (Easton 2010, p 32)

Easton's Natural Resource Inventory gives recommendations for water resource protection:

> In 1911, The Weeks Act was written to give the U.S. Government the ability to purchase private land for the purpose of protecting the headwaters of navigable rivers of the United States. The White Mountain National Forest is a direct result of the Weeks Act. The land base of Easton is approximately two thirds in the White Mountain National Forest, thus the majority of the headwater streams in Easton afford the protection of the Weeks Act. This results in a town whose water quality is exceptionally high. The quality of a town's water supply, including wetlands, speaks volumes of the quality of life in that town. The streams and wetlands in Easton buffer floods, recharge the drinking water supply and remove toxins from the water, all of which have a direct impact on the overall health of the people in a town. Not to mention that pristine mountain streams and wetlands are a pleasure to look at and provide a sense of freedom and serenity for everyone who lives in this town.
>
> The Weeks Act can only protect so much, after that the safeguarding of a town's water resources becomes the responsibility of the town, the landowners and the people who live there. The following is a list of recommendations that the town and its landowners can use to protect the water resources in the town of Easton:
>
> 1. Conserve land from development around headwater streams, wetlands, shrublands and grasslands across the entire landscape, not just around specific streams or wetlands. When it comes down to it, land protection is the best method to protect water quality. Protecting the entire landscape that a stream or wetland is contained in allows for more succession and natural processes to take place, thus greater water quality protection. There is currently an effort to buy and protect through conservation easement a 700 acre, Easton/Franconia community forest. This effort will protect the headwaters of streams on the Cole/Cooley Hill Ridgeline which feed into the Ham Branch. This effort should be supported by all citizens of the town.
> 2. Encourage the New Hampshire Fish and Game Department to do stream surveys for brook trout habitat throughout the town. This data can be used for town planning purposes and will bolster the information in this NRI.

3. Incorporate stream and wetland protection into town and regional planning. Through land conservation and zoning ordinances, this effort will have lasting effects by protecting species of concern, preventing flood damage and protecting water quality.
4. Keep permanent roads and driveways at least 300 feet away from streams and wetlands.
5. When possible limit the use of road salt on town roads.
6. When building or replacing stream crossings for permanent roads, consider using bridges or open bottom stream crossing devices such as arched culverts. These devices allow much more water to flow through them, thus reducing the chances for flood damage and decreasing long term costs. These devices also allow freedom of movement for all aquatic organisms who require unrestricted movement throughout the watershed such as brook trout.
7. Maintain beaver dams and flowages and use beaver dam water control devices to maintain a consistent water level, thus protecting property and roads.
8. Locate new roads where they are unlikely to become impacted by potential beaver dam sites.
9. Timber harvests in and around wetlands, when done properly, can provide valuable habitat for about 70 species of wildlife including American woodcock, ruffed grouse, white-tailed deer, eastern towhee, beaver, and chestnut sided warblers. For timber harvests, follow best management practices to prevent erosion on logging operations, consult with a New Hampshire licensed forester and consult with your county Extension Forester.
10. When conducting timber harvests around vernal pools, leave at least a 50-100 foot buffer around vernal pools. (Falkenham 2012, p. 24-25)

A significant land use control which affects the river corridor is state and federal pre-emption of local zoning in the case of energy projects, which has huge potential for negative effects on the watershed, river corridor, aquifer, viewshed, sense of place and community.

(d) Water Quantity

List the location of all operating stream gauge stations maintained by the U.S. Geological Survey, U.S. Army Corps of Engineers or the Department of Environmental Services. Include the number of years of record and whether it is a partial or full record station.

There are no stream gauge stations on the Ham Branch River or on the Gale River into which the Ham Branch flows. The nearest gauge in the watershed is on the Ammonoosuc River, into which the Gale River flows, in Bethlehem Junction, NH. Daily discharge data at this station is available from 1939 to present.

(e) Riparian Interests/Flowage Rights

Under New Hampshire common law, owners of frontage on surface waters have riparian rights to divert or withdraw surface waters as long as the use is reasonable with respect to uses of other riparian owners and has no undue adverse effect on public trust uses of surface waters. Describe riparian interests within the corridor, including any existing or planned water withdrawals not previously listed under the Managed Resources section. Also describe any legislatively granted water rights such as a town given legislative authorization to surface waters for public water supply in the 19th century. DES has an inventory of legislatively granted water rights.

NONE. There are no permitted surface water withdrawals or discharges on the Ham Branch River or its tributaries in Easton.

Include any known flowage rights. Flowage rights are recorded easements granted by property owners to dam owners to allow operation of a dam to flow or flood their land. Many older dams do not have recorded flowage rights.

NONE. There are no flowage rights on the Ham Branch River or its tributaries in Easton.

VIII. RIVER POINT EVALUATION SUGGESTION AND JUSTIFICATION

Explanation: By law, the rivers coordinator must evaluate the nomination using a system that has been designed to both identify significant resources and to ensure consistency in the manner in which each river nomination is evaluated. The system consists of a general evaluation and the awarding of points for the presence of significant resources within each resource category. Sponsors of the nomination are requested to suggest the number of points they feel should be awarded for the significant resources contained within each resource category and a brief justification regarding why those points should be awarded.

Instructions: Complete the table below. Please note that if a resource is present that all points for that resource should be awarded, however, only these points may not exceed the maximum points in each resource category.

Category	Points Available	Maximum Points	Suggested Points to be Awarded	Justification for Points
NATURAL RESOURCE CATEGORY		205		
(a) Geologic Resources		30		
(1) national or regional significance	30			
(2) statewide significance	20		20	Headwaters in the White Mountains; Stratified drift aquifer
(3) local significance	10			
(b) Wildlife Resources		30		
(1) endangered or threatened species		15		
a. national significance	15		15	Canada lynx
b. statewide significance	10			Bobcat, ruffed grouse, pine marten
(2) significant wildlife habitat		10		
a. Habitat that is within a conservation focus area or that is known to have contained or currently contains state or federally listed endangered or threatened species	10		10	All of Easton east of NH Rt. 116 is in NH Fish & Game Lynx Protection Zone
b. Habitat that is within an area of highest quality habitat statewide or highest quality in the biological region and/or is a habitat for a species of special concern	5			

Category	Points Available	Maximum Points	Suggested Points to be Awarded	Justification for Points
c. Habitat that is within an area of supporting landscapes or that contains other species of greatest conservation moderately diverse	3			
d. Adjacent habitat	1			
(3) wildlife travel corridor		5	5	Watershed and surrounding open space.
(c) Vegetation/Natural Communities		20		
(1) endangered or threatened plant		15		
a. national significance	15			
b. statewide significance	10		10	Lindley's Aster
(2) exemplary natural ecological community	5	5	5	High elevation spruce fir Semi-rich mesic sugar maple forest
(d) Fish Resources		35		
(1) endangered or threatened fish		15		
a. national significance	15			
b. statewide significance	10		10	Wild brook trout, slimy sculpin, tessellated darter & northern redbelly dace are Species of Greatest Conservation Need

Category	Points Available	Maximum Points	Suggested Points to be Awarded	Justification for Points
(2) significant aquatic habitat		10		
a. Habitat that is within a conservation focus area or is known to have contained or currently contains state or federally listed endangered or threatened species.	10			
b. Habitat that is within an area of highest quality habitat statewide or highest quality in the biological region and/or is a habitat for a species of special concern	5		5	Wild brook trout, slimy sculpin, tessellated darter & northern redbelly dace are Species of Greatest Conservation Need
c. Habitat that is within an area of supporting landscapes or contains other species of greatest conservation need.	3			
d. Adjacent habitat not located within any of the above.	1			
(3) fish reproduction		5		
a. natural reproduction	5		5	Brook trout present, no stocking
b. some stocking	3			
c. stocking	1			
(4) anadromous fish		5		
a. reproducing populations of diadromous fish	5			

Category	Points Available	Maximum Points	Suggested Points to be Awarded	Justification for Points
b. restoration begun	3			
c. documented restoration plan	1			
(e) Water Quality		30		
(1) Class A	30		30	Actual water quality meets Class A standards, though designated Class B.
(2) Class B	15			
(f) Open Space	10 per occurrence	30	30	Fields and wetlands, WMNF
(g) Natural Flow Characteristics		30		
(1) 100 percent free-flowing	30		30	No impoundments in watershed
(2) largely free-flowing	15			
SUBTOTAL NATURAL RESOURCES		205	**175**	
MANAGED RESOURCE CATEGORY		90		
(a) Impoundments		30		
(b) Water Withdrawals and Discharges		30		
(1) water withdrawals		20		
a. existing public drinking water	10			

Category	Points Available	Maximum Points	Suggested Points to be Awarded	Justification for Points
supply				
b. potential public drinking water supply	5		5	Class A actual water quality.
c. existing industrial water supply	5			
d. potential industrial water supply	3			
e. existing agricultural water supply	5			
f. potential agricultural water supply	3		3	Could be used for water supply.
(2) wastewater discharges		10		
a. wastewater treatment facility discharge	10			
b. industrial wastewater discharge	5			
(c) Hydroelectric Resources		30		
(1) existing hydroelectric power production	30			
(2) potential hydroelectric power site	15			
SUBTOTAL MANAGED RESOURCES		90	**8**	
CULTURAL RESOURCE CATEGORY		60		

Category	Points Available	Maximum Points	Suggested Points to be Awarded	Justification for Points
(a) Historical or Archeological Resource		30		
(1) national significance	30			
(2) regional significance	15		15	Historic houses and mill sites.
(3) statewide significance	10			
(b) Community River Resource	10 per occurrence	30	20	WMNF Land and Resource Management Plan, Town-recognized swimming holes
SUBTOTAL CULTURAL RESOURCES		60	**35**	
RECREATIONAL RESOURCE CATEGORY		120		
(a) Fishery		30		
(1) Year-round coldwater, warmwater, and saltwater fish species fish habitat.	30			
(2) Year-round habitat for 2 or more coldwater, warmwater or saltwater fish species.	20		20	Multiple coldwater and coolwater species. One warmwater species.
(3) Year-round habitat for either coldwater, warmwater or saltwater fish species.	10			
(b) Boating		30	30	Spring kayaking (AMC River Guide: New Hampshire, Vermont)

Category	Points Available	Maximum Points	Suggested Points to be Awarded	Justification for Points
(c) Other Recreation	10 per occurrence	30	30	Swimming, hiking, fishing
(d) Public Access		30		
(1) on publicly-owned land	30		30	Hiking along streams.
(2) on privately-owned land	15			
SUBTOTAL RECREATIONAL RESOURCES		120	**110**	
OTHER RESOURCE CATEGORY		120		
(a) Scenery	30	30	30	Kinsmans, Moosilauke, Cooley-Cole
(b) Land Use		30		
(1)high quality scenic and natural resources; corridor generally undeveloped or limited to forest management or scattered housing	30		30	
(2)corridor partially to predominantly used for agriculture, forest management and residential housing	20			
(3)corridor populated; some residential or other building	10			

Category	Points Available	Maximum Points	Suggested Points to be Awarded	Justification for Points
developments; readily accessible by road				
(4)corridor highly populated; contains significant development	5			
(c) Land Use Controls	10 per occurrence	30	30	WMNF, Conservation Easements, no industrial or business zoning.
(d) Water Quantity – gauge present		30		
SUBTOTAL OTHER RESOURCES		120	**90**	
TOTAL POINTS		595	**418**	

Final note: Before submitting the nomination, please check the form for completeness. Nomination forms are reviewed for completeness by the Department of Environmental Services. Be sure to consult RSA 483 and Env-Wq 1803.02 to make sure that all information requirements have been met. Incomplete nominations will be ineligible for consideration by the State Legislature in the next legislative session.

Nomination Checklist

The following is a checklist of required information for each river nomination, as described in RSA 483:6.

☒ (a) Name of the river;

☒ (b) Location & length of the river or segment;

☒ (c) Sponsor's name, address, e-mail address and daytime telephone;

☒ (d) Description of significant resources contained in the river or segment and its corridor;

☒ (e) Description of community and public support for the nomination, including copies of any letters of support from elected and appointed local officials;

☒ (f) Documentation of notification of the nomination to elected public officials of all municipalities through which each nominated river or segment flows;

☒ (g) Recommendation on the classification(s) for the river or segment, including starting and ending points for each segment and the length in miles of each segment;

☒ (h) USGS map or equivalent of the river or segment and its corridor & inset or locator map showing location of river or segment within the state;

☒ (i) Assessment of river or segment's resources, including, but not limited to, the following:

- ☒ (1) Geologic resources;
- ☒ (2) Wildlife resources;
- ☒ (3) Vegetation and natural communities;
- ☒ (4) Fish resources;
- ☒ (5) Water quality as designated pursuant to RSA 485-A:9 or as shown by actual water quality analysis, if available;
- ☒ (6) Hydrologic resources, including natural flow characteristics;
- ☒ (7) Scientific resources;
- ☒ (8) Open space;
- ☒ (9) Dams/Impoundments;
- ☒ (10) Existing and potential withdrawals; existing and potential discharges;
- ☒ (11) Existing and potential hydroelectric resources;
- ☒ (12) Historical or archaeological resources;
- ☒ (13) Community river resources;
- ☒ (14) Public access;
- ☒ (15) Existing and potential recreational resources (fishing, boating, public access, other);
- ☒ (16) Scenic characteristics;
- ☒ (17) Current land use and controls;
- ☒ (18) Water quantity/Stream gauges;
- ☒ (19) Riparian interests/Flowage rights;

☒ (20) River point evaluation and justification.

Please be sure your river nomination includes at least all of the above information. Include 2 hard copies and 1 electronic copy of the nomination when submitting nomination to DES. Thank you for participating in the NH Rivers Management and Protection Program.

References

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