

Appendix F: Noteworthy Federal Involvement in the Nashua River Watershed



Wood ducks can be found on beaver ponds and river floodplains, along slow-moving streams, and in deep marshes throughout the state. Photo: Gaynor Bigelbach.

The Nashua River as a tributary of the Merrimack River is listed as part of the North American Atlantic Salmon Anadromous Fish Program. The Nashua River is also recognized as having international importance as a migratory flyway as it provides breeding and migration habitat for migratory waterfowl in the form of open palustrine and emergent wetlands. The extensive and regionally significant wetlands occurring on and adjacent to the Oxbow National Wildlife Refuge (ONWR), including its associated tributary headwaters, have been listed as a priority for protection under the Emergency Wetlands Resources Act of 1986 (P.L.) 99-645 (100 Stat. 3582). It is also named as a priority for protection due to their importance to the Atlantic Flyway for migrating birds under the North American Waterfowl Management Plan: an agreement between Canada, Mexico, and the United States. Indeed, the

ONWR was initially created to support the national migratory bird management program. In 2016 the “Bill Ashe Visitor Facility” at ONWR and associated boat launch on the Nashua River were built.

The Nashua River is listed in the 1987 US Environmental Protection Agency (EPA) Priority Wetlands of New England, in recognition of the value of its wetland habitats to northeast waterfowl populations (*Central Nashua River ACEC Nomination Report*, pg. 10). As we understand it, the US Fish and Wildlife Service (USFWS) is pursuing a goal to reintroduce alewife and American shad to the Nashua River in the next ten years (personal communication with Michael Bailey, USFWS Assistant Project Leader, 2016) and has a river herring restoration program in place on the Nashua River; passage for river herring may be required in the future. The USFWS has already stocked alewife and American shad in Lake

Potanipo, Brookline, New Hampshire headwaters of the Nissitissit River since 2014.

As part of the large scale plan for fish restoration in the Merrimack River, the Nashua River Watershed is a current and future release location for river herring. Anadromous fish restoration is a cooperative effort among state agencies including the Massachusetts Division of Marine Resources, MassWildlife, and federal agencies including the Service, National Marine Fisheries Service and U.S. Forest Service. The Nashua River is considered a self-sustaining river in that it has existing fish passage facilities at dams which need to be modified or improved as part of the plan. This watershed will also be monitored and evaluated to ensure effective and efficient upstream and downstream passage of fish. Fish that would benefit from this effort include the river herring (*Alosa pseudoharengus*), American shad (*Alosa sapidissima*) and American eel (*Anquilla rostrata*).¹

Nearly the entire Nashua River watershed has been included as the “Nashua River Greenway Forest Legacy Area” under the US Forest Service administered Forestry Legacy Program in partnership with Massachusetts Department of Conservation and Recreation’s Bureau of Forestry (see www.mass.gov/eea/docs/dcr/stewardship/forestry/other-reforest/nashua-river-greenway-expansion-2001.pdf).

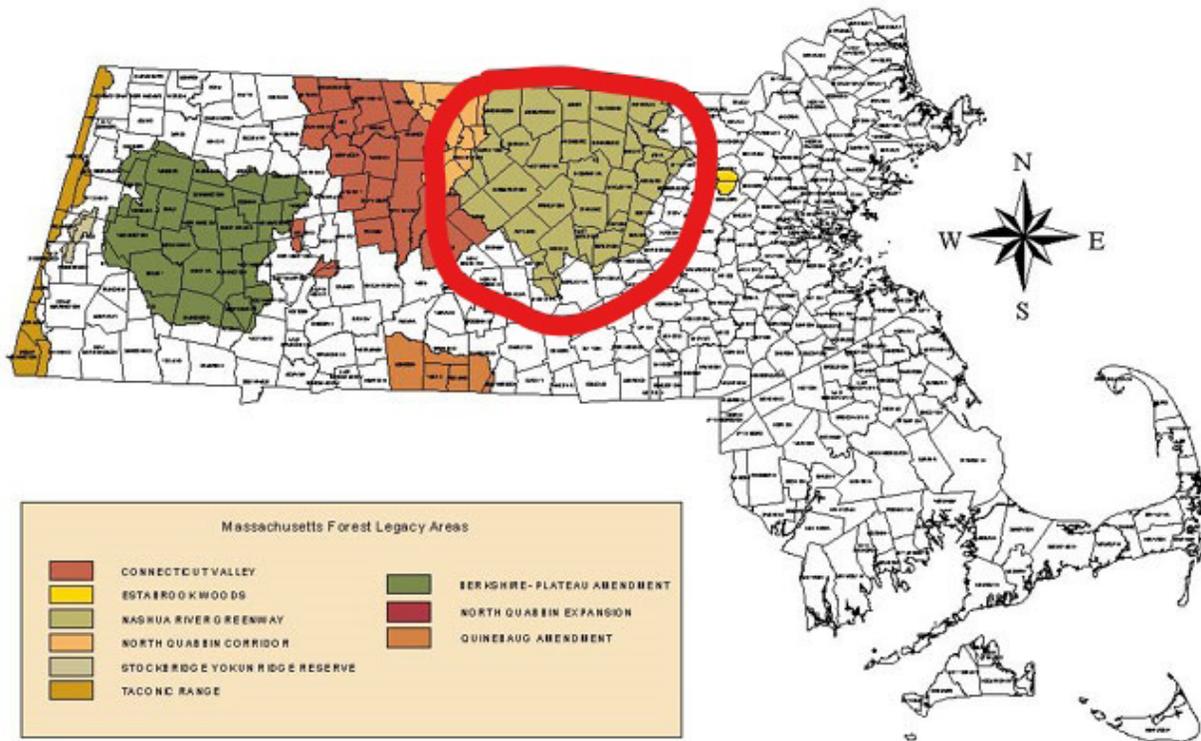
Note: This Forest Legacy Area met the eligibility criteria for a Forest Legacy Area as follows:

1. Forests are threatened by immediate and future conversions to non-forest, house lots.
2. Individual landowners have been approached about selling conservation easements and are interested in selling easements.
3. Scenic resources ... are recognized as distinctive.
4. Public has traditionally utilized the ... areas for recreation and there are opportunities to extend the existing greenway systems.
5. Numerous private wells, six public water supply wells, and designated Zone 2 drinking water protection areas lie within the sections, protection of the water supply sources.
6. Riparian habitat for fish, waterfowl and migratory songbirds, and associated forested wetland plants and animals.
7. Contain rare and endangered flora and fauna.
8. Provide river access to all types of passive recreation including fishing.
9. Contain significant historic sites and potential sites of archaeological importance.
10. Have highly productive floodplain soils for forestry and agriculture.

There are two Forest Legacy protected tracts in our study area: Belmont Springs tract (bisected by Gulf Brook, a tributary to Nissitissit River; 255 acres in Pepperell) and Pumpkin Brook Link tract (tributary to Squannacook River; 174 acres in Shirley).

1 USFWS Oxbow National Wildlife Refuge, Final Comprehensive Conservation Plan, Feb. 2005, pg. 33

MASSACHUSETTS FOREST LEGACY AREAS



The Nashua, Squannacook, and Nissitissit Rivers are all included in the federally designated Freedom’s Way National Heritage Area (FWNHA) as are all our participating towns. The FWNHA extends from metro-Boston, through the site of “the shot heard round the world” in Concord, to Mount Wachusett. One ongoing project is to build a trail following Henry David Thoreau’s famous 1842 walk there through Bolton, Lancaster, and the Still River village within Harvard. FWNHA describes itself as:

...intimately tied to the character of the land as well as those who shaped and were shaped by it. Here landform and climate combined to create an environment propitious to settlement, with a network of natural features, including river systems and forests, sustaining successive generations of inhabitants. Like veins on a leaf, the

paths of those who settled the region are connected, providing both tangible and intangible reminders of the past. Their stories can be found on village commons, along scenic roadways lined with stone walls, in diaries and artifacts, in a cabin by a pond, along a battle road or hidden deep within a secret glen by the bank of a meandering river.²

In regards to previous federal grant-awarded projects in our study area, the Environmental Protection Agency (EPA) Targeted Watersheds Grants program funded the Nashua River 2004-2007 “Protecting Today’s Water for Tomorrow: Combating Threats to Source Water in the Squannacook Nissitissit Sub-basin of the Nashua River Watershed” project. The NRWA and three partner organizations—Beaver Brook Association, New England Forestry Foundation, and the Trust for Public Land—were one

² <http://freedomsway.org>

of only fourteen awarded nationwide to combat threats to drinking water and protecting key water resources by conserving key land parcels. The project was highlighted in *The Trust for Public Land's Source Protection Handbook Using Land Conservation to Protect Drinking Water Supplies*, 2005. This project built upon an earlier federal EPA 2001 Source Water Stewardship Project focused on the Squannacook-Nissitissit Rivers: one of four such sites awarded nationally.

Finally, there are two US Geological Service (USGS) river gages in our area: one on the Nashua River in East Pepperell https://waterdata.usgs.gov/ma/nwis/uv/?site_no=01096500&PARAMETER_cd=00065,00060 and one on the Squannacook River in West Groton https://waterdata.usgs.gov/nwis/uv/?site_no=01096000. The former gage has been operating and providing water flow records since 1935; the latter gage has been there since 1949 and is considered by USGS to be a reference gage which is described as follows:

[l]ong periods of unmodified streamflow, ... natural forest and wetland landcover with no water withdrawals, return flows, dams, or development. Few stations in southern New England meet these criteria, however, given population the density and history of land use in the region. GIS data for water withdrawals, water returns, dams, and land-use characteristics were evaluated to indicate difference in potential flow alteration in records for selected stations in MA.³

³ Characteristics and classification of least altered streamflow in MA. Armstrong, D.S., Parker, G.W. and Richards, T.A. USGS Scientific Investigations Report 2007, pg 11.