

Intervale Riparian Restoration Project

Background:

Floodplain forests are unique natural communities that serve a variety of important functions for humans and our native flora and fauna. They mitigate flooding and erosion, protecting the fertility of agricultural fields while keeping water in our lakes and streams cleaner. They often serve as critical corridors for wildlife travel, connecting fragmented areas of upland habitat, and are the interface between aquatic and terrestrial areas, providing important features relied on by aquatic, amphibious, reptilian, mammalian, and avian species. They also providing habitat for a high incidence of rare, threatened and endangered species of all taxa. Intact floodplain forests are unique and sensitive natural communities, and they are uncommon throughout Vermont.

The relative uncommonness of floodplain forest in Vermont can be attributed to human behavior; floodplains are generally flat sites with enriched soils, excellent sites for agriculture. Some of these areas were used by Native Americans for agriculture prior to European settlement, but nearly all of them were cleared and converted to agriculture in the late 1700's through the early 1800's when approximately 80% of Vermont was cleared. While most areas cleared during this time were eventually allowed to revert to forest, most floodplain areas remain open and in agricultural use today. In most cases, only a thin buffer along the banks of the river has been allowed to revert to floodplain forest, although in many areas land has been kept entirely cleared up to the bank of the river. Among the negative results of this activity has been water pollution, through erosion and the leaching of fertilizers and manure into our waterbodies, and the loss of fertility and usable farmland as unstable river banks erode into rivers.

Invasive fungi and insects have already irreparably altered many natural communities in Vermont over the last century, virtually removing several species of trees, such as American chestnut, from the landscape and altering the behavior of others, such as American Elm. Invasive exotic plant species present a relatively new threat to these floodplain forest ecosystems. These plants are aggressive competitors skilled at dispersing and outcompeting native species of trees and plants in virtually all environments. They are often most abundant in forest understories, abandoned fields and field and forest edges. Several of these species, including Japanese knotweed and Phragmites, are especially skilled at outcompeting native tree and plant species in wetland and riparian areas. Invasive exotic plant species lower forests' biological diversity and impede their ability to regenerate and respond to disturbance. Their presence lowers the utility of floodplain forest habitat for wildlife, impedes the natural successional processes and decreases the health of floodplain forests.

Floodplains in Vermont are especially susceptible to invasive exotic plant species for several reasons. These are frequently disturbed naturally communities, with ice jams and periodic flooding events regularly visit these areas. Because of these flooding events, they feature a high incidence of exposed soil, and a high nutrient availability, which encourages the growth of invasive plants. Finally, the linearity of many areas of floodplain forest means that it features a higher proportion of "edge," where invasive plants are generally very competitive. In a healthy floodplain forest, disturbances are responded to by establishment and release of the regeneration of native species. However, where invasive exotic plants are established they often inhibit this response. The result of this is a disruption of floodplain forests' ability to regenerate, which in turn threatens their long-term viability.

Purpose:

The purpose of this project is to engage landowners and stakeholders in a collaborative restoration project targeting a section of floodplain forest near the mouth of the Winooski River. This will include making a collaborative restoration plan for this area that spans across all participating landowners' properties. Additionally, depending on the specifics of the different properties involved in this project, actions may include taking active measures (including a variety of mechanical and chemical means) to control invasive exotic plant species, the revegetation and maintenance of stream buffers in the project area, and creating structures strategies to ensure that ongoing monitoring and maintenance of these areas occurs.

Beyond the inherent benefits of the restoration of these riparian areas, this project will have tremendous educational value. Invasive exotic plant infestation is a problem that is increasing in severity in all areas of Vermont, and one that must be addressed on a large scale. By increasing public awareness of these species and how to manage them, we hope to inspire Vermonters to take measures to control these species. We also hope to help landowners understand how these invasive species affect other resources that they may value, such as clean air, clean water, a clean Lake Champlain, fish, wildlife, RTE species and the recreational and aesthetic enjoyment of healthy forests.

Project Area:

This project will span both the northern and southern banks of the Winooski River from the bridge in downtown Winooski to its mouth. These 10 miles of river (approximately 5 miles as the crow flies), encompasses riparian lands and historic floodplains located in Burlington, Colchester, and Winooski.

The project area features lands owned by The Winooski Valley Park District (WVPD), the City of Burlington, The State of Vermont, the Intervale Center, and the Vermont Land Trust (VLT), in addition to a number of private landowners.

This area hosts a slew of state-listed rare threatened and endangered (RTE) species and uncommon species of many taxa, and several natural communities of statewide significance. Most of the project area is infested with a wide variety of invasive exotic plant species.

Sections of the project area to the south of the Winooski River feature the historic homestead of Ethan Allen, and a recreation trail network connecting downtown Winooski to Intervale Road in Burlington and to Colchester via the Route 127 bike path. Several areas on both sides of the river are used for commercial and community agriculture.

Resources:

While all capacity and funding that can be contributed by partners for this project is more than welcome, the goal for this project will be to work with the Winooski Natural Resource Conservation District (WNCD) to obtain grant funding from a variety of sources for planning and stewardship activities. There are a number of potential avenues for this funding.