



October 2011

Northern Forest Watershed Incentives Project: Ongoing Programs in the Crooked River Watershed

Forests are essential in ensuring a sustainable supply of clean safe water for humans and wildlife. Forests absorb and store rain and snow, prevent soil erosion, and filter sediment and harmful pollutants keeping our water clean and safe. Continued conversion of forestland to homes, businesses, and other uses puts the future availability of clean water at risk. Funded by grants from the United States Department of Agriculture, the Harold Whitworth Pierce Charitable Trust, US Endowment for Forestry and Communities (via the Northern Forest Center), and Jane's Trust, new and innovative tools and funding mechanisms to conserve forestland and sustain the many benefits that forests provide into the future will be developed and tested in the Crooked River watershed in Maine. The Crooked River watershed is densely forested and currently has outstanding water quality. However, the vast majority of forestland in the watershed is privately owned with no protection against future development and fragmentation. The Crooked River watershed is part of the larger Sebago Lake basin that supplies drinking water to more than 200,000 people around Portland and also provides a destination for water and forest-based outdoor recreation, supports an outstanding recreational fishery, attracts tourists from near and far, and enhances the quality of life for local residents.

Manomet Center for Conservation Sciences is working with partners to quantify the diverse benefits of clean water, educate landowners and water users about the relationship between land use and clean water, and develop innovative tools and market strategies to protect forests and maintain and enhance water quality. An overview of Manomet and partners' work in the Crooked River watershed is summarized below.

Clear Water Carbon Fund

The Clear Water Carbon Fund is a program that allows individuals and businesses to reduce their carbon emissions by planting trees next to streams and rivers in the greater Sebago watershed. Planting trees near streams achieves a dual purpose of improving water quality and fighting climate change. As the trees grow over time they will sequester (store) carbon from the atmosphere, prevent sediment and harmful substances from entering the stream, shade the stream, and provide valuable habitat for fish and wildlife. More details on the project can be found at clearwatercarbonfund.org

Partners: Western Foothills Land Trust, White River Partnership (VT), Northern Forest Center

Conservation Priority Index

The Conservation Priority Index is a GIS-based tool that scientifically evaluates the contribution of forests to clean water and identifies forested parcels that are most critical for maintaining clean water. The results of the Conservation Priority Index are being used to prioritize land protection efforts and guide landowner education and outreach programs.

Partners: University of Massachusetts Amherst, Western Foothills Land Trust

Identification of Potential Threats to Sebago Lake Water

A GIS analysis of the Sebago Lake Watershed identified locations of sand and gravel extraction and heavy industrial sites with potential contaminants (i.e. petroleum fuel site, salt storage, etc.) that may pose a potential risk to surface and groundwater resources. This risk assessment was based on the site's location near streams, rivers, lakes, and/or wetlands, in areas with shallow water tables, and within the recharge area of a public drinking water supply or within a sand and gravel aquifer. A "Gravel and Sand Atlas" was created to help identify and prioritize areas where restoration activities could provide significant water quality benefit.

Partners: University of Massachusetts Amherst

Green vs. Gray Infrastructure Analysis

A "green vs. gray" analysis quantifies and compares the costs associated with conserving, creating, or managing forests (e.g. green infrastructure) so they can continue to naturally provide clean water thereby minimizing or avoiding altogether the costs associated with investing in water treatment facilities (e.g. gray infrastructure). This study highlights the costs and benefits associated with land conservation and source water protection and can make the financial case for continued protection of forestland.

Partners: World Resources, Inc.

Crooked River Watershed Coalition (currently known as the *Crooked River Initiative*)

There are many different individuals, organizations, and government entities that play a role in protection of clean water in the Crooked River Watershed. Unfortunately, these groups don't often meet to discuss larger goals for the watershed. The formation a watershed coalition can provide coordination among these different groups and leadership to identify goals and create strategies to meet them.

Partners: Western Foothills Land Trust, Loon Echo Land Trust, Portland Water District

Assessment of Nature-Based Recreation Benefits

In addition to clean drinking water private forest lands in the Crooked River watershed support nature-based activities including fishing, boating, swimming, and wildlife habitat that sustain the tourism industry and enhance the quality of life of local residents. Quantifying the economic contribution of these many ancillary benefits of clean water can highlight importance of the river, raise awareness of the importance of forests, and recruit more support for watershed protection and enhancement projects. The Western Foothills Land Trust already reports that the recent activities in the Crooked River watershed has increased inquiries from landowners about land protection options.

Partners: Western Foothills Land Trust, ME Dept. of Inland Fisheries and Wildlife, US Fish and Wildlife Service

Portland-area Businesses Outreach

The high-quality water available to Portland-area businesses provides a superior and affordable raw material for businesses. We are working with areas businesses to communicate the relationship between forests and clean water and to better understand how the quality, cost, and availability of clean water influences their economic bottom line. This will help us quantify the importance of clean water to local businesses and scope potential funding mechanisms for watershed enhancement projects.

Partners: Maine Businesses for Sustainability

Evaluation of Costs and Benefits of Improved Practices

Timber harvesting, agriculture, road construction, and development alters the landscape and in some cases can threaten clean water and wildlife habitat. The adoption of improved practices (e.g. Best Management Practices, low-impact development strategies, restoration projects, etc.) can minimize the impacts associated with these activities and protect and enhance clean water. This evaluation provides guidance for landowners, land managers, drinking water utilities, and watershed groups to help them identify practices that provide documented benefits for protection of clean water and are cost-effective for landowners to apply and/or maintain. This evaluation is underway and will be completed in early 2012.

Partners: Forest Guild