



## Integrating Natural Resource Inventory and Outreach: The Transfer of a Replicable Watershed Model

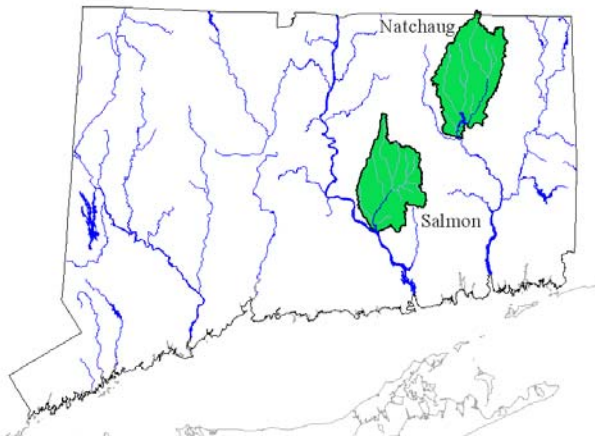
### BACKGROUND

Connecticut is a landscape dominated by non-industrial private forests in close proximity to competing land uses. Although a small state, Connecticut remains 60 percent forested and supports a forest products industry that generates over \$500 million annually.

However, resource managers have been challenged by forest fragmentation resulting from residential development and associated suburban sprawl. While this is not unique to Connecticut, the location of the Connecticut River and its tributaries, as well as the importance of their forest resources, have forced the CT-DEP Division of Forestry and other natural resource professionals and educators to confront these issues sooner than most other regions.

### LOCATION

The project will be focused in the Salmon River Watershed, located in south-central Connecticut, and the Natchaug River Watershed, located in northeast Connecticut in the Shetucket River System.



Salmon River and Natchaug River Watersheds.

The Salmon River is important in the Tidelands Region because of its broad range of tidal, riverine, and forested natural communities. It supports a high diversity of fish species, including healthy runs of native, anadromous fish as well as trout, both native and stocked. It is about 75 percent forested, but encroaching development from Hartford is threatening forest productivity and watershed health.

The Natchaug River is one of the most rural watersheds in Connecticut. It also supports a diversity of fish species with many native trout populations. However, it faces development pressures because of the influx of residents who have moved to the area as a result of commercial and economic activities in eastern Connecticut.

### ISSUES BEING ADDRESSED

Because of the varied development pressures and the threats of fragmentation and sprawl, there is a need to make people more aware of natural resources and green infrastructure. Data will be gathered and shared with local officials and landowners to assist in developing watershed resource plans that include the forest-related goals of reducing forest fragmentation and retaining productive working forests.

### GOALS

The project will test the hypothesis that a well-focused message directed to a clearly identified target audience within a specified geographic area will produce measurable increases in behavioral changes with respect to forest stewardship. A proven, watershed-based program model will be refined and expanded and will demonstrate how the latest remote sensing and GIS technologies can be incorporated into watershed natural resource inventories in ways that provide better data at a lower cost. Other goals include:

- Educate municipal officials and forest landowners on the links between land use and water quality.
- Develop a watershed natural resource inventory, including identifying and prioritizing unfragmented blocks of forest in the Salmon River Watershed and tracking fragmentation patterns over time.
- Educate and advise local Watershed Committees on the importance of sustaining a working farm and forest mosaic and protecting biological diversity in the watershed.
- Refine and implement a non-industrial private forestland (NIPF) outreach campaign.
- Develop and test public and private applications for NASA-developed technology.

### METHODOLOGY

Since 1995, the University of Connecticut Cooperative Extension and its partners have been engaged in watershed projects. The following techniques will be accomplished using knowledge and experience gained from the Chester Creek and Eightmile River Watershed projects.

Since 1999, the Northeastern Area and the Northeastern Area Association of State Foresters have sponsored a cooperative challenge grants program to promote watershed health and restoration through the conservation, restoration, and sound stewardship of trees and forests.

- Acquire remotely sensed imagery and satellite data to examine forest fragmentation.
- Refine and apply the Eightmile River Watershed model to the Salmon River Watershed.
- Incorporate the latest GIS and remote sensing technology into the program model.
- Quantify the impacts of the effort and publish a manual describing the methodology as a guide for replication elsewhere.
- Develop and use watershed publications, videos, and web sites as outreach tools.
- Utilize local practicing foresters and wildlife professionals in delivering the stewardship message.
- Increase the adoption and implementation of forest stewardship plans that address watershed priorities while meeting NIPF owners' needs.
- Partner with the NASA Regional Earth Science Applications Center to develop a watershed natural resource inventory.

## OUTCOMES AND ACCOMPLISHMENTS

Although the project is still in progress, the following has been accomplished.

- Natural Resource Inventory maps have been prepared for both the Salmon and Natchaug Watersheds.
- An NIPF outreach campaign has been conducted in both watersheds. This has resulted in a Jeremy River Streamwalk project and the formation of the Pine Brook Watershed Council, among other community level activities.
- Through direct mailings, over 1,000 landowners received a survey to determine attitudes and behaviors related to conservation and forest stewardship planning.
- Landowners have received informational brochures, invitations to field day events, videos, and publications relating to forest stewardship.
- The Salmon River Watershed has been the centerpiece for discussions and field events at the annual Forest Resource Program Leaders and Extension Foresters meetings.
- Two towns have created new municipal Conservation Commissions in the Natchaug Watershed to carry forward a natural resource inventory and incorporate the results into town plans.

The project will educate local land use officials about using data in watershed resource plans that include forest-related goals, such as the reduction of forest fragmentation and the retention of productive, working forests. It will increase NIPF owners' knowledge concerning the importance of their actions in protecting clean water, and will increase their adoption of stewardship plans and practices. Eventually a manual will be published describing the methodology used to successfully implement the project.

## PARTNERS

- Connecticut DEP Division of Forestry
- Connecticut Forest Stewardship Program
- UCONN College of Agriculture and Natural Resources
- Non-point Education for Municipal Officials (NEMO) Program
- NASA Regional Earth Science Applications Center
- The Nature Conservancy
- The Connecticut Division of Wildlife
- USDI-FWS Silvio O. Conte National Wildlife Refuge

## FUTURE PLANS

- Landowners will receive a follow-up survey to determine changes in knowledge, attitudes, and behaviors related to forest stewardship.
- A second survey will determine the extent to which the watershed inventory data were incorporated into local land use plans in ways that sustain healthy, productive forests and promote watershed health.

### Project Contacts

Stephen H. Broderick, Extension Forester  
 Phone: 860-774-9600  
 Fax: 860-774-9480  
 Email: sbroderi@canr.uconn.edu

Donald H. Smith, State Forester  
 Phone: 860-424-3630  
 Fax: 860-424-4070  
 Email: don.smith@po.state.ct.us

Thomas Worthley, Forest Stewardship Program Coordinator  
 Phone: 1-888-30-WOODS  
 Fax: 860-345-3357  
 Email: tworthle@canr.uconn.edu

### Federal Contact

Dave Welsch, Forester  
 Northeastern Area State and Private Forestry (S&PF)  
 Louis C. Wyman Forestry Sciences Laboratory  
 271 Mast Road, P.O. Box 640  
 Durham, NH 03824-0640  
 Phone: 603-868-7616  
 Fax: 603-868-7604  
 Email: dwelsch@fs.fed.us

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