

# Eightmile River Watershed Baseline Monitoring Preparation and Planning

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## ABSTRACT

Sampling points were established for use in the Eightmile River Watershed that will be used to collect data in order to establish a baseline set of data. This data will serve as a beginning point for any further testing, and will allow for future experimentation as well as the detection of any problems in the watershed, including those that might not be detectable in any other manner.

The selection process involved the use of satellite mapping in order to find likely locations, and then visiting those locations to ensure that they fit certain criteria. Data was recorded on site, and then reviewed. A number of sites were selected, and then the most efficient route through all sites chosen was mapped.

## INTRODUCTION

The Eightmile River Watershed covers 62 square miles located almost entirely in the towns of Salem, East Haddam, and Lyme, with 10% of the watershed also shared between Colchester and East Lyme. The terrain is hilly and forested. The watershed itself is largely undeveloped, and its large tracts of unfragmented habitat provide a home to many different species of plant and animal life, many of which have some conservation importance. The bodies of water found in the watershed are primarily long, shallow, and somewhat marshy, and eventually join with the Connecticut River.

The Eightmile watershed provides prime habitat for many rare plant and animal species, and also serves as a beautiful scenic location for people to enjoy. The towns that share it are devoted to conserving the watershed, and for good reason. The watershed is mostly undeveloped, and current biological indicators suggest that the ecosystem is healthy. This unique and thriving watershed is an invaluable resource which could continue to serve both the nearby environment and communities that depend on it, provided that it is sufficiently protected.

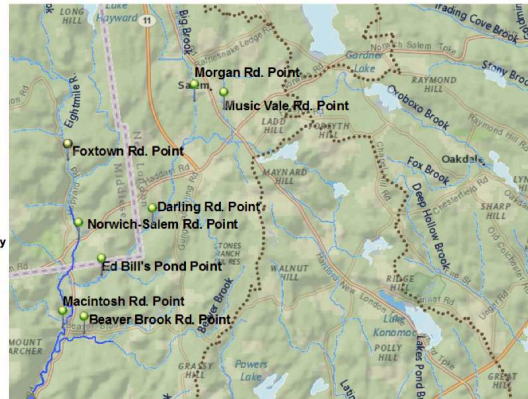
To that end, tests will be performed to establish a set of data that represents the watershed when healthy. Any variation from these levels can be detected and hopefully treated. Before this testing can be done, however, a fair amount of preparation is required, including the choosing of the test sites.



## MATERIALS AND METHODS

The goal of this activity was to establish a series of locations which would be used as testing sites. In order to establish a baseline set of data for the Eightmile River Watershed, little was needed to achieve this goal, and most of the objects used were relatively commonplace. In total, all that was needed to start establishing sample points were a collection of both road and waterway maps, transportation to the specified locations, a camera, GPS, and notebook to record information, and the use of the ArcGIS program to present that data.

The process of identifying good monitoring sites started with creating a list of possible locations, staying off-site. Any site had to fit a few guidelines: it had to be accessible with a five minute hike at most, near somewhere to park, on either public land or privately owned land where permission to work was given, preferably somewhere along one of the main waterways in the area. The waterway itself had to be reasonably sized, with a good flow speed, little to no marshy area, and preferably far from any permanent human interference. One site, however, was chosen because it was close to a dam that was going to be demolished, and would provide good before and after data. Using these guidelines, a map of the major waterways in the Eightmile watershed, a collection of road maps, and then the Google maps program, a series of potential sampling points was identified.



These sites were sent off to Patricia Young, the organizer of this study. They were checked for any problems that might not be visible from a map, including land availability (public, private, etc), unseen obstacles, problems with the watercourse at that point. Once approved or denied (in this case, an alternative was suggested), each site had to be checked and approved in person. Using mapping applications and GPS, each site was visited and checked for availability. GPS coordinates were taken on site, as were pictures. Notes about the river's flow, location, and surroundings were recorded. If an unexpected obstacle was apparent, an alternate sampling site was checked instead. It took four hours to visit every site.

Upon Completing the visual inspection, the notes about each site were emailed to Patricia Young for a final check. Each site was approved or denied based on these findings, and alternative sites were again suggested.

## RESULTS

The eight final sampling sites were located at:

- Foxtown Road, East Haddam
- Morgan Road, Salem
- Music Vale Road, Salem
- Darling Road, Salem
- Norwich-Salem Road
- Beaver Brook Road, Lyme
- Ed Bill's Pond, Lyme
- Macintosh Road, Lyme

After meeting with town representatives and members, it was determined which of the sampling sites would work, where we can access when the time comes, and, in the case of any problems, an alternative site nearby.



## CONCLUSIONS

Barring difficult weather or other issues, all of the sites determined to be useable will be part of the effort to establish a set of baseline data for the river and the watershed in the summer of this year. Over the course of a few weeks, a group of volunteers will run a variety of tests on the Eightmile River at the specified points, and this data will be used for future reference and testing. The variances in location of each site, along with other variable that will also be tested for, such as the natural changes in chemical composition due to weather, time of day, and temperature, will provide a very wide-ranging set of data that will serve to establish a very versatile research tool.

This preparation and the testing that will follow will be one more step taken to help conserve the valuable natural resources in Connecticut. The task performed here will help expedite the testing to come, and that in turn will help to ensure that future research can be performed and any problems detected before they become severe. This project will help to ensure the continued safety and health of the Eightmile River Watershed, and all the wildlife and important natural resources that call it home.

## REFERENCES

Thanks to Patricia Young, Program Director for Eightmile and Salmon River Watershed Monitoring, with the National Parks Service

Eightmile River Wild & Scenic Study Committee, Naational Park Service, Northeast region (2005). *Eightmile River Watershed Management Plan*.