

2020 CT Envirothon Current Issue Scenario

The Connecticut Department of Energy and Environmental Protection (CT DEEP) has determined that the land area that drains into the Willimantic Reservoir located in Mansfield, CT is one of the healthiest watersheds in Connecticut. The water from this reservoir provides drinking water for residents, schools and businesses for parts of Windham and Mansfield.

From a water quality perspective, it is less expensive to keep water from becoming polluted than it is to clean up polluted water. Therefore, the Natchaug River Watershed upstream of the Willimantic Reservoir is an area prioritized by the CT DEEP as being in need of an action plan focused on water quality and water quantity protection.

The Fenton, Mount Hope and Natchaug Rivers are the largest rivers that contribute to Willimantic Reservoir. The land drainage above the reservoir is approximately 164 square miles and includes parts of eight municipalities: Ashford, Chaplin, Eastford, Mansfield, Union, Willington, Windham and Woodstock. Each town makes and enforces its own regulations that must be followed as the town grows. These regulations must be compatible with state guidelines. However, when dealing with issues of water quantity and water quality, it often is more useful to work on a watershed basis rather than on a political boundary basis.

The 2020 CT Envirothon current issue scenario involves an area we will call the "upper Natchaug River Watershed," which includes the three rivers that join the Natchaug River in Mansfield Hollow Reservoir, plus the downstream portion of the Natchaug River between Mansfield Hollow Reservoir and the Willimantic Reservoir.

Your team will act as an advertising consulting group that specializes in environmental issues. You have been hired to develop an advertising catch phrase (slogan) as part of an outreach campaign to engage residents and businesses to encourage them to become informed on the development of a multi-town water pollution prevention plan. An informed public will be more likely to adopt and follow the final plan.

In order to develop this advertising catch phrase, you will need to understand the issues being considered in the development of a multi-town pollution prevention plan. This plan will focus on the benefits of a healthy watershed and will be designed to benefit both humans and nature. Carefully read the background below. Use reference materials provided on the Current Issue links on the CT Envirothon website, the NCF Envirothon website (<https://envirothon.org/the-competition/current-competition/>) and do some of your own research.

Background

The Windham Water Works draws surface water from the Willimantic Reservoir. It is the source of drinking water for 22,000 customers that live, work and attend school in the Towns of Mansfield and Windham, CT. Their use of these water resources for drinking water mandates that all the land use upstream of this surface drinking water supply must abide by CT Public Health Code 19-13-B32 and are subject to restrictions for Class AA watersheds under section 22a-426 of the Connecticut General Statutes.

Most residents and business upstream of the Willimantic Reservoir do not get their water from Windham Water Works. Their drinking water comes from private wells. Any strategy for protecting

downstream water quality and quantity must consider the property rights of the upstream property owners and be presented as a benefit to them.

In addition to the Willimantic Reservoir being a drinking water resource, the Natchaug River Watershed is habitat to numerous species of fish and other aquatic organisms, birds and other wildlife. Several streams in the watershed are managed by the CT DEEP for recreational trout fishing. Forests are managed by both the State of Connecticut and private landowners for timber and wildlife. Numerous passive recreation opportunities available to the public, including hiking, swimming, camping, mountain biking, boating, fishing, hunting and nature photography, are available. Large areas of publically owned land include portions of the Natchaug and Nipmuck State Forests and Bigelow Hollow State Park and Mansfield Hollow State Park. Most of the remaining land is privately owned and subject to development pressures.

As part of your oral presentation, you will need to demonstrate your understanding of the following elements:

1. Explain what a watershed area is, and provide a map outlining the Natchaug Watershed excluding the part below the Willimantic Reservoir.
2. Using a graphic of the hydrological cycle, explain how ground water and surface water are connected resources. What are some of the common threats to these resources in the Natchaug Watershed?
3. Explain why both water quality and water quantity are an important foundation in a healthy ecosystem.
4. Describe 3 different water quality indicators that may be used to determine watershed health in the Natchaug River Watershed.
5. Explain why stream flow is an important indicator of a healthy aquatic ecosystem and what indicators are in use to assure adequate stream flow.
6. Describe:
 - (a) the main types of current land uses in the eight towns within in the Natchaug River Watershed upstream of the Willimantic Reservoir
 - (b)-how the landowners can prevent polluted runoff from degrading water quality caused by things they do on their land.
 - (c) how can these land care practices can also improve habitat quality for non-human land uses?
Note: Incorporate information on soils, forestry, aquatics and wildlife into your answer, discussing how these specific considerations would be a necessary part of a healthy watershed plan.
7. Describe differences between the roles and objectives of local, state and national regulations for managing natural resources and the importance of each type of regulation in water resource protection.
8. What obstacles (social, economic and/or political) may be a challenge for the development of an inter-municipal healthy watershed plan for the Natchaug River Watershed?

Once you have researched the above eight elements, develop a marketing catch phrase (Do not use "Naturally Natchaug" because it is already in use.) that promotes the goals of a healthy watershed plan. Include your catch phrase on your presentation board, along with materials to support your understanding of a healthy watershed.

Note: Teams must provide a list of Works Cited in MLA format to the Envirothon volunteer along with your note cards when you sign in with your presentation board. Do NOT put your school name on this document. Your assigned competition team number will be used to match this document to your team's presentation board.