2012 Municipal Inland Wetland Commissioners Training Program - Segment 3

Benthic Macroinvertebrates:
What These Organisms Can Tell Us about the Health of a Stream

Relevance of Such Information to Connecticut's Municipal Inland Wetlands Agencies: A Few Reminders

I. Overview

A. Streams are naturally changing places, they are dynamic. For example, if high flows or a flood occur, the stream channel will change shape and the stream may even carve a new path through the watershed

B. A stream is a great way to monitor what is going on in a watershed. Streams can be used as an indicator for the health of the entire watershed

C. Humans can change streams in ways that streams may not be able to recover from

i. Removing stream bank vegetation resulting in increased erosion and turbidity

ii. Straightening a stream channel so that a bridge can be built less expensively impacting stream habitat

iii. Increasing storm water inputs changing the morphology of the stream

iv. Releasing pollutants harming organisms living in the stream

D. By examining organisms that live in a stream we can learn about the quality of water and obtain data that allows us to:

i. document water quality changes over time

ii. screen for potential water quality problems

iii. assist with local planning decisions about where to site certain activities (i.e.: sewage treatment facility)

iv. assist a town to set priorities for pollution control or water quality improvement

II. How does this relate to a municipal inland wetlands agency's authority under the Connecticut Inland Wetlands and Watercourses Act (IWWA)

A. *Factors for Consideration - Section 22a-41*

i. The IWWA allows a municipal inland wetlands agency to consider all relevant facts and circumstances when regulating, licensing and enforcing the law. Subsection (a) - examples of factors to consider:

a. The relationship between the short-term and long-term impacts of the proposed regulated activity on wetlands or watercourses and the maintenance and enhancement of long-term productivity of such wetlands or watercourses

b. …, and any mitigation measures which may be considered as a condition of issuing a permit for such activity including, but not limited to, measures to (A) prevent or minimize pollution or other environmental damage, (B) maintain or enhance existing environmental quality, or (C) in the following order of priority: Restore, enhance and create productive wetland or watercourse resources

ii. The IWWA allows a municipal inland wetlands agency to consider all relevant facts and circumstances when regulating, licensing and enforcing the law. This includes determining if an activity in the upland can be considered a regulated activity and establishing on the record the affect or impact such activity will have on the *physical characteristics* of a wetland or watercourse

a. Subsection (c) allows municipal inland wetlands agencies to consider the impacts or affects to aquatic, plant or animal life and habitats in a wetland or watercourse

b. When the regulated activity is outside the wetland or watercourse, subsection (d) requires municipal inland wetlands agencies to:

- First - make a finding that such activity will likely impact or affect the *physical characteristics* of such wetland or watercourse

- Second – if such a finding is made, can consider the impacts to aquatic, plant or animal life and habitats