

WETLANDS DEMYSTIFIED
Erosion and Sedimentation Control
By Paul Hennen

The purpose of erosion and sedimentation (E & S) controls is to limit the amount of sediment pollution entering into Connecticut's wetland and water resources. In Pomfret the Planning and Zoning Commission is responsible for insuring that a comprehensive E & S plan is submitted with the permit application if any development activity would involve commutatively more than one half acre. The Wetlands Agency reviews E & S controls from a different perspective but with the same goals. More specifically, the Wetlands Agency is charged with protecting wetlands and watercourses that could be adversely impacted by a construction activity of any size as a result of inadequate or ineffective E & S controls. The Wetlands Agency considers it a standards construction management practice to prevent pollution of any type from damaging the wetlands environment. In this case the pollutant is sediment, as defined in our regulations.

So what is all the fuss about? You know the saying- a little dirt never hurt anything. For us, washing one's hands or taking a bath takes care of the problem. For a fish, however, a little dirt in your gills means you are dead. We all appreciate the fact that the erosion process occurs when water, wind or some other disturbance displaces soil. In other words, soil is dislodged from one place and put in motion to somewhere else. Sedimentation results when these detached soil particles are deposited. If these deposits occur in a wetland or watercourse we have a problem. Soil filtration and water quality are decreased. Fish and other fragile ecosystems are degraded. Excess nutrients and other contaminants that may be contained in the eroded soil, such as animal wastes, fertilizers and chemicals picked up from parking areas, logging operations and construction equipment, are particularly damaging to wetlands and our water resources. In addition, if sedimentation is severe, decreased water depths of our brooks and ponds will occur.

Construction activity is most often associated with damaging the environment and thus, requiring E & S control planning. Poor farming and logging practices can be a problem as well. Heavy rains and strong wind storms may also be factors after the land has been disturbed. The removal of vegetation increases the potential for erosion to occur, should these weather events occur. Compaction of underlying soils by construction machinery causes decreased infiltration of rainfall causing rainfall to move along the ground, increasing the potential for erosion. Studies have shown that the direct erosion impact for any particular area or storm event may appear to be minimal in the short term, but the cumulative affect may be substantial. It has been said that the buildup of sediment pollution in our lakes and waterways is one of our State's most persistent problems. Huge sums of money are required annually in this country to mitigate these impacts, and

even more sadly, there appears to be little appreciation that money alone cannot mitigate the harm, once done to our environment by uninformed individuals. That is why close oversight of E & S control plans by our commissions and agencies is so important.

Fortunately, our Town's commissions and agencies run a pretty tight ship when it comes to ensuring that adequate E & S controls are in place before any regulated activity is allowed to begin. Engineering firms routinely design site plans that address E & S issues for large projects. On the other hand, the project may not warrant the cost of such planning. The average homeowner should be aware that even a simple project on one's property may require an E & S control plan as part of his or her permit application. If your project disturbs the ground and is located up hill from a wetland or watercourse, you may need some kind of E & S control in order to avoid polluting these areas. Should it be determined that you need a permit from the Wetlands Agency, and that will always be the case if your project is within 150-feet of a wetland or watercourse, you can consult with a member of our staff who can advise you as to what is needed.

Geotextile fabric and hay bale fences are two types of simple barriers commonly used to intercept and retain sediment and to decrease water velocity that is a major cause of erosion. A silt fence using geotextile material attached to wooden stakes is considered sufficient to prevent the movement of sediment in many cases. The fence should be located 5 to 10 feet from the bottom of the slope. Stakes should not be more than 10 feet apart and driven approximately 12 inches into the ground. It is important that the bottom of the fence be in a trench at least 6 inches deep and the trench backfilled. The geotextile fence is not considered appropriate in areas where rock, frozen ground or hard surfaces are present. A hay bale fence is more appropriate in these circumstances or where a sturdier fence is indicated. If used, a 4-inch trench should be excavated for the bales to rest in and then backfilled. Each bale is then staked with two wooden stakes driven 18-inches into the ground. While these barriers are a temporary measure to prevent the movement of sediment, they must be checked frequently, especially after a major rain storm, to ensure they are functioning properly.

There are circumstances that require more elaborate and, in some cases, permanent E & S controls. If construction activity changes the land to the point that storm water drainage becomes a factor and wetlands or watercourses are threatened, measures including retaining walls, culverts, detention and catch basins, swales and various applications of riprap may be required. The design and installation of these types of E & S controls are beyond the scope of this article. Where such measures are needed, engineered plans are usually required, and needless to say that can become very expensive.

Should readers need a more comprehensive guide dealing with E & S control measures than provided by this article, they should refer to the *2002 Connecticut Guidelines for Soil and Erosion Control* by the Connecticut Council on Soil and Water Conservation in cooperation with the Connecticut Department of Environmental Protection (DEP). The guide is available for review in our office at Town Hall.

On a separate note, we are now in the final stages of updating our regulations. The Connecticut DEP issued the fourth addition of its model regulations for wetlands agencies some months ago that we must implement. As a result there are changes needed to our wetlands regulations. In my next article I will address the topic of forestry, and how that industry relates to the wetlands permitting process. My thanks to Katrina Rutkowski for her review and comments concerning this article.