



Soils exposed from land grading activities are very vulnerable to erosion



Silt fences prevent the off site transport of sediment

What's the Big Deal with a Little Mud?

People may ask themselves that very question when they hear of all the regulations and preventive measures that are involved to reduce erosion and sedimentation during construction activities. The fact of the matter is that sediment, by volume, is the number one pollution problem in our state's waters. But sediment and erosion is natural isn't it? Yes erosion of the land by water, wind or chemical action is a natural process and because erosion is a natural process [in undisturbed areas](#), nature is able to assimilate naturally occurring sediments without permanent adverse effects.

Natural erosion is a slow process compared to accelerated erosion on disturbed sites. Erosion rates from natural areas such as forests are typically less than 1 ton/acre/year, whereas erosion from construction sites range from 7.2 to 500 tons/acre/year. That would mean that a 10 acre patch of woodlands in our Township would lose approximately 10 tons of material in one year. But a construction site with 10 acres of disturbed land could lose from 72 to 5,000 tons of material in one year. That is a great deal of sediment flowing into our streams and creeks. Some other activities that cause accelerated erosion include surface mining, agricultural plowing and tilling, urban and suburban stream banks and logging activities.

Some of the problems that may be caused by sediment pollution include the following:

- Fish have gills which extract oxygen from the water. The gills become clogged when the water becomes too clouded with sediment
- The sediment can cover fish eggs and the gravel nests they rest in.
- The sediment can destroy the food supply for many species of fish by covering aquatic insect habitat on the stream bottom.
- Sediment clouds the water and deprives plants of light needed for photosynthesis.
- Sediment can carry other pollutants such as heavy metals, pesticides and excess nutrients that are spread by water action and cause problems not only at the source, but also downstream.

-The excess nutrients can cause algal blooms to form and speed up the water bodies natural aging process (eutrophication).

-The excess sediment can also reduce the depth of a body of water resulting in warmer water temperatures.

-Larger than normal sediment loads can result in eroded and unstable streambanks, which may lead to greater accelerated erosion and destruction of aquatic and riparian habitat.

-Excess sediment deposits in stream and rivers may necessitate the dredging of reservoirs or other bodies of water. It is estimated by the DEP that for every dollar spent keeping soil stabilized, taxpayers save \$50 to \$500 in dredging costs.

-The sediment will increase public drinking water treatment costs or may render unfiltered drinking water supplies harmful for consumption.

-Sediment pollution also costs the Commonwealth residents tens of million dollars each year in lost revenue associated with recreational fishing because of degraded water quality and reduced fish habitat. Even other forms of tourism may suffer including hiking, biking, rafting, swimming and sightseeing.

-The loss of soil at a given site reduces or eliminates the remaining soil's ability to provide nutrients, regulate water flow and combat pests and disease.

In 1972, and amended in 2000, the Environmental Quality Board (EQB) approved statewide regulations that help combat the problem of accelerated erosion and sedimentation. The regulations are in Chapter 102 of the PA Code which can be found at www.pacode.com. The regulations are authorized by the Clean Stream Law and prohibit the discharge of any pollutant into the waters of the Commonwealth. Under these regulations, anyone conducting earth disturbance activities are required to use best management practices (BMPs) to minimize the amount of sediment leaving the site. When there is an earth disturbance activity, an Erosion and Sediment Control Plan (E&S Plan), that uses BMPs, is required and must be properly designed, implemented and available on site. As a conservation district, the Allegheny County Conservation District (ACCD) is responsible to review E&S Plans, conduct trainings, perform site inspections and take complaints on erosion and sedimentation matters in Allegheny County.

If you have any questions concerning accelerated erosion and sedimentation please contact the Soil & Erosion Technician at the Allegheny County Conservation District.
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