

Best Management Practices

helping aquatic species at risk Sediment Traps

The Sydenham River in southwestern Ontario is the only major watershed which lies completely within the Carolinian Life Zone and is relatively undisturbed by industrial development. This has made the river a biological treasure. The Sydenham River supports an incredible variety of aquatic life, or what we call biodiversity. At least 82 species of fish and 34 species of freshwater mussels have been found here, making it one of the most species rich watersheds in all of Canada. Several species in the Sydenham River are found nowhere else in Canada, and some remain at only a few locations globally. Many of these species at risk have been nationally listed as endangered, threatened, or of special concern by the Committee on the Status of Endangered Wildlife in Canada. You can help too. By adopting Best Management Practices (BMPs), you can help protect the Sydenham River and its tributaries. This series of fact sheets will assist you in deciding which BMPs are right for your property.

Sedimentation is a significant threat to the aquatic habitat of the Sydenham River. Sedimentation is the settling of excessive amounts of sediments in the river channel. Factors causing increased sedimentation in the Sydenham River watershed include erodible soil types, agricultural land use, construction and stormwater runoff from urban areas. The working of the land decreases the soil stability and causes large amounts of the soil to be washed into the river during rain runoff. This increase of sediment in the river results in poor living conditions for the fish and mussels as well as insects of the river. Mussels living in the river bottom are coated with the sands and soils and are suffocated. Fish spawning beds are no longer ideal because of the sediment covering of the rock bottom, and therefore the eggs do not have the protection pro-

- Technical advice and grants may be available to assist in implementing Best Management Practices on your property.
- If your project involves work in or near a watercourse, you may require a Fill, Construction or Alteration to watercourse permit from the Conservation Authority.
- Call before you begin your project.

“Working Towards Healthy Watersheds”

vided by the rock and rubble. The aquatic insects are smothered by the blanket of sediment that settles on top of them. The sediment increase disrupts the whole food chain of the river and decreases water quality; however, there is a way in which the sediment transfer can be reduced. A sediment trap keeps the productive soil in the field and is a cheaper alternative to dredging drains or the watercourse. A sediment trap works to filter water and reduce the accumulation of sediment downstream. Runoff water laden with the sediments it has carried from the field or site enters the sediment trap which is a temporary ponding area with a gravel or raised outlet. The runoff water stays for a period of time, allowing the sediments to settle and remain within the trap. Then the water, with a decreased sediment load, continues on its way and travels to the river. As a result, the river does not suffer from the full effects of sedimentation and has a greater ability to sustain the life within it.

A sediment trap is located in the lowest point of the field, on the edge of the site from which the sediment is coming. In many cases the sediment trap should be used in conjunction with several water diversion features, such as a grassed waterway, or a berm that will direct the flow to the trap. The trap is formed by excavation or by constructing an earthen berm or embankment perpendicular to the flow. The size of the trap is determined by finding the sediment storage volume for the area using the Universal Soil Loss Equation and assuming a minimum one year sediment accumulation period. The depth of the trap is a maximum 1.5 feet for

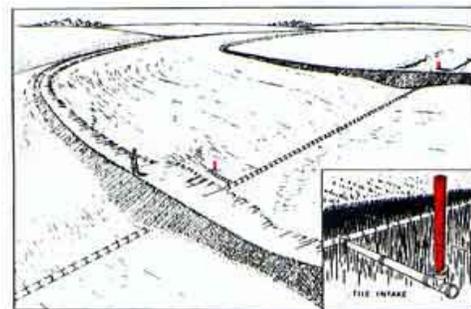
sediment accumulation, plus 2 feet on top of that for settling before overflowing the spillway. The side slopes of the sediment trap should not exceed a 3:1 ratio.

The berm or embankment should be seeded or mulched to stabilize it. The embankment should be 5 feet in height as measured from the base of the stone outlet. This outlet is located at the low point and is comprised of aggregate stone or rip rap placed on top of a geotextile filter cloth.

The sediment trap is a temporary structure. Sediment accumulated in the trap should be removed once the volume of sediment has reached the ½ full mark for the trap area. Do not allow it to exceed this mark as it will result in excessive amounts of sediment in the watercourse. Regularly inspect and maintain the sediment trap to ensure it is working properly. This will provide the river and its inhabitants with increased health and ability to survive, and return productive soil to the fields.

Surface Inlets

In combination with berms or terraces, a surface inlet such as a Higgenbottom drain, can trap sediment from sheet and gully erosion while draining off the excess ponded water.



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