



Erosion and Sedimentation Control

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Introduction

Background Soil is subject to natural weathering and erosion. Natural, or geologic, erosion by water, wind and ice has been occurring at a relatively slow rate since the planet was formed. Excepting some cases of shore and stream channel erosion, natural erosion occurs slowly, shaping the landscape century by century, maintaining an environmental balance. Construction activities and massive earth-moving projects accelerate erosion dramatically, mainly by exposing large areas of soil to rain and running water. If this runoff is not properly treated, the result is often serious siltation of nearby watercourses. the results are degradation or destruction of fish and wildlife habitat, and water being less useful for water supplies, navigation and recreation. For a more detailed explanation, see Appendix A. Because all Nova Scotia watercourses, including rivers, lakes, ponds, and marshes, are protected by law for public use and delight, the Nova Scotia Department of the Environment recognized the need to prepare an erosion and sedimentation control handbook as part of its educational program to promote protection of the environment. This handbook is intended to aid in the design and construction of appropriate erosion and siltation control measures to prevent sedimentation of local watercourses. It should be used by persons with practical experience and technical training in this area. As each site and project differs in soil, topographic and climate. This handbook is not designed to provide precise instructions for every construction scenario.

Extensive use of mathematical soil loss prediction models throughout North America has resulted in recognized values assigned to rainfall, soil credibility and topographic factors, for various areas and soils. When multiplied, these factor values provide an estimate of the annual soil loss from a site, and when combined with an erosion control factor, they're going to predict the relative reduction in the estimated annual soil loss. An erosion control factor of 1.0 means no erosion controls are used, such as when clearing or grubbing a site results in removal of all vegetation and thus the basis zone, leaving the soil without protection against rainfall and runoff. Measures such as the use of certain types and rates of mulches, and methods of revegetation are assigned factor values but 1.0. as an example, if an erosion control factor of 0.01 was assigned to the baseline, or completely undisturbed, condition of a construction site, and a factor of 1.0 was assigned to the disturbed construction Site condition, the predicted annual erosion losses would be 100 times greater from the construction site. However, the predicted losses could be decreased to an acceptable level by implementing common erosion control measures. this instance, although more simplified than actual soil loss prediction techniques, nonetheless illustrates the relative merits that erosion and sedimentation controls implemented on construction sites could achieve. The factor values haven't been rated to Nova Scotian conditions.

Whenever mineral soil is exposed, loss or movement of that soil is possible from the actions of rain, snowmelt or wind. All land is found during a watershed with most runoff reaching a stream, river, lake or coastal water. Eroded soils and other pollutants are often transported and deposited into these resources resulting in damage to fish habitat in streams and movement of pollutants, like phosphorus, to lakes.

DEP uses the Erosion and Sedimentation Control Law to support education efforts concerning the importance of abrasion control and promote the use of best management practices (BMPs) in watersheds, both within and beyond immediate shore land areas.

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