

Managing soil and edaphic factors upon which vegetation depends continues to be a challenge at all sites of the Nation's Capital. Jim Patterson, Research Agronomist, cooperates in the National Turfgrass Evaluation Program by providing and maintaining field test plots on the Mall and grounds of the Washington Monument where diverse turfgrass genotypes of Kentucky bluegrass, perennial ryegrass, tall fescue, fine leaf fescue and other turfgrass varieties are subjected to the impacts of heavy visitation. These evaluations have resulted in improved turfgrass selections for NCR as well as for NPS sites in other regions.

Patterson is using a micromorphologic technique to observe petrographic thin sections of compacted soils. The sections will be analyzed microscopically to determine particle orientation under compacted soil conditions, the void:solid ratio, presence or absence of soil crusting and the effects of aeration techniques on compacted soil.

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John Short, soil scientist, has begun a study of the physical and chemical characteristics of the highly man-influenced soils of the Washington Monument grounds. These soils have properties unlike those of nearby natural soils because of the disturbance associated with their formation and their continual manipulation through management. The goal of the study is to improve our understanding of "urban" soils, and to classify them, using criteria developed to highlight their unique properties.

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Another soil research project has been initiated to characterize atmosphere of Washington Monument grounds soils. The compacted nature of these soils alters the atmosphere and adversely affects plant root growth. The goal of the project is to determine the extent of changes to soil atmosphere caused by compaction, and the efficacy of methods used to alleviate soil compaction.