

How to Use Soil Survey Information

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Soil scientists have been working in Michigan since the early 1900's collecting information about the distribution and properties of soils that occur throughout the State. A great deal of public resources have been committed to the Cooperative Soil Survey program that has produced the most comprehensive data base of soils information available to the public. If soil properties are important in the management or design of a particular land use, the Soil Survey is the best, and probably the only, source of information available. Therefore, we should be aware of what information is available and what interpretations can be made about the soils in the geographic location of interest.

Soil Surveys are made by soil scientists walking over and observing the steepness, length, and shape of slopes; the general pattern of drainage; the kind of crops and native plants growing on the soils; and the kind of bedrock or glacial material available for soil development. Many holes are dug to study the soils and their properties. From these more detailed observations, the soils that occur in the area are determined. By associating landscape pattern and land use together with observable soil properties, soil maps indicating the types of soils occurring in the area are constructed.

What are the soil properties important to know when making a land use interpretation? Of all the soil properties, the three most important are: 1. texture (proportion of sand, silt, and clay); 2. color as it relates to the amount of organic matter present in the soil and as an indication of the likely aeration status of the soil; and 3. landscape position (relative to its surroundings; is it flat or sloping, higher or lower). This information is available as well as interpretations for particular uses of soils.

The Soil Survey Report consists of two parts; the soil maps indicating what soils occur where, and the data and interpretation tables for each of the soils. What data and interpretation tables are available that would be of interest to a Turf Manager? The data table listing the physical and chemical properties of the soils would be the most used. In that table such things as clay content, soil bulk density, plant-available water, soil pH, and organic matter content are given. These are soil variates needed when thinking about developing an irrigation schedule, or considering the application rates of particular kinds of pesticides, for example. Interpretations tables available that would be of use include: Environmental plantings (suitable plant species for shaded areas, roadsides, steep banks); Recreational development (suitability for golf fairways); Building site development (suitability and problems with lawns and landscaping); Construction materials (soil as source of sand, gravel, and topsoil); Water management (features affecting drainage and irrigation); and Soil and water features (flooding, depth of high water table). As you can see, there is much soil information available that is applicable to the Turf Manager.

If Soil Survey Reports are so useful, where can they be obtained? Approximately two-thirds of Michigan Counties have modern Soil Survey information available with much of the remainder having older, but still useful Soil Survey Reports available. Soil Survey reports can be obtained from either the

Cooperative Extension Office, the Soil Conservation Service or the Department of Crop and Soil Sciences, Michigan State University.

If you are a Turf Manager and have a need for soils information, I encourage you to obtain a copy of the Soil Survey Report for your county and become familiar with its contents.