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## Standard Terminology Relating to Soils and Turfgrass Terms of Natural Surfaces for Sports<sup>1</sup>

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### 1. Scope

1.1 This terminology defines soils and turfgrass related terms for use in the development of standards for sports and natural playing surfaces. This standard includes soils and related agronomic terms that pertain to natural surfaces used for sports and may include those surfaces supporting the growth of turfgrass or unvegetated (bare) playing surfaces that are constructed with natural materials.

1.2 The terms defined in this terminology standard are appropriate for use by sports field development professionals, owners and institutions, installers and contractors and other practitioners in matters concerning natural surfaces evaluations, test methods, specifications, maintenance and construction.

### 2. Terminology

**aeration, *n***—condition and sum of all processes affecting soil pore-space gaseous composition, particularly with respect to the amount and availability of oxygen for use by soil biota or soil chemical oxidation reactions, or both.

**aeration, *v***—practice to mechanically restore a soil to a condition where gas and water permeability rates are improved and bulk density is lowered (decompaction) by the use of devices (spikes, cores, tines, air-jets, water-jets) which penetrate into the soil profile. See also **aerification, soil and cultivation, turf**.

**aerification, soil, *n***—mechanical process to relieve soil compaction. This term is often used synonymously with aeration, *v* (that is, mechanical aeration). See also **aeration, v**.

**bulk density, *n***—mass of dry soil per unit bulk volume. The value is expressed as Mg per cubic metre ( $\text{Mg m}^{-3}$ ) or gram per cubic centimetre ( $\text{g cm}^{-3}$ ).

**cultivation, turf, *n***—practice of disrupting the soil by mechanical means without turning or excessively disrupting the sod.

DISCUSSION—This may include such practices as spiking or solid-tine aeration, coring or hollow-tine aeration, grooving or slicing, or drilling.

It might also include methods to inject water or air into the soil to create channels, holes, or fissures or break up the soil structure, or a combination thereof.

**coring, *n***—process in which a hollow spike (pipe) tine is inserted more or less vertically into the soil using a mechanical aerator machine.

DISCUSSION—Hollow tines are normally cylindrical and have a sidewall cutout which allows for the soil core to eject the previous soil core in a continuous process as the core is pushed into the soil. The end result is that the turf surface is littered with soil cores having a plug of turf attached to the one end. These cores can be removed or left to dry and then broken up using some type of drag. A subsequent mowing may also break up the cores but caution should be used to limit the hazard from flying debris.

**dethatching, *n***—mechanical process used to remove and reduce the amount of thatch in a turfgrass installation. This could include a mechanical “verticutter,” power rake, spike drag, or even shallow-depth core cultivation. See also **verticutting**.

**drilling, *n***—practice which combines principles of both spiking and coring. Instead of pushing a solid or hollow tine into the soil a specially modified drill bit is drilled into the soil to create a hole and also to remove the soil from the rootzone in the process.

DISCUSSION—Drilling is sometimes used to eliminate the propensity to create a somewhat compacted layer at the bottom of the tine penetration depth or to reach greater soil profile depths than is typically possible with standard-tine aeration machines.

**gravel, *n***—commonly used to denote spherical, cube-like, or equiaxial aggregate materials with an equivalent diameter  $> 2.0$  mm and  $< 7.6$  mm. More correctly used, this classification refers to “rock fragments” classed as pebbles in the Glossary of Soil Science Terms (1997).

**grooving, *n***—see **slicing**.

**matric potential (soil water potential, or pressure, head), *n***—amount of work that must be done per unit of a specified quantity of pure water in order to transport reversibly and isothermally an infinitesimal quantity of water from a specified source to a specified destination.

DISCUSSION—If the specified quantity is volume, the potential is referred to as pressure (Pa). If the specified quantity is weight, the

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