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SUSTAINABLE SOILS

Dr. Rattan Lal, with The Ohio State University's School of Environment and Natural Resources, and a globally recognized expert in soil science, says the key step toward sustainability rests with sustainable soil management.

"Sustainable soil management is the engine for economic, environmental and social sustainability," Dr. Lal says.

While there's a growing interest in the concepts and philosophy of sustainability, there's a lack of clear direction concerning what to do about it.

It seems the landscape is the best place to begin walking down the path of sustainability. This means managing landscapes from the planning, design and management point of view. Note, I didn't say "turfgrass management" or "golf course management." The foundation for a sustainable landscape management is the soil on which a landscape is grown and managed. The soil should be the main, first focus within any landscape.

As a wildlife biologist I always focused on wildlife and biological diversity. It took me awhile to appreciate that soil – healthy soil – is the most diverse habitat on Earth. In many regards, our present management activities are killing the planet's most important and most diverse habitat.

According to the International Sustainability Council (ISC), a sustainable landscape is an economically viable landscape that provides engaging and enjoyable environments for all people and living organisms that utilize the landscape. A sustainable landscape is planned, designed, constructed and managed in ways that enhance the property value and the local community and reduces or eliminates impact to the soil and other natural resources. It is managed in ways that provide balance between optimum human use and enjoyment, good stewardship of

the environment, while providing economically viable environmental services. Management strategies are based upon scientifically sound, site-specific best practices that improve the quality of all life on the landscape, as well as

organic inputs therefore it is a matter of logistics in making nutrients available in sufficient quantity, in the appropriate form, and at the right time for acceptable plant growth and optimum quality.

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regionally and beyond. A sustainable landscape serves as a champion and advocate of sustainability.

The ISC has adopted, with Dr. Lal's blessing, the following 10 Principles for Sustainable Soils. They encourage every golf course adopt these as guiding principles for sustainable golf landscape management:

PRINCIPLE 1: Soil degradation is a biophysical process, but driven by social, economic and political forces. Minimizing degradation and enhancing restoration depends on addressing the human dimensions that drive land misuse.

PRINCIPLE 2: The landscape stewardship concept is important only when the basic needs of people and businesses are adequately met.

PRINCIPLE 3: When managing a landscape you cannot take more out of the soil than what you put in it without degrading its quality.

PRINCIPLE 4: Poor quality soils cultivated with improper inputs produce marginal plant responses and are not sustainable.

PRINCIPLE 5: Plants cannot differentiate between organic and inor-

soil organic matter results in the loss of carbon just as if it were burned on the surface and wasted.

PRINCIPLE 7: Soils can be a source of carbon extraction or a sink for carbon storage, depending on how the soil is managed. If used as a sink, the soil has the capacity to store 3 gigatons of carbon a year, translating into a reduction of 50 parts per million of carbon dioxide over the next five decades.

PRINCIPLE 8: Even the most elite plant varieties developed through biotechnology and genetic engineering cannot extract water and nutrients from the soil where they do not exist. Improvements in quality can only be realized if landscape plants are grown on well-managed soils.

PRINCIPLE 9: Improved soil management is the engine of economic development in all communities because it enhances the lifestyles of those who live, work, or play in each community. Try to imagine a community with no plants whatsoever.

PRINCIPLE 10: Traditional landscape management knowledge and modern innovations go hand-in-hand. One cannot solve current landscape issues without the other. **GCI**