

3

Assessing Soil Quality: Practicable Standards for Sustainable Forest Productivity in the United States

Robert F. Powers

*Pacific Southwest Research Station, USDA Forest Service
Redding, California*

Allan E. Tiarks

*Southern Research Station, USDA Forest Service
Pineville, Louisiana*

James R. Boyle

*Department of Forest Resources
Oregon State University
Corvallis, Oregon*

Productive soils form the foundation for productive forests. But unfortunately, the significance of soil seems lost to modern society. Most of us are too far removed from the natural factors of production to appreciate the multiple roles of soil. Nor is its worth recognized well by many forest managers who too often see soil only in its capacity for logging roads and trafficability. Thus, the Santiago Declaration is a milestone marking the significance of soil in sustainable forestry.

Soil-based indicators of sustainable forestry listed in the Santiago Declaration are described in a generic sense, and countries are left with the task of developing objective standards of soil quality. Here, we examine the historical and conceptual basis for soil quality standards as proposed by the Santiago Declaration relative to U.S. forestry. Further, we synthesize findings from recent research and suggest an approach to develop operationally practicable standards of soil quality for managed forests of the nation.

PERCEPTIONS

Historical Views in the USA

Measured by our lifespans, soils are nonrenewable resources—something to be protected, restored where necessary, perhaps enhanced. But this was not always the view in the USA. In 1909, the Chief of the U.S. Bureau of Soils wrote,

Copyright © 1998. Soil Science Society of America, 677 S. Segoe Rd., Madison, WI 53711, USA.
The Contribution of Soil Science to the Development of and Implementation of Criteria and Indicators of Sustainable Forest Management. SSSA Special Publication no. 53.