



Tropical Soils Properties and Management for Sustainable Agriculture Oxford University Press

Changing land-use practices and the role of soil biological diversity has been a major focus of soil science research over the past couple of decades—a trend that is likely to continue. The information presented in this book points to a first part looks at the land use effects on soil carbon storage, and considers a range of factors including carbon sequestration in soils. The second part of the book presents research investigating the interactions between soil properties. This book discusses how to apply the basic principles of pedology to the tropical soils of the Indian subcontinent, with an emphasis on ways to enhance crop productivity. The book showcases the research contributions on pedology, geomorphology, micromorphology and climate change collected from the literature on three major soil types: shrink-swell soils, red ferruginous (RF) soils and the soils that occur in the tropical environments of the Indo-Gangetic Plains (IGP). It also provides five pedogenetically important soil orders like Alfisols, Mollisols, Ultisols, Vertisols and Inceptisols found in tropical Indian environments. Documenting the significance of minerals in soils and their overall influence in soil science in terms of polygenesis and edaphology, it provides a knowledge base that is critical when attempting to bridge the gap between food production and population growth.

An understanding of the characteristics and the ecology of soils, particularly those of forest ecosystems in the humid tropics, is central to the development of sustainable forest management systems. The present book examines the soil ecology can make to sustainable land use in the humid tropics. Four main issues are addressed: characteristics and classification of forest soils, chemical and hydrological changes after forest utilization, soil fertility management in forest soils, as well as ecosystem studies from the dipterocarp forest region of Southeast Asia. Additionally, case studies include work from Guyana, Costa Rica, the Philippines, Malaysia, Australia and Nigeria.

Impact on Soil Properties and Sustainable Resource Management

Properties and Management

Principles, Properties and Management

Tropical Residual Soils Engineering

Booker Tropical Soil Manual

Ecology and Development

*Aimed at taking the mystery out of soil science, Soils: Principles, Properties and Management is a text for undergraduate/graduate students who study soil as a natural resource. Written in a reader-friendly style, with a host of examples, figures and tables, the book leads the reader from the basics of soil science through to complex situations, covering such topics as: the origin, development and classification of soil physical, chemical and biological properties of soil water and nutrient management management of problem soils, wetland soils and forest soils soil degradation Further, the ecological and agrological functions of soil are emphasized in the context of food security, biodiversity and climate change. The interactions between the environment and soil management are highlighted. Soil is viewed as an ecosystem itself and as a part of larger terrestrial ecosystems.*

*Focused on tropical areas and their unique problems and issues, this work examines all aspects of residual soils engineering, including both theoretical and practical aspects. This book gives the practitioner a thorough understanding of the characteristics of these soil types, their formation and their material properties, while guidelines on applying soil science to global change and forest soils: Cultivating Stewardship of a Finite Natural Resource, Volume 36, provides a state-of-the-science summary and synthesis of global forest soils that identifies concerns, issues and opportunities for soil adaptation and mitigation as external pressures from global changes arise. Where, how and why some soils are resilient to global change while others are at risk is explored, as are upcoming train wrecks and success stories across boreal, temperate, and tropical forests. Each chapter offers multiple sections written by leading soil scientists who comment on wildfires, climate change and forest harvesting effects, while also introducing examples of current global issues. Readers will find this book to be an integrated, up-to-date assessment on global forest soils. Presents sections on boreal, temperate and tropical soils for a diverse audience Serves as an important reference source for anyone interested in both a big-picture assessment of global soil issues and an in-depth examination of specific environmental topics Provides a unique synthesis of forest soils and their collective ability to respond to global change Offers chapters written by leading soil scientists Prepares readers to meet the daily challenges of drafting multi-resource environmental science and policy documents*

*The understanding of plant-soil interactions in acid soils is important for improved food production in many parts of the world. The context of the book touches on basic and applied aspects of the physics, chemistry and biology of acid soils and their effect on growth of plants. It contains a large section on management of acid soils for plant (food) production and on socioeconomic aspects of management of acid soils. This is important because a large portion of the world's acid soils occurs in less developed countries. Plant-Soil Interactions at Low pH: Principles and Management contains a substantial number of papers, including nine invited reviews, presented at the Third International Symposium of Plant-Soil Interactions at Low pH. The major themes include chemistry and physics of acid soils, microbial and faunal activity in acid soils, mechanisms of acid tolerance of plants, selection and breeding of acid-tolerant plants, diagnosis and correction of acid soil infertility, socioeconomic aspects of acid soil management and management systems for agriculture, horticulture and forestry on acid soils. A Handbook for Soil Survey and Agricultural Land Evaluation in the Tropics and Subtropics*

*Effects on Organic Carbon, Nitrogen Dynamics, and Greenhouse Gas Emissions*

*Proceedings of a Workshop organized by the Center for Development Research at the University of Bonn (ZEF Bonn) – Germany, 7-10 June, 1999*

*Plant-Soil Interactions at Low pH: Principles and Management*

*Soils of the Humid Tropics*

*Experimental Basis for Sustainability and Environmental Quality*