

Preface

Although scientific studies of anthropogenic soils in archaeological and agricultural settings date back to the late nineteenth century, studies of those in urban and mine-related settings mainly date from the late twentieth and early twenty-first centuries. The results of these studies are found in a plethora of different publications from such diverse fields as soil science, archaeology, geology, engineering, environmental science, etc. Hence, the purpose of this book was to collate data from many disparate sources, and organize them into a state-of-the-art compendium of scientific knowledge on the subject of artificial soils. The book focuses on genesis, morphology, and classification; the topics of pollution and reclamation are not addressed.

This book begins with an overview of the historical and geocultural significance of anthropogenic soils, and then examines their relationships with anthropogenic landforms, sediments, soil-forming processes, and artifacts. The classification of anthropogenic soils is discussed next, followed by a systematic look at the major categories of anthropogenic soils associated with agricultural, archaeological, mine-related and urban settings. The basic *modus operandi* was to gather together soil profile descriptions, along with corresponding characterization and analytical data, for each major anthropogenic soil type. Unfortunately, many different systems had been used to make these soil profile descriptions, therefore, using my best judgment, I revamped the original descriptions to conform to the current system being used in Soil Taxonomy by the U.S. Department of Agriculture's Natural Resources Conservation Service. Soil horizons formed in human-transported material are denoted by the caret (^) symbol. However, in order to emphasize their anthropogenic origin, I deviated from Soil Taxonomy and used the asterisk (*) symbol to designate horizons formed in human-altered material. Sometimes there were problems finding analytical data which had been obtained using the same analytical methods. These data are compared and contrasted in tabulated form in this book, but it is recommended that the reader refer to the original sources of data for more quantitative interpretations. Only moist horizon colors are reported unless otherwise indicated.

Soil is a vital resource which is being modified and lost at an accelerating rate on a global scale as a result of urbanization and other human activities. Hence, publication of this book is timely given the extensive and current studies of soil health and resilience, urban soil revitalization, surface mine and other types of land reclamation, contaminated site assessment and remediation, etc. It is also timely given the ongoing lively debate about the postulated Anthropocene Epoch of modern geologic time. It is hoped that the book will be useful to anyone dealing with anthropogenic soils, including urban planners, federal and state environmental protection agencies, environmental consultants and engineers, as well as academicians. Thanks to Alicia Galka for her work with the illustrations, and to friends and colleagues who contributed photographs and other materials for this book: Krysta Ryzewski and Don Adzigian (Department of Anthropology, Wayne State University); Joe Calus, Eric Gano, Debbie Surabian, Luis Hernandez, Richard Shaw, and Shawn McVey (USDA-NRCS); W. Lee Daniels (Department of Soil and Crop Environmental Sciences, Virginia Polytechnic Institute and State University); Russell Losco (Lanchester Soil Consultants); Dr. Richard J. Buckley (University of Leicester Archaeological Services). Special thanks to my mentors Drs. Dan F. Amos and Lucian W. Zelazny, and to my longtime colleague and friend Dr. W. Lee Daniels.

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