Reclamation and Vegetative Restoration of Problem Soils and Disturbed Lands


Rather than being a comprehensive, integrated synthesis of principles and practices of land reclamation, this book consists of two disjunct sections that differ in emphasis and scope. Both sections have apparently been directly reproduced from preceding reports, and thus differ in format as well.

Part A of the book, by Brown and Hallman, is titled "Reclaiming Disturbed Lands" and is a review of surface mined land reclamation technology. This review is quite specific to mined lands in the arid/semiarid western USA, although principles may often be applicable elsewhere. Subjects addressed include mining techniques, mine spoil handling and grading, topsoil handling, reclamation technology. The authors have done a particularly effective job in describing equipment-related aspects of these subjects. Although the smallness of type in this section slightly reduces readability, the text is nonetheless written in a straightforward, readily understandable style, and is well-illustrated. The text emphasizes the practical application rather than theory of reclamation science. Because of this, it meets its primary stated goal of utility to readers inexperienced in mining and reclamation. This section may also be useful to practitioners of reclamation striving to review or improve applied technology.

Part B of the book, by Lee et al., is titled "Restoring Problem Soils," but is specifically structured to provide guidance on restoration of U.S. Army Corps of Engineers water resource development sites. The material presented on this subject has wide geographic applicability. The section first reviews, in considerable detail, the identification and characterization of problem soils. Principles and approaches for planning reclamation projects are then discussed, followed by in-depth reviews of practices for soil stabilization and vegetative/ NON-vegetative stabilization of problem soils. A series of appendices provides a great deal of additional information on certain topics, including on-site survey methodology, soil stabilization techniques, plant materials, mulches, and treatment of acidic soils. While primarily emphasizing the application of technology, this section also presents a considerable amount of basic background material for each topic discussed. The text is organized in a manner to provide both general perspectives and specific, step-by-step details on the design of restoration projects. This part of the book will be of interest primarily to individuals planning or implementing restoration programs at water resource development sites, most specifically at U.S. Army Corps of Engineers projects. However, the principles and practices reviewed often will be applicable to other types of land disturbance.

The overall effectiveness of this book is weakened somewhat by the differences in emphasis, approach, and format between Parts A and B, and the independent, noninterrelated nature of the sections. However, each section provides a great deal of information in a manner that will be very usable to practitioners of reclamation on western surface mined lands or on lands impacted by water development activities.—EDWARD J. DEPUIT, Range Management Department, University of Wyoming, Laramie, WY 82071.

Environmental Epidemiology

Edited by Frederick C. Kopfler and Gunther F. Craun, Lewis Publishers, Inc., 121 South Main St., P.O. Drawer 519, Chelsea, MI 48118. 1986. 366 p. $49.95.

This volume is a compendium of peer-reviewed papers presented at the Symposium on Exposure Measurement and Evaluation Methods for Epidemiology, cosponsored in 1985 by the Health Effects Research Laboratory, USEPA, and the Division of Environmental Chemistry of the American Chemical Society. The book is divided into four sections: Use of Biological Monitoring to Assess Exposure, Epidemiologic Considerations for Assessing Exposure, Health and Exposure Data Bases, and Assessment of Exposure to Environmental Contaminants for Epidemiologic Studies. Both background papers and detailed reports of human studies are presented.

The Biological Monitoring section contains several reports of sophisticated efforts to quantify adducts in blood and urine samples. These state-of-the-art research approaches to assessing the effect of an external exposure at the target site promise to strengthen attempts to relate exposure to risk of an adverse health effect.

In the section on Epidemiologic Considerations, Marsh and Caplan, and Andelman and Barnett present well-developed descriptions of the feasibility of conducting epidemiologic studies of persons residing near hazardous waste sites and those exposed to arsenic in drinking water, respectively. The pair of papers details the problems with conducting studies of persons residing near hazardous waste sites and those exposed to arsenic in drinking water, respectively. The pair of papers details the problems with conducting studies of persons residing near hazardous waste sites and those exposed to arsenic in drinking water, respectively.

The review of Data Bases includes government and industry water quality monitoring systems, the FDA Market Basket Study, major EPA air monitoring data, the National Database on Body Burden of Toxic Chemicals, and the National Human Adipose Tissue Survey. These data bases are a valuable resource; it is particularly useful to have each summarized in the same volume.

Methods of assessing current exposure and estimating past exposure are detailed in the final section. The work of Herrick and Elliot presented in "The Use of Industrial Hygiene Data in Occupational Epidemiology" provides the conceptual framework for the chapter. Exposure to trichloroethylene in shower water, the relationship between water quality and cardiovascular disease, the contribution of environmental lead exposure to pediatric blood levels, and data from the TEAM study in which researchers compare indoor, outdoor, and breath analysis of air pollutant exposures are also discussed.

This volume will be of interest to a broad range of readers, including epidemiologists, industrial hygienists, toxicologists, biostatisticians, and graduate students in these disciplines. The reader desiring an overview should scan for the appropriate paper, as it is not generally the first one presented in each section.—CAROL RICE, Department of Environmental Health, University of Cincinnati, Cincinnati, OH 45267-0056.