

1. Record Nr.	UNINA9910825424003321
Autore	Coleman David C. <1938->
Titolo	Fundamentals of soil ecology // David C. Coleman, D.A. Crossley, Jr., Paul F. Hendrix
Pubbl/distr/stampa	Amsterdam ; ; Boston, : Elsevier Academic Press, c2004
ISBN	1-280-96830-3 9786610968305 0-08-047281-8
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (404 p.)
Altri autori (Persone)	CrossleyD. A HendrixPaul F
Disciplina	577.5/7
Soggetti	Soil ecology Soil biology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. 327-373) and index.
Nota di contenuto	Front cover; Title page; Copyright page; Table of contents; Preface to the Second Edition; Preface to the First Edition; 1 Historical Overview of Soils and the Fitness of the Soil Environment; The Historical Background of Soil Ecology; Water as a Constituent of Soil; Elemental Constitution of Soil; How Soils Are Formed; Profile Development; Soil Texture; Clay Mineral Structure; Soil Structure; Soils as Suppliers of Ecosystem Services; Summary; 2 Primary Production Processes in Soils: Roots and Rhizosphere Associates; Introduction; The Primary Production Process; Methods of Sampling Destructive TechniquesThe Harvest Method; Isotope-Dilution Method; Root-Ingrowth Technique; Nondestructive Techniques; Additional Sources of Primary Production; Symbiotic Associates of Roots; Mycorrhizal Structure and Function; Ecosystem-Level Consequences of ECM Function; Actinorhiza; Carbon Allocation in the Root/Rhizosphere; Carbon Allocation Costs of Development and Maintenance of Symbiotic Associations with Roots; Future Directions for Research on Roots and Mycorrhizal Function and Biodiversity; Summary; 3 Secondary Production: Activities of Heterotrophic Organisms-Microbes; Introduction

Compounds Being Decomposed; Microbial Activities in Relation to Catabolism in Soil Systems; Microbial Abundance and Distribution in Soil; Techniques for Measuring Microbial Communities; Direct Measures of Numbers and Biomass; Indirect Measures of Biomass; Chemical Methods; The Chloroform Fumigation and Incubation (CFI) Technique; The Chloroform Fumigation and Extraction (CFE) Technique; Physiological Methods: SIR Technique; Additional Physiological Methods of Measuring Microbial Activity; Enzyme Assays and Measures of Biological Activities in Soils  
Direct Methods of Determining Soil Microbial Activity; Soil Sterilization and Partial Sterilization Techniques; Conceptual Models of Microbes in Soil Systems; Root-Rhizosphere Microbe Models and Experiments; Soil Aggregation Models; Models: Organism and Process-Oriented; Summary; 4 Secondary Production: Activities of Heterotrophic Organisms-The Soil Fauna; Introduction; The Microfauna; Methods for Extracting and Counting Protozoa; Distribution of Protozoa in Soil Profiles; Impacts of Protozoa on Ecosystem Function; The Mesofauna; Rotifera; Features of Body Plan and General Ecology; Nematoda Nematode Feeding Habits; Nematode Zones of Activity in Soil; Nematode Extraction Techniques; Tardigrada; Microarthropods; Collembola; Families of Collembola; Population Growth and Reproduction; Collembolan Feeding Habits; Collembolan Impacts on Soil Ecosystems; Acari (Mites); Oribatid Mites; Abundance and Diversity of Oribatid Mites; Population Growth; Oribatid Feeding Habits; Oribatid Impacts on Soil Ecosystems; Prostigmatic Mites; Mesostigmatic Mites; Astigmatic Mites; Other Microarthropods; Protura; Diplura; Microcoryphia; Pseudoscorpionida; Symphyla; Pauropoda; Enchytraeidae; The Macrofauna  
Macroarthropods

---

Sommario/riassunto

This fully revised and expanded edition of *Fundamentals of Soil Ecology* continues its holistic approach to soil biology and ecosystem function. Students and ecosystem researchers will gain a greater understanding of the central roles that soils play in ecosystem development and function. The authors emphasize the increasing importance of soils as the organizing center for all terrestrial ecosystems and provide an overview of theory and practice of soil ecology, both from an ecosystem and evolutionary biology point of view. This volume contains updated and greatly expanded coverage of all be

---