Microbial Ecology

Larry L. Barton, Diana E. Northup
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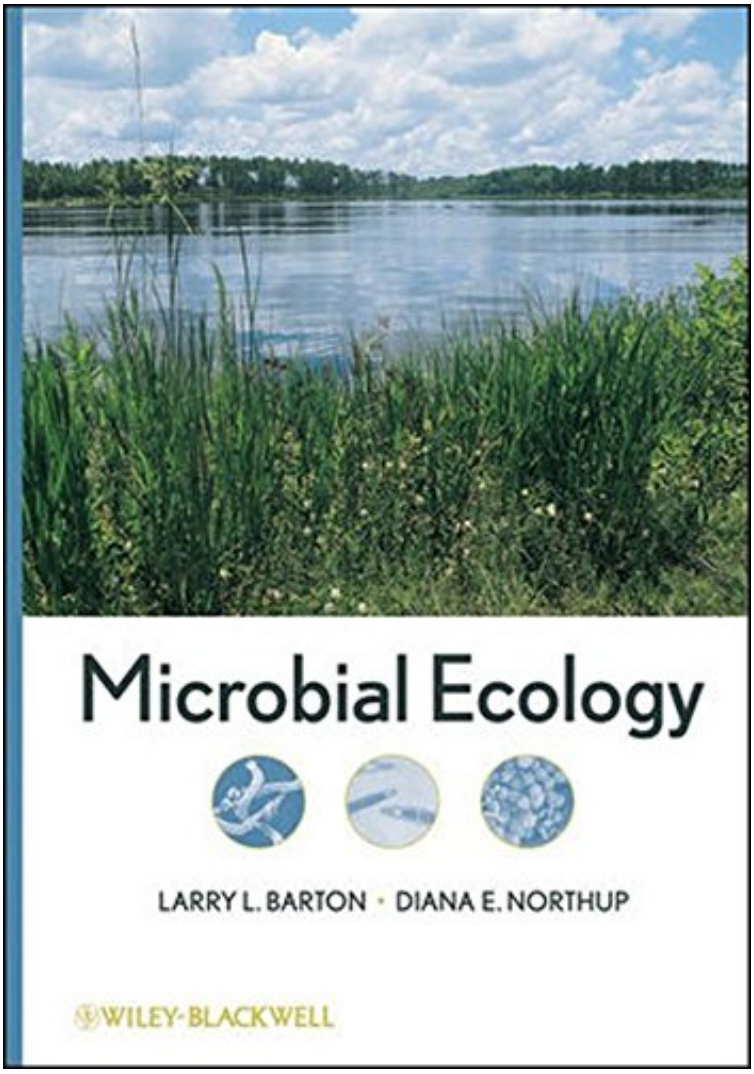

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Larry L. Barton, Diana E. Northup : Microbial Ecology before purchasing it in order to gage whether or not it would be worth my time, and all praised Microbial Ecology:

3 of 3 people found the following review helpful. Useful textbook for upper level course in Microbial Ecology.By Nana in NYReview of; Microbial Ecology. 2011. Barton LL, Northup DE.Wiley-Blackwell. ISBN 978-1-118-01582-1The authors wrote Microbial Ecology to serve the need for a textbook in an upper-level or graduate course in microbial ecology. The approach is interdisciplinary and assumes a reasonable background of the reader in chemistry, biology, and microbiology. The focus is on bacteria, but they do provide many examples of other interesting microbes. Each chapter includes a summary, recommendations for additional reading and review questions to focus class

discussion. The use of spotlights on the activities of particular scientists adds a human element to the book and reflects the real passion scientists have for their work.Microbiology is the only area of biology defined by the size and not the type of organism, making a comprehensive review of any aspect of microbiology difficult. Microbial Ecology actually begins with a glossary, which students will find very helpful. The organization of the book into thirteen chapters spans a wide range of topics in Microbial Ecology. The authors stress the need to change your perspectives to think small in terms of the organisms, microhabitats, and physical effects that are so different for us.I carefully reviewed Chapter 10 on Microbial Processes Contributing to Biogeochemical Cycling and found it both comprehensive and clear. The Figures in the chapter really enhance learning, and it goes well beyond the standard Carbon-Nitrogen-Sulfur cycling into Manganese, Iron, and even Hydrogen, Arsenic and Mercury. Section 10.8.2 has a header of Ferritin and Magnetosomes, but has nothing on magnetosomes, sadly, although they are well-discussed in several other places in the book. The biogeochemical cycle material quantifies major reservoirs of carbon throughout the cycle, and the discussion of energy demands and yielding reactions really shows the metabolic diversity of bacteria.The book is well-illustrated. The figures and tables are abundant and appropriate. I did experience some frustration with lack of information in figure legends. The information is not always in the text, like Fig. 8.1, which has nice pictures of leafcutter ants, a belostomid giant water bug, and a toucan as examples of symbiotic relationships, but, except for fungus gardens, no explanation of what they are in a relationship with in either the legend or the text. Google toucan and symbiotic relationships and it comes up with no relationship, although if you dig deeper you learn toucans disperse seeds of particular tropical trees. And how many people know a diving bug as distinct from a diving beetle? And yes, those are cavefish in Fig 11.5B. I always think Figures and Tables and their legends should be capable of standing alone. Color plates are mostly useful and interesting, although some do not really benefit from being in color, like 7.17 and various chickens and ducks. It would also be useful to repeat figure legends in the color plates to avoid a lot of flipping pages. Fig 5.14 suffers from poor quality in both black and white and color. Some Figures have multiple components but dont explain what each one is.I like the organization and scope of the topics covered in the thirteen chapters of the book. Chapter 5 The How of Microbial Ecology Studies gives just enough information on methods to enhance understanding of topics that apply these methods, but is not overwhelming. It would have been good to end with a summary chapter or end note that looks ahead at some of the big movements and challenges in microbial ecology as the book does briefly at the end of Chapter 1. Some information about the authors would have been interesting. The authors are both microbiologists at the University of New Mexico. Barton has studied the energetics of sulfate reducing bacteria, metal metabolism in bacteria, and iron uptake in plant-microbe systems. He is an author of many books and papers on these topics. Northup is a geomicrobiologist specializing in the study of microbes in caves, although she has cave crickets in her background, too. She heads the SLIME Team (Subsurface Life In Mineral Environments) and is a frequent speaker on microbes.Overall Microbial Ecology by Barton and Northup meets its objectives of providing a useful introduction for upper level and graduate students to a very complex and fascinating field of study. It is also a useful reference for anyone interested in these topics or with a professional interest in microbes in the environment. Microbial Ecology will intrigue and inspire the next generation of microbial ecologists.0 of 2 people found the following review helpful. Microbes are the very foundation of life. This book ...By rni B. StefnssonMicrobes are the very foundation of life. This book sends an important message.0 of 3 people found the following review helpful. Five StarsBy Lindsey KGreat condition when I got it! really great book to use! Thank you!

This book covers the ecological activities of microbes in the biosphere with an emphasis on microbial interactions within their environments and communities In thirteen concise and timely chapters, Microbial Ecology presents a broad overview of this rapidly growing field, explaining the basic principles in an easy-to-follow manner. Using an integrative approach, it comprehensively covers traditional issues in ecology as well as cutting-edge content at the intersection of ecology, microbiology, environmental science and engineering, and molecular biology. Examining the microbial characteristics that enable microbes to grow in different environments, the book provides insights into relevant methodologies for characterization of microorganisms in the environment. The authors draw upon their extensive experience in teaching microbiology to address the latest hot-button topics in the field, such as: Ecology of microorganisms in natural and engineered environments Advances in molecular-based understanding of microbial phylogeny and interactions Microbially driven biogeochemical processes and interactions among microbial populations and communities Microbial activities in extreme or unusual environments Ecological studies pertaining to animal, plant, and insect microbiology Microbial processes and interactions associated with environmental pollution Designed for use in teaching, Microbial Ecology offers numerous special features to aid both students and instructors, including: Information boxes that highlight key microbial ecology issues "Microbial Spotlights" that focus on how prominent microbial ecologists became interested in microbial ecology Examples that illustrate the role of bacterial interaction with humans Exercises to promote critical thinking Selected reading lists Chapter summaries and review questions for class discussion Various microbial interactions and community structures are presented through examples and illustrations. Also included are mini case studies that address activities of microorganisms in specific environments, as well as a glossary and key words. All these features make this an ideal textbook for graduate or

upper-level undergraduate students in biology, microbiology, ecology, or environmental science. It also serves as a highly useful reference for scientists and environmental professionals. PowerPoint slides of figures from the book are available for download at: ftp://ftp.wiley.com/public/sci_tech_med/microbial_ecology

From the Back CoverCovers the ecological activities of microbes in the biosphere with an emphasis on microbial interactions within their environments and communities In thirteen concise and timely chapters, Microbial Ecology presents a broad overview of this rapidly growing field, explaining the basic principles in an easy-to-follow manner. Using an integrative approach, it comprehensively covers traditional issues in ecology as well as cutting-edge content at the intersection of ecology, microbiology, environmental science and engineering, and molecular biology. Examining the microbial characteristics that enable microbes to grow in different environments, the book provides insights into relevant methodologies for characterization of microorganisms in the environment. The authors draw upon their extensive experience in teaching microbiology to address the latest hot-button topics in the field, such as: Ecology of microorganisms in natural and engineered environments Advances in molecular-based understanding of microbial phylogeny and interactions Microbially driven biogeochemical processes and interactions among microbial populations and communities Microbial activities in extreme or unusual environments Ecological studies pertaining to animal, plant, and insect microbiology Microbial processes and interactions associated with environmental pollution Designed for use in teaching, Microbial Ecology offers numerous special features to aid both students and instructors, including: Information boxes that highlight key microbial ecology issues "Microbial Spotlights" that focus on how prominent microbial ecologists became interested in microbial ecology Examples that illustrate the role of bacterial interaction with humans Exercises to promote critical thinking Selected reading lists Chapter summaries and review questions for class discussion Various microbial interactions and community structures are presented through examples and illustrations. Also included are mini case studies that address activities of microorganisms in specific environments, as well as a glossary and key words. All these features make this an ideal textbook for graduate or upper-level undergraduate students in biology, microbiology, ecology, or environmental science. It also serves as a highly useful reference for scientists and environmental professionals.About the AuthorLarry L. Barton studies the physiological activities of environmentally important microorganisms, focusing on energetics of bacterial inorganic metabolism and bacterial bioremediation. Larry has been the instructor of the course in General Microbiology for over 30 years. The author of five previous books, he was the founding editor and the initial editor-in chief of the international journal Anerobe, begun in 1995 and now published by Academic Press. Most recently, he published a college textbook on bacterial physiology. Diana E. Northup investigates the microorganisms that inhabit caves throughout the world. Her research was featured on the Nova episode, "Mysterious Life of Caves." Within the Department of Biology at UNM, she gives lectures, directs undergraduate students in research, supervises a postdoctoral fellow, and, currently, she is mentoring a doctoral student in microbial ecology of a cave in southern New Mexico.