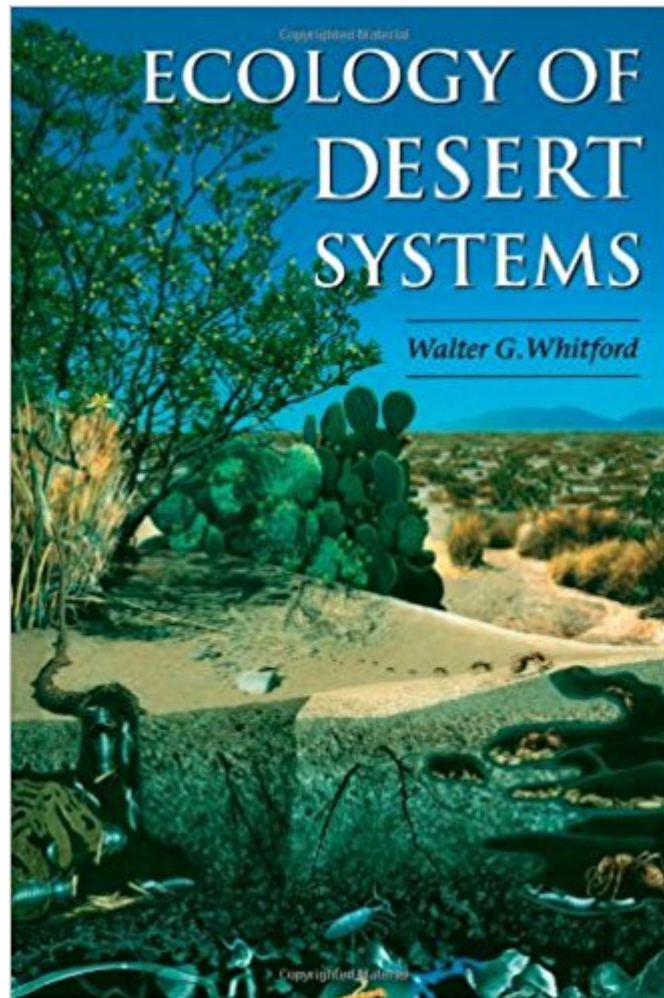




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Ecology Of Desert Systems



Synopsis

Conventional wisdom considers deserts stark, harsh regions that support few living things. Most people also believe that water alone makes the desert bloom. *Ecology of Desert Systems* challenges these conventional views. This volume explores a broad range of topics of interest to ecosystem, population, community, and physiological ecologists. Climate, weather patterns, geomorphology, and wind and water processes are examined as variables that affect the distribution of biota through fundamental ecosystem processes. Descriptions of morphological, behavioral, and physiological adaptations of desert biota illuminate, through the lens of patch dynamics, principles for understanding observed patterns of primary production, nutrient cycling, and the effects of consumers. Desertification, and the techniques for monitoring and quantifying it, is examined within the framework of desert ecosystem patterns and processes. * Focuses on the interactions of climate, soil, and biota along a spectrum of spatial and temporal scales* Details the role of animals in desert ecosystems and landscape processes* Examines watershed scale processes, the ecology of ephemeral lakes, and the ecological changes identified with desertification* Outlines the fundamental concepts relevant to sustainable development of arid lands

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Customer Reviews

"Ecology of Desert Systems is well written and would be engaging for students with some knowledge of biology. It should also appeal to most professional ecologists who want a succinct and authoritative summary of the important aspects of desert biology. It is written by someone who has

paid his dues spending as much time in the field studying deserts as almost anyone I know."-James A. MacMahon, for ECOLOGY, April 2003 "Whitford's book delivers a large amount of information on arid regions . . . I can recommend this book to anyone interested in the ecology of arid lands."- Stefan Porembski, for PLANT SYSTEMATICS AND EVOLUTIONS, 2004

Conventional wisdom considers deserts stark, harsh regions that support few living things. Most people also believe that water alone makes the desert bloom. Ecology of Desert Systems challenges these conventional views. This volume explores a broad range of topics of interest to ecosystem, population, community, and physiological ecologists. Climate, weather patterns, geomorphology, and wind and water processes are examined as variables that affect the distribution of biota through fundamental ecosystem processes. Descriptions of morphological, behavioral, and physiological adaptations of desert biota illuminate, through the lens of patch dynamics, principles for understanding observed patterns of primary production, nutrient cycling, and the effects of consumers. Desertification, and the techniques for monitoring and quantifying it, is examined within the framework of desert ecosystem patterns and processes.

The author lets us appreciate the multifaceted complexity of desert ecosystems around the world. He presents a unified treatment, ranging from the geology to, naturally, the rainfall and to the plants and fauna that survive. We see that terrain and shade can make dramatic differences in how an organism adapts. Just being in the shade of boulders or vegetation during the hottest times of the day can markedly lower the effective temperature experienced, and hence its water needs. Another survival method is to burrow. Even a tunnel a few centimeters deep into the soil can create a microclimate that is cool and moist. Thus do many desert rodents dig. The book also has a poignant dedication to his daughter who died at 9 years old. So young. The cause is unspecified. We can only silently wonder. But a web search shows that the author and his wife made a student prize in her memory in New Mexico.

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