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Nota di contenuto	Chapter 1. Introduction -- SECTION 1: FUNDAMENTAL PROCESSES AND INTERACTIONS IN THE SOIL-CLIMATE-VEGETATION SYSTEM -- Chapter 2. Soil Moisture Dynamics in Water-Limited Ecosystems -- Chapter3. Soil physical properties and associated soil-root interactions -- Chapter 4. Ecophysiology of plants in dry environments -- Chapter 5. Ecohydrology of Photosynthesis -- Chapter 6. Ecohydrological controls on the deposition of non-rainfall water, N and P to dryland ecosystems -- Interactions and feedbacks between climate and dryland vegetations -- SECTION 2: HYDROGEOMORPHOLOGY AND LANDFORMS OF ARID AND SEMIARID LANDSCAPES -- Chapter 8. The history and evolution of

desert hydrology and landforms: The role of climate change -- Chapter 9. Ecohydrological implications of aeolian processes in drylands -- Chapter 10. Hydrological and geomorphological significance of riparian vegetation in drylands -- SECTION 3: ECOHYDROLOGIC CONTROLS on NUTRIENT CYCLING and DISTURBANCES -- Chapter 11. Ecohydrological and stoichiometric controls on soil carbon and nitrogen dynamics in drylands -- Chapter 12. Modeling of Phosphorus Dynamics in Dryland Ecosystems -- Chapter 13. Microbial nitric oxide, nitrous oxide and nitrous acid emissions from drylands -- Chapter 14. Fire regimes in dryland landscapes -- Chapter 15. Termites as mediators of the water economy of arid savanna ecosystems -- SECTION 4: ECOHYDROLOGY OF A VARIETY OF DRYLAND ECOSYSTEMS -- Chapter 16. Interactions of water and nitrogen on primary productivity across spatial and temporal scales in grassland and shrubland ecosystems -- Chapter 17. Deforestation, water availability, and nutrient cycling in dry forests -- Chapter 18. Vegetation pattern formation in drylands -- Chapter 19. Ecohydrology of agroecosystems – Interactions between local and global processes -- Chapter 20. Ecohydrology of urban ecosystems -- Chapter 21. Desertification and land degradation.

Sommario/riassunto

By combining the analysis of biotic and abiotic components of terrestrial ecosystems, this book synthesizes material on arid and semiarid landscapes, which was previously scattered among various books and journal articles. It focuses on water-limited ecosystems, which are highly sensitive to fluctuations in hydrologic conditions and, in turn, play an important role in affecting the regional water cycle. Intended as a tool for scientists working in the area of the earth and environmental sciences, this book presents the basic principles of ecohydrology as well as a broad spectrum of topics and advances in this research field. Written by authors with diverse areas of expertise who work in arid areas around the world, the contributions describe the various interactions between the biological and physical dynamics in dryland ecosystems, ranging from basic processes in the soil-vegetation-climate system, to landscape-scale hydrologic and geomorphic processes, ecohydrologic controls on soil nutrient dynamics, and multiscale analyses of disturbances and patterns.
