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Nota di contenuto	1. Carbon, Nitrogen and Phosphorus in Terrestrial Pools: where are the main nutrients located in the grasslands of the Cuatro Ciénegas Basin? -- 2. The terrestrial N budget of an endangered oasis -- 3. The effect of nutrients and N:P ratio on microbial communities: testing the Growth Rate Hypothesis and its extensions in Lagunita Pond (Churince) -- 4. How to understand the effect of nutrients availability on the ecological role of filamentous microfungi: lessons from elemental stoichiometry -- 5. Life on a stoichiometric knife-edge: biogeochemical interactions and trophic interactions in stromatolites in Rio Mesquites -- 6. The sulfur cycle as the gear of the "clock of life": the point of convergence between geological and genomic data in the Cuatro Cienegas Basin -- 7. Towards a comprehensive understanding of environmental perturbations in microbial mats from the Cuatro Cienegas Basin by network modeling -- 8. The magnetotactic bacteria of the Churince Lagoon at Cuatro Cienegas Basin -- 9. Ecological adaptability of Bacillus to the extreme oligotrophy of the Cuatro Cienegas Basin -- 10.

Bacterial siderophore-mediated iron-acquisition in Cuatro Ciénegas Basin: a complex community interplay made simpler in the light of evolutionary genomics -- 11. Animal-mediated nutrient cycling in aquatic ecosystems of the Cuatro Ciénegas basin -- 12. How Agricultural Practices Modify Soil Nutrients Dynamics?.

Sommario/riassunto

Carbon (C), Nitrogen (N) and Phosphorus (P) are three of the most important elements used to build living beings, and their uptake from the environment is consequently essential for all organisms.

Photosynthesis is the process in which plants absorb atmospheric C as they grow and convert it to biomass. However, plants acquire N and P only when these are available in the soil solution, which makes these elements the most limiting nutrients in plant growth and productivity in most ecosystems. When plant residues and roots decompose, the C, N and P they contain is transformed primarily into soil organic matter (SOM) or C and N can release to the atmosphere. Recent interest on the global C, N and P cycles has focused attention on the different proportion of terrestrial C, N and P stored in different ecosystem pools. Cuatro Ciénegas represents an exceptional place, since the plants are not the base of the food web, they are the microbial community, that recycle the elements essential for life. In this book we describe how this is an analog of early Earth.
