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Nota di contenuto	Part I. Theory of Landscape Pattern and Hierarchy -- Chapter 1. Concepts of Landscape Pattern (Alexander V. Khoroshev) -- Chapter 2. Polygeosystem Fundamentals of Landscape Science (Alexander K. Cherkashin) -- Chapter 3. Multi-pattern (Polystructural) Organization of a Landscape - Geophysical Approach (Vladislav V. Sysuev) -- Part II. How Patterns Indicate Actual Processes -- Chapter 4. Representation of Process Development Laws in Morphological Pattern Laws: Approach of the Mathematical Morphology of Landscape (Alexey S. Victorov) --

Chapter 5. Transformation of the Chernobyl ¹³⁷Cs Contamination Patterns at the Microlandscape Level as an Indicator of Stochastic Landscape Organization (Vitaly G. Linnik) -- Chapter 6. Determination of the Order Parameters of The Landscape at the Regional Level (Mikhail Yu. Puzachenko) -- Chapter 7. Land Cover Thermodynamic Characteristics Defined by Remote Multispectral Data Based on Non-Extensive Statistical Mechanics (Robert B. Sandler) -- Part III How Patterns Control Actual Processes -- Chapter 8. Structure and Phytomass Production of Coastal Geosystems Near Lake Baikal (Yuliya V. Vanteeva) -- Chapter 9. Catena Patterns as a Reflection of Landscape Internal Heterogeneity (Irina A. Avessalomova) -- Chapter 10. Structure of Topogeochores and Modern Landscape-Geochemical Processes (Yury M. Semyonov) -- Chapter 11. Modeling of Hydrological and Climatic Resources of a Landscape for Sustainable Land Use at Small Watersheds (Alexander A. Yerofeev) -- Chapter 12. Influence of the Landscape Structure of Watersheds on the Processes of Surface Water Quality Formation (Case Study of Western Siberia) (Vitaly Yu. Khoroshavin) -- Chapter 13. Comparison of Landscape and Floristic Diversity in Plain Catchments at the Level of Elementary Regions (Dmitry V. Zolotov) -- Part IV. How Patterns Indicate Genesis and Influence Future Evolution Trends -- Chapter 14. Altitudinal Landscape Complexes of the Central Russian Forest-Steppe (Anatoly S. Gorbunov) -- Chapter 15. Landscape Structure as Indicator of Debris Flow and Avalanche Activity in the Russian Caucasus Mountains (Marina N. Petrushina) -- Chapter 16. Multiscale Analysis of Landscape Structure (Alexander V. Khoroshev) -- Part V. How Patterns Control Dynamic Events -- Chapter 17. Structure and Long-Term Dynamics of Landscape as a Reflection of the Natural Processes and History of Nature Use: the Example of the Northwestern European Russia (Grigorii A. Isachenko) -- Chapter 18. Seasonal Dynamics in the Context of Polystructural Organization of Landscapes (on the Example of Sverdlovsk Region) (Olga Yu. Gurevskikh) -- Part VI. How Patterns Respond to Climatic and Anthropogenic Changes -- Chapter 19. Dendrochronological Indication of Landscape Spatio-Temporal Organization in the Northern Taiga of West Siberian Plain and Elbrus Region: Astrophysical and Geophysical Drivers of Bioproductivity (Kirill N. Dyakonov) -- Chapter 20. Carbon Balance in Forest Ecosystems and Biotic Regulation of Carbon Cycle Under Global Climate Changes (Erland G. Kolomyts) -- Chapter 21. Actual Changes of Mountainous Landscapes in Inner Asia as a Result of Anthropogenic Effects (Kirill V. Chistyakov) -- Part VII. How Landscape Patterns Affected Land Use in the Past -- Chapter 22. Initial Stages of Anthropogenic Evolution of Landscapes in Russia (Viacheslav A. Nizovtsev) -- Chapter 23. How Natural and Positional Factors Influence Land-Use Change During Last 250 Years in Temperate Russia (Victor M. Matasov) -- Chapter 24. Landscape Features of the Prehistory of Moscow (Viacheslav A. Nizovtsev) -- Chapter 25. GIS-Based Study of Landscape Structure and Land Use Within the River Valleys in the Southern Tomsk Region: Spatial-Temporal Aspects (Vadim V. Khromykh) -- Part VIII. How Landscape Patterns Determine Actual Land Use -- Chapter 26. The Development of Territorial Planning and Agrolandscapes Projecting in Russia (Valery I. Kiryushin) -- Glossary.

Sommario/riassunto

This book presents the polycentric and multiscale view of landscape which has been developed in Russia within a framework of physical geography since the early twentieth century. The authors develop the ideas of hierarchical organization of a landscape and strong relationships between abiotic and biotic components with equal attention to both vertical fluxes and lateral transfer. Three-dimensional representation of landscape involves strong emphasis on abiotic drivers

of pattern development including relief, geological structures and runoff. The objective of this book is to demonstrate the multiplicity of models and multiscale approach to description and explanation of landscape pattern, functioning, dynamics, and evolution. The contributions deal with various hierarchical levels ranging from within-unit interior variability to between-units interaction at landscape level, as well as regional and supra-regional zonal patterns. Divided into 8 clear parts, the 28 chapters treat spatial pattern in one of the following aspects: indicator of actual matter and energy flows control over actual processes including disturbance expansion as well as determinant of future development indicator of genesis and prerequisite for future trends driver for short-term dynamics of processes response to climatic and anthropogenic influences factor of settlement network and land use adaptation at various historical epochs framework for actual land use spatial arrangement. This contributed volume is written for researchers and students in the field of landscape ecology, physical geography, environmental impact assessment, and ecological planning.
