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Socioeconomic data and applications Center (SEDAC) at the Center for International Earth Science Information Network (CIESIN), Columbia University, New York, USA; 3.4.4 The "100 Cities Project", Arizona State University, USA; 3.5 Regional urban monitoring activities; 3.5.1 Europe: ESPON, MOLAND and the Urban Atlas; 3.5.2 Governmental research projects on urban growth in the United States; 3.6 Synthesis and outlook; References

PART III: SELECTED FIELDS OF URBAN ECOLOGY. PATHWAYS OF THE ECOSYSTEM APPROACH; 4. Quantifying spatiotemporal patterns and ecological effects of urbanization: a multiscale landscape approach; 4.1

Introduction; 4.2 Characterizing the spatiotemporal pattern of urbanization; 4.2.1 Quantifying urbanization patterns with landscape metrics; 4.2.2 Other methods for quantifying urban landscape pattern; 4.2.3 Effects of scale on the analysis of urban landscape patterns; 4.2.4 Examples from CAP-LTER; 4.3 Simulating spatiotemporal dynamics of urbanization

4.3.1 Importance of simulation models in urban studies 4.3.2

Approaches to simulating urban dynamics; 4.3.3 Examples from CAP-LTER; 4.4 Effects of urbanization on biodiversity and ecosystem

processes: examples from CAP-LTER; 4.4.1 Effects of urbanization on biodiversity; 4.4.2 Effects of urbanization on soil biogeochemical

patterns; 4.4.3 Effects of urbanization on net primary production; 4.4.4

Effects of urbanization on vegetation phenology; 4.4.5 Urban heat

islands and ecological effects; 4.4.6 Ecosystem responses to

urbanization-induced environmental changes; 4.5 Concluding remarks

Acknowledgments

Sommario/riassunto

Applied Urban Ecology: A Global Framework explores ways in which the environmental quality of urban areas can be improved starting with existing environmental conditions and their dynamics. Written by an internationally renowned selection of scientists and practitioners, the book covers a broad range of established and novel approaches to applied urban ecology. Approaches chosen for the book are placed in the context of issues such as climate change, green- and open-space development, flood-risk assessment, threats to urban biodiversity, and increasing environmental pollution
