

BOOK REVIEW

S.K.Collinge: ECOLOGY OF FRAGMENTED LANDSCAPES. - The Johns Hopkins University Press, Baltimore, Maryland, USA, Hardcover, 2009, 340 p., ISBN 978-0-8018-9138.

„...habitat loss, degradation, and fragmentation are major processes producing various results. Habitat loss is the giant, with the degradation of remaining habitat coming right behind, yet fragmentation in landscapes is conspicuous and important worldwide.“ The citation of the Richard T. Forman’s foreword starts a set of indicative steps viewing the ecology of fragmented landscapes as a kind of linkage from conceptual ecology to urban planning.

The following text consists of twelve basic chapters without any superior hierarchy: 1 Introduction: Framing the issues, 2 Conceptual frameworks, 3 Fragment size and isolation, 4 Experimenting with fragmentation, 5 Fragment context and edge effects, 6 Animal and plant movement, 7 Species interactions, 8 Parasites, pathogens, and disease emergence, 9 Modeling, 10 Restoration, 11 Ecological planning, 12 Some final thoughts.

The opening words (Introduction) belongs to one of the former presidents of IALE, John A. Wiens: „Habitat fragmentation is widely regarded as... a central issue in conservation biology. This anticipates the literary treatment of rich contexts with losses of biodiversity, land conversions, decreasing the vital capacity of ecosystem services or limits for migrations of species in response to climate change.

Chapters one and two are complementary with exploring the basic concepts and literature. Simple diagrams and presentations of concepts illustrate well the application with chosen studies. The author reviews the original theories and later modifications to modern theories, e.g. species-area relationships, island biogeography theory, biocorridors, metapopulation or metacommunity theory, percolation theory etc.

Fragment size and land isolation is addressed in Chapter three, mainly in the sense of dependencies of species richness and population abundance. Measuring of balances of biotic flows is declared in the context of knowledge of landscape pattern. It evokes our perception of actual land-use trend in densely populated central Europe with all the development of the last decades (Kovář 1995).

Chapter four brings novelty in its emphasis to experimental approach: it reviews the experimental designs and findings of selected studies along the gradients of scales (from microcosms to microlandscapes). Ecological responses to well controlled experimental manipulations offer the enlightening of the effects of particular interventions.

The next four Chapters (five-eight) examine interactions at various levels: patchiness (fragments) and landscape contexts, edge effects and animal/plant movement, species relationships, meta-organization in living subjects. All these aspects are unavoidable to enhance the precision the direction of landscape change management for the benefit of biological diversity.

In the last third of the book the author presents a chapter on modelling (Chapter nine) which reviews the application of models to fragmented landscapes with analysing their success and application. Chapter ten provides the general results of investigations within ecological restoration. Chapter on ecological planning (Chapter eleven) is – similarly as the previous one – the reflection of the author’s effort to review also applied face of landscape ecology.

The final chapter entitled „Some final thoughts“ (Chapter twelve) is oriented to the future with the author’s suggestions for possible directions of the field progress and with some comments of integrative actions in ecological theory (we can compare the message of the book with the sample of another elaboration on the topic: Maděra 2009).

In spite of only a few graphic illustrations and black white photos of rather lower quality, this small book of familiar format represents good item for students of ecology. Its friendly style and wide spectrum of literature included can effectively inspire to original ideas at the landscape level thinking. The book is useful reading also for teachers, managers and practitioners of conservation biology or restoration ecology. **Pavel Kovář***

REFERENCES

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MADĚRA P. (2009): Hochstetter, S: Enhanced methods for analysing landscape structure. *Landscape metrics for characterising three-dimensional patterns and ecological gradients*. Fernerkundung and angewandte Geoinformatik, Band 6, TU Dresden Rhombos-Verlag Berlin, 2009, 182 p., ISBN 978-3-941216-13-6. Paperback, 32.8 EUR. - *Journal of Landscape Ecology*, 2(2): 74-75.

* Charles University in Prague, Faculty of Science, Benátská 2, 128 01 Prague 2, Czech Republic, e-mail: kovar@natur.cuni.cz