

## BOOK REVIEWS

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Currently, we are lacking book reviewers. If we do not receive enough reviews, we will have to suspend this section of the Natural Areas Journal. Book reviews are an integral part of our journal and we, therefore, encourage you to look at the Book List and, if you see a book of interest, advise Don Bragg of your willingness to write a review. See instructions and book list at the end of this section.

### *Measuring Landscapes: A Planner's Handbook*

André Botequilha Leitão, Joseph Miller, Jack Ahern, and Kevin McGarigal  
Island Press, Washington, DC  
245 pp., paper. 2006  
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Landscape ecology is a relatively new and growing science that examines the spatial distribution of interacting ecosystems at broad scales (Turner 1989). There has been a demand that this new science move from the realm of biogeography and ecology researchers to the practitioners of land management (i.e., the planners). As planning and resource management schools have been slow to add landscape ecology courses (and especially practical courses with laboratories) to their core curriculum, there has been a need for clear reference materials to enable current practitioners to understand this new science. Planners and resource managers are key players in determining how landscape and regions develop and change over time. Therefore, it is important that they have a solid understanding of the latest science and tools

in order to facilitate the change to healthy and sustainable landscapes and regions.

*Measuring Landscapes: A Planner's Handbook* is an important addition to the reference material, allowing practitioners to understand landscape ecology and its associated tools. This book introduces the concepts of landscape ecology, has a strong focus on how planning relates to these concepts, and is a real practical exploration of the tools of landscape metrics. The book's subtitle "A Planner's Handbook" is somewhat misleading, though, as it is much more than a mere reference textbook, a collection of instructions, or a 'how-to guide' on landscape ecology. Leitão et al., however, do hold true to their sub-title by providing good details and specifics on selected landscape metrics and applications of these tools.

The book is well organized with a preface and five chapters. Chapter 1 does a good job of introducing the study of landscape ecology and explaining how landscapes can be quantified. Chapter 2 further introduces concepts and fundamentals of landscape ecology in the context of planning. This chapter sets the context of landscape planning by reviewing the principal type of landscape resources: abiotic, biotic, and cultural (ABC). Landscape resources are reviewed by defining the resource, the importance of the resource, threats to the resource, planning the resource, and questions planners might ask. Planners will likely find the section that outlines the role of landscape metrics for key sustainable landscape planning stages (i.e., focus, analysis, diagnosis, prognosis, and sinteresis) of particular interest. I was particularly pleased to see the discussion of the importance of scale in this chapter (borrowed with permission from the FRAG-STATS manual). It is essential that not only planners, but all users of landscape metrics explicitly identify and

appropriately choose relevant scales. As clearly stated on page 59 "...it is incumbent upon the planner to select a scale (i.e. extent, grain, minimum mapping unit) that is appropriate to the application, because any interpretation of landscape structure is ultimately constrained by the scale."

One of the book's clear strengths is Chapter 3. Although lengthy (nearly 100 pages), this chapter has great utility for a broad group of readers including planners, biologists, geographers, and teachers. It also provides a nice package of details regarding 10 key metrics not easily found in other landscape ecology sources. Leitão et al. offer the following information on each metric: concept, metric equation and calculation, applications, limitations, recommendations, related metrics, and selected references for further reading. The selected metrics covered in *Measuring Landscapes* are: patch richness, class area proportion, patch number and density, mean patch size, shape, radius of gyration, contagion, edge contrast, nearest neighbor distance, and proximity.

The first important message here (also stated in their summary chapter) is that there is no single best suite of metrics and that not all of those available (maybe close to 100) are needed. It is advisable to start with some of the better understood landscape measures for the entity under study, and then the planner can further explore other metrics if warranted.

Chapter 4 examines a specific example of using of landscape metrics in the context of land use planning. Leitão et al. fully investigate the integrated planning of the Amherst watershed in Massachusetts. The authors examine the landscape structure change of the Amherst watershed under a current 'Trend Scenario' and an alternative 'Smart Growth Scenario' over four time steps. This

