

PATCH ATLAS: INTEGRATING DESIGN PRACTICES

Ecological Knowledge for Cities as Complex Systems

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Patch Atlas is a well written foray into a novel landcover classification scheme that tries to meld design principles and ecological research from the outset. This approach, the authors argue, is a needed advancement of urban geospatial research which should help a wider audience interpret the landscape more holistically. This co-production aims to produce an approach greater than the sum of its individual parts, providing a more equitable and synthesized understanding of a human dominated landscape. Victoria Marshall, Mary Cadenasso, Brian McGrath, and Steward Pickett strive to use each of their greater than 17-year accumulation of knowledge to develop a classification of land cover that does not necessarily separate human-created structures from their biological and geological counterparts. They try to avoid such land use dichotomies that can ultimately lead to faulty interpretation and understanding of the role humans play among the complex ecologies developing in the increasingly urban world. In *Patch Atlas* they present the motivation and convey the need for such a novel interpretation presented in a clever design aesthetic reminiscent of Edward Tufte (for better and worse). While this reader feels that the authors fell slightly short of their described aims, this well thought out work provides a novel exploration of how the design and research collaborative process could be, and potential should be, enacted to push the understanding of urban ecologies further.

While the authors acknowledge traditional land cover classification schemes are still pertinent, they also argue that such approaches conflate land use and land cover. Such a distinction may seem arbitrary to some, but the inherent valuation of activity carried out on landscapes can *and do* mask patterns of land cover. The authors present a working case of an alternative classification scheme called *High Ecological Resolution Classification for Urban Landscapes and Environmental Systems (HERCULES)*. With this peer reviewed model of landscape classification, they examine the Gwynns Falls Watershed, an area in Maryland that stretches across Baltimore County and Baltimore (the city). This slice of the Greater Baltimore area includes a diversity of land covers and land uses. This watershed is exemplar of many urban areas that defy the urban-to-rural gradient that is often used to in urban ecological modeling and land use planning. Instead, this area is a mosaic of patches of various land covers that

emerge from a long history of urban development, abandonment, and land use succession. The HERCULES land cover model allows the truly mosaic nature of the landscape to be described, assorting the study area into contiguous patches with interiors more similar than to those patches neighboring them.

A prominent feature of *Patch Atlas* is the visual representation of the land cover composition of the Gwynns Falls Watershed. While clever and novel, this Tufte-esque design aesthetic left me wanting for more. While this may be on purpose, it (in this reader's opinion), does not achieve the desire to make the patch data "intelligible at a glance". For example, they describe the use of white space as an essential element to the visualization of the patch distribution across the watershed. This is a clever way to show isolation of bare soil, fragmentation of homogenous vegetation patches, flow through neighborhoods based on heterogeneous vegetated and paved patches, etc. However, the white space trick is hampered by a lack of context as each set of patches is placed on a white page, leaving the reader unsure if the white space they are looking at is within the watershed or just on the page.

As each chapter unfolds, describing a different pattern found within the landscape patches, the authors provide a bounty of visual data. Their demonstration of such a novel way to classify such data and the potentially useful new approach to amassing these data is defined as a "periodic table" of patches, based on patch composition. Though the gradients of land covers explored through this system is likely exceptionally useful for statistical analysis for the audiences they hope to provide it too (such as ecologists, engineers, architects, and anthropologists), the visual representation of this data results in a lifeless representation of the dynamism the authors hoped to convey.

While the work is intriguing and highly readable, the authors missed an opportunity with this project. They rightly describe the urban-to-rural complex of modern cities as a complicated narrative derived from historical intricacies that influence the current state of an urban patches' ecology. Unfortunately, they only but briefly touch on the historic legacies that inform our current context. Such landscape sized view of the processes of social and economic trends leaves a desire for a local scale compliment. A personal narrative of a neighborhood and the residents (or current lack thereof) would have provided a welcome local-scale approach, giving context to the wider watershed view. Such a thread could have given power to the story as motivated by the historical dynamism and the "flux of energy and matter" that is a changing city. Thus, a multi-scale approach would have been achieved, providing information that would have been a boon to the wider audience of urban planners, designers, architects, engineers, community activists and natural resource managers the authors hoped would gain from this new collaborative approach to research. Such a resource would provide an example of how to extrapolate from current conditions to anticipate better how our land cover patterns may be altered for the betterment of the city-organism and the participants that reside within.

All critiques aside, I enjoyed this book. I also think it is an important and timely contribution to the study of urban systems. I wish that it had taken more than an evening to read, yet as I return to look at its pages, I am enthralled with the maps and figures provided. The authors achieved their goal of demonstrating that moving beyond a "land-use" classification is possible. This, in and of itself, is a success. And their work does go beyond this: they lay an

intentionally loose and flexible blueprint for others hoping to achieve a eco-design collaboration success. And hopefully, their work continues to achieve their goal to “inspire maps that have yet to be drawn” so that there is increased speculation of the “city yet to come” through a more holistic and equitable design approach.