

Cambridge University Press

978-0-521-11642-8 - An Integrative Approach to Successional Dynamics: Tempo and Mode of Vegetation Change

Scott J. Meiners, Steward T. A. Pickett and Mary L. Cadenasso

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An Integrative Approach to Successional Dynamics

Tempo and Mode of Vegetation Change

Much of what is considered conventional wisdom about succession isn't as clear cut as it is generally believed. Yet, the importance of succession in ecology is undisputed, since it offers a real insight into the dynamics and structure of all plant communities.

Part monograph and part conceptual treatise, *An Integrative Approach to Successional Dynamics* presents a unifying conceptual framework for dynamic plant communities and uses a unique long-term data set to explore the utility of that framework.

The 14 chapters, each written in a non-technical style and accompanied by numerous illustrations and examples, cover diverse aspects of succession, including: community, population and disturbance dynamics, diversity, community assembly, heterogeneity, functional ecology, and biological invasion. This unique text will be a great source of reference for researchers and graduate students in ecology and plant biology, and others with an interest in the subject.

Scott J. Meiners is a professor in the Department of Biological Sciences of Eastern Illinois University where he teaches Plant Ecology, Introductory Botany, and a graduate course in Biostatistics. His research interests focus on the dynamics of regenerating communities using forest, grassland, and successional systems, as well as the dynamics of stream fish communities and sustainable agriculture. Since 2001, he has led the Buell–Small Succession Study, the longest continuous study of post-agricultural vegetation dynamics.

Steward T. A. Pickett, a Distinguished Senior Scientist at the Cary Institute of Ecosystem Studies, in Millbrook, New York, is an expert in the ecology of plants, vegetation dynamics and natural disturbance. His contributions to succession are in the realm of both theory and empirical mechanistic studies. He also directs the Baltimore Ecosystem Study, Long-Term Ecological Research program. He has edited and authored books on ecological heterogeneity, humans as components of ecosystems, conservation, the linkage of ecology and urban design, the philosophy of ecology and ecological ethics.

Mary L. Cadenasso is a professor in the Department of Plant Sciences at the University of California, Davis. She received a National Science Foundation Career award and was recently named a Chancellor's Fellow. Her research interests span landscape, ecosystem, and plant ecology and focus on determining how the spatial heterogeneity of a system is linked to ecosystem functions and associated changes. Her work has been widely published in more than 50 peer reviewed journal articles, 25 book chapters and two books.

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Nou wè nan kote nou kanpe

One of the things that we have endeavored to do in this book is pull in quotes that capture the rich history of ecological thought on succession and related topics. To start this book off, we could have easily referred to Newton’s “Standing on the shoulders of giants” quote in homage to the wealth of information that we have benefited from. As this quote is used entirely too often, we have instead opted for something a little different. “Nou wè nan kote nou kanpe” is a Haitian saying that translates to “We see from where we stand.” If we have been able to offer any real insights in this book, it is because of the foundational work of many, many others. In particular, we owe very much to Drs. Helen Buell (1901–1995), Murray Buell (1905–1975) and John Small (1900–1977). They started the study that is the basis for much of this publication. Without their vision and commitment, none of this would have been possible. Their enthusiasm for ecology and the closeness of the three of them is captured in a comment from John Small’s remembrance of Murray’s life – “Hundreds will attest that they were quite a team! To the extent that the field of ecology, physically and theoretically, is the better for them, that is the way they wanted it.” (Small, 1975).

We also need to thank decades’ worth of researchers, most of whom volunteered their time and helped in the collection of this massive data set. We have attempted to assemble a list of these people from the original data sheets and have included this as an appendix to this text. We apologize for any whom we have missed.