BOOK REVIEW


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Employing the expertise of many of the most highly regarded scientists and resource management professionals in the field of vernal pool ecology and conservation in the eastern United States and southeastern Canada, editors Calhoun and deMaynadier have compiled a truly impressive text that, in their words (and also in my opinion) “offers readers state-of-the-art knowledge on vernal pools and provides the scientific basis and tools for their conservation” (page xvi). This text focuses specifically on topics that are among the most critical to conservation practitioners, employing a wealth of published literature, unpublished reports and data, and personal communications. In addition to the wide variety of topics covered, the clarity and organization of the writing throughout are such that this text will appeal to the intended audience including individuals working in various natural resources fields (e.g., academics, natural resource managers, environmental consultants), graduate and undergraduate students enrolled in upper level wetlands ecology and wildlife management courses, as well as advanced-level naturalists interested in learning more about vernal pool ecology and conservation.

One of the first things that stood out upon initial introduction to this text was the potential overlap with a recently published book on vernal pool natural history and conservation by Colburn (2004). However, shortly after delving into Science and Conservation of Vernal Pools in Northeastern North America it became apparent that, although there is a modest amount of overlap in subject matter between these 2 books, these texts are certainly not redundant and if anything provide a solid complement to one another. Colburn’s text focuses predominantly on the natural history of vernal pool flora and fauna with less emphasis on aspects related to applied conservation, whereas the Calhoun and deMaynadier text focuses primarily on aspects related to the applied conservation of vernal pools with less emphasis on the natural history of vernal pool–associated organisms.

Science and Conservation of Vernal Pools in Northeastern North America is organized into 3 sections: 1) physical setting: classification, hydrology, and identification; 2) biological setting: principal flora and fauna; and 3) conserving vernal pools in human-modified landscapes; which are further partitioned into 15 chapters along with an introductory chapter focusing on valuing vernal pools as small-scale ecosystems. Each chapter is co-authored by 2 or 3 of the foremost experts in the specific topic of interest for the chapter. The first page of each chapter begins with a Table of Contents and each chapter concludes with a Conservation Implications/Recommendations section and a Summary section.

The first section of the text is comprised of 3 chapters, the first two of which focus on classification, hydrology, and landscape connectivity of vernal pools. These 2 chapters provide readers with a solid understanding of the wide diversity of vernal pool types found in northeastern North America, hydrologic dynamics of these vernal pools, and connectivity of vernal pools with respect to metapopulation processes of vernal pool–associated organisms. The third chapter of this section focuses on remote and field identification of vernal pools and does an effective job describing current techniques used for identifying and mapping vernal pools and advantages and disadvantages of each, along with detailing a case study focused on comprehensively mapping vernal pools throughout Massachusetts.

The second section of the text is comprised of 5 chapters that primarily focus on the ecology of the flora and fauna associated with vernal pools. In addition to the description of the general ecology and natural history of a variety of vernal-pool taxa, this section incorporates a wealth of information on more advanced ecological aspects relating to population and community dynamics, spatial ecology, and genetics. Certainly one of the highlights of this section is the chapter entitled “Population and Genetic Linkages of Vernal Pool–Associated Amphibians,” which does an excellent job describing basic genetics concepts (e.g., genetic drift, effective population size, outbreeding depression) using specific examples from the amphibian literature and the relevance of these concepts to applied conservation in vernal pools.

The third and final section of the text is comprised of 7 chapters focusing on the conservation of vernal pools in human-modified landscapes. There are a wide variety of topics covered in this section including, though not limited to, the following: vernal pool policy, chemical contamination of vernal pools, conserving vernal pool wildlife in urbanized and managed landscapes, and spatial tools for conserving pool-breeding amphibians. Of particular interest are the final 2 chapters that focus on using vernal pools as an educational tool and conserving vernal pool habitat using community-based conservation, 2 broad topics that are increasing in popularity and are currently having (and will continue to have) some of the most positive impacts on the conservation of vernal pool ecosystems in northeastern North America.

One criticism is that a concluding chapter tying together all of the major points addressed throughout the text would have been helpful. Also it would have been particularly beneficial to incorporate into such a chapter, or as an additional chapter, a discussion of the current gaps of knowledge in the science and conservation of vernal pools that need to be filled to more effectively understand, manage, and conserve vernal pool ecosystems. Additionally, such a chapter could be used to more effectively guide future vernal pool research efforts. Those caveats aside, Science and