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BOOK REVIEW

Booming from the Mists of Nowhere: The Story of the Greater Prairie-Chicken

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Booming from the Mists of Nowhere: The Story of the Greater Prairie-Chicken by Greg Hoch. 2015. University of Iowa Press, Iowa City, IA, USA. xiii + 126 pp., 10 figures. $19.95. ISBN 978-1-60938-387-9 (paperback), ISBN 978-1-60938-388-6 (ebook).



In this easy-to-read narrative, Greg Hoch skillfully intersperses personal experiences among selected historical accounts to describe prairie-chicken biology and management. He describes the time when prairies covered the middle third of the country and Greater Prairie-Chickens (*Tympanuchus cupido*) were as bountiful as the prairie wind. After reading the vivid accounts, it is easy to imagine being a settler who experienced prairie-chickens commingling with domestic chickens, roving a freshly harvested field, being a source of income as a food commodity, becoming dinner during the bleak winter months, and heralding renewed energy when their plaintive booms marked the beginning of spring. The author's personal experiences reveal a passion for prairie-chickens that will inspire the reader to experience these birds firsthand.

Hoch's stated purpose for this book is threefold: (1) "to introduce readers to a somewhat neglected member of a somewhat neglected ecosystem"; (2) "to introduce some basic concepts of population, community, and landscape ecology, as well as conservation biology and wildlife management"; and (3) to review Greater Prairie-Chicken biology, history, and management (in hopes that the latter will contribute to the conservation conversation about this species).

Hoch accomplishes the first goal by describing the dynamics of the prairie ecosystem and the natural history of Greater Prairie-Chickens with vivid and scientifically accurate imagery. In Chapter 1, he refers to the prairie-chicken as "a child of sullen winter grasses" (Quayle 1905) that, however, "enacts his part in a manner not surpassed in pomposity by any other bird" (Audubon 1831) during the breeding season. In Chapter 2, he discusses the dynamic prairie ecosystem and how it is shaped by weather, grazing, and fire. This chapter is a must-read for those unfamiliar with the tremendous diversity of prairie plants and the factors shaping this ecosystem. Chapter 3 is focused on the social interactions that occur on the lek. Hoch remarkably describes the purpose of communal display, and he describes the experience of observing it as "watching evolution happen." In Chapter 4, he describes the life of the Greater Prairie-Chicken from the female's perspective,

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noting where she prefers to lay her eggs and how she cares for the young chicks.

The author's second goal, to introduce concepts of wildlife management, is accomplished as the reader learns of the challenges of managing prairie-chicken populations. The ecological niche of prairie-chickens makes them susceptible to large annual fluctuations in population numbers through interacting effects of weather and predation pressure (Chapter 7). Although overhunting and overtrapping is largely an issue of the past (Chapter 6), the current challenges of fire suppression and related woody encroachment, energy and urban development, and pesticide use are items managers struggle with today (Chapter 8). The options for managing populations (Chapter 9) and habitat (Chapter 10) are limited by the cost and the lack of public land within the prairie-chickens' range. It will take funding, and cooperation between managers, private landowners, and developers, to ensure that prairie-chickens persist into the future.

Although the general concepts of wildlife management are clearly articulated, the biggest shortcoming of the book is that key concepts dealing specifically with prairie-chicken management are stated mistakenly as being widely accepted. For example, Hoch suggests that prairie-chicken populations peak when the landscape consists of 50% grassland and 50% cropland (p. 43); however, many (e.g., Horak 1985, Svedarsky et al. 2000) consider that the ideal percentages are closer to 75% grassland and 25% cropland. Additionally, Winder et al. (2015) found that prairie-chickens select grassland habitats more often than would be predicted by chance, even in landscapes with ~90% grassland habitat, which suggests that there may not be a limit to prairie-chicken preference for well-managed grassland. This seems to be true even in Hoch's historical accounts; for example, "The prairie chicken was common in regions practically untouched by agriculture" (here the author cites "Schorger 1944," but the date may be inaccurate; see below).

Another example of a management issue that Hoch does not question is the "follow-the-plow" account of Greater Prairie-Chicken range expansion following European settlement. The follow-the-plow idea suggests that before European settlement, Greater Prairie-Chickens were restricted to a triangle extending from eastern Nebraska, south to northeastern Texas, and east to western Ohio. Following European settlement and conversion of grassland to cropland, prairie-chickens expanded their range west to western Nebraska and north to the prairie provinces of Canada, presumably because cropland increases food availability. I believe there is enough evidence to bring this idea into question, and I would like to have seen this addressed. First, as stated previously, prairie-chickens prefer large tracts of grassland, which were common in the region. Second, Ross et al. (2006) found that museum specimens from Canadian populations had high levels of genetic diversity and unique alleles, compared to specimens in the core of the range. This evidence is not consistent with the follow-the-plow idea, which would have predicted low genetic diversity and little genetic differentiation, characteristic of newly established populations resulting from a founder effect. Third, several historical accounts in the book suggest that prairie-chickens were abundant before European settlement; for example, "The prairies were but sparsely settled and not an acre in a thousand had been broken up. The grouse were in immense numbers" (citing "Bogardus 1878"). Because there is often little support for management and conservation of species outside of their native ranges, the shortcomings of the follow-the-plow account of prairie-chicken range expansion should have been discussed. Lastly, as indicated above, I had difficulty verifying some of the references in the book. For example, I question whether the aforementioned "Schorger 1944" should have been Schorger (1943), and "Bogardus 1878" was likely a reprint or revision of Bogardus (1874).

Despite these issues, I recommend this book to those interested in prairie grouse biology and management of game populations. It is remarkably easy and enjoyable to read despite the great complexity of factors affecting prairie-chicken ecology and conservation. Students in introductory natural resources or wildlife management courses would especially benefit from reading the book, or selections of it in any order, alongside peer-reviewed literature in the field. Perhaps they could even debate "follow-the-plow" by discussing whether prairie-chickens should be reintroduced to the prairie provinces of Canada.

I agree with Hoch that there is nothing like a trip to see prairie-chickens: hearing their lonesome booms, following their shapes as they move across the lek when there is barely enough light to see them, and watching each female inspect each male before making her decision. A trip to see prairie-chickens will be much more rewarding to the reader because of Hoch's engaging account of the history of human impacts on prairies and prairie-chickens in North America.

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