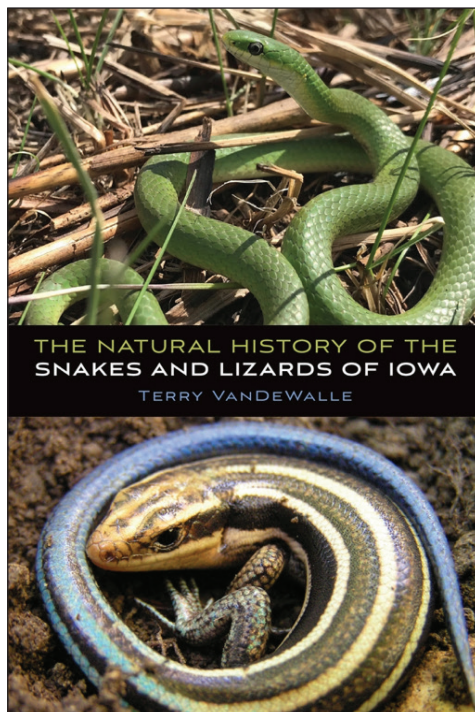


**The Natural History of the Snakes and Lizards of Iowa**, by Terry VanDeWalle. 2022. University of Iowa Press, Iowa City, Iowa, USA. 383 pages + xiv. \$37.50 (paperback and eBook). ISBN: 978-1-60938-837-9 (paperback), 978-1-60938-838-6 (eBook).

Terry VanDeWalle provides a comprehensive, evidence-based reference work that, as the title suggests, details the natural history of the 33 species of snakes and lizards inhabiting Iowa. This heavily researched book augments VanDeWalle's series of laminated, foldable field guides covering midwestern vertebrates, including fish (VanDeWalle 2017), frogs and toads (VanDeWalle 2011a), salamanders (VanDeWalle 2013), snakes and lizards (VanDeWalle 2010), and freshwater and terrestrial turtles (VanDeWalle 2011b). This book also complements the author's upcoming, early-2025 release of *The Natural History of the Turtles of Iowa* (co-authored by Neil Bernstein and also published by the University of Iowa Press). Previously, only the Iowa Department of Natural Resources' non-game technical series pamphlets (Christiansen and Bailey 1988a,b; 1990; 1997) and Jeff LeClere's (2013) publication, *A Field Guide to the Amphibians and Reptiles of Iowa*, were available to provide readers with published accounts of each species of Iowa's lizards and snakes. LeClere also maintains an *Amphibians and Reptiles of Iowa* website (<http://www.herpnet.net/Iowa-Herpetology/>). In addition, a comprehensive, interactive website entitled *Reptiles and Amphibians of Iowa* (<https://www.iowaherps.com/>) provides species descriptions and photographs, and displays historical county records that are provided by the Drake University's Biodiversity Center, <https://HerpMapper.org>, and the Iowa Department of Natural Resources' Natural Areas Inventory. VanDeWalle's *The Natural History of the Snakes and Lizards of Iowa* offers all this information, and much more, in a single publication.

*The Natural History of the Snakes and Lizards of Iowa* begins with a brief preface describing the VanDeWalle's early interest in herpetology and extolls the extensive contributions of well-known herpetologists Dr. James L. Christiansen (Drake University) and Dr. Reeve M. Bailey (Iowa State University and the University of Michigan) to Iowa herpetology. VanDeWalle is a senior biologist with Stantec Consulting Services and an adjunct instructor of natural resources at Hawkeye Community College. He has been studying Iowa's amphibians and reptiles since the mid-1980s and early 1990s, when he was a graduate student at Drake University, studying under James Christiansen.

A lengthy introduction discusses conservation issues and reveals the organization of the book, and the book then transitions to a short section on the historical biogeography of Iowa that is written by Dr. Neil Bernstein (a herpetologist and ornithologist from Mt. Mercy Uni-



versity and the University of Iowa). The biogeography section gives context for the current patterns of distribution observed in Iowa snakes and lizards, many of which have limited dispersal capabilities and inhabit specific areas due to a combination of their ecological requirements and the different landforms and ecoregions across the state. Separate, illustrated dichotomous keys for lizards and snakes are presented next, allowing readers to identify species by applying a series of two-choice questions. In this regard, the book can function as a field guide, as well as a comprehensive resource on the natural history of Iowa squamates.

The bulk of the text entails detailed species accounts for each of Iowa's five lizard species and 28 snake species, presented in phylogenetic order by family and then alphabetical order by scientific name. Each species account begins with a short conservation status determination, followed by an historical summary (including common name variations, first specimens known in the state, history of relevant Iowa literature, and any taxonomic changes). Morphological descriptions and size ranges are provided next, along with a short discussion of any similar species that may elicit identification issues. The national range of each species is followed by a description of the state range. Herein lies the great value of this publication, and these Iowa ranges are based on the extensive collection records at Drake and Iowa State Universities, Reeve Bailey's personal field notes, the Iowa Department of Natural Resources' Natural Areas Inventory (NAI) and Multiple Species Inventory and Monitoring (MISM) programs, and verified HerpMapper records. Much of this information was not publicly available until now. Habitat descriptions, behavioral traits, perceived threats, food items and feeding tendencies, reproductive biology, and longevity records are also provided for each species. For the five species of venomous snakes inhabiting Iowa, venom effects and a summary of documented bites in Iowa is offered.

The book includes a labeled map of Iowa's 99 counties, and each species account is illustrated with multiple photos, with localities and morphological varieties indicated. Notably, each species account also includes a frequency histogram that depicts the month and the corresponding number of occurrence records, such that readers are informed of annual activity patterns for each species over the past 100 or more years. Each species account also contains an Iowa county-based map depicting historical species records, color coded by pre-1960 observations only, post-1960 observations only, and both pre- and post-1960 records. In this way, the book not only reveals county-level species distributions, but may expose inherent population trends.

*The Natural History of the Snakes and Lizards of Iowa* is a valuable resource that is both useful for professional herpetologists and accessible to the casual reptile enthusiast. Its great strength lies in its extensive evidence-based presentation, and its collation of a long history of records from state herpetology sources. I found the historical summary section of each species account particularly interesting as it provides tidbits of information than many herpetology enthusiasts may not know, and are not readily available elsewhere. Its biggest weakness lies in its graphic presentation, which perhaps could benefit from a more polished and colorful appearance of the graphs and maps. The book is much more than just a field guide, but rather it is an exhaustive reference source combining data from the 20<sup>th</sup> and 21<sup>st</sup> centuries that reveal the current and historical status of each of Iowa's lizards and snakes. For VanDeWalle, it is the culmination of a lifetime's interest and work, which he is clearly happy to share with readers. The book offers a personal touch in its descriptions of verified records and encounters and, in this regard, exceeds the value of a typical field guide or natural history reference.

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