



BOOK REVIEW

# Salamanders of the Eastern United States

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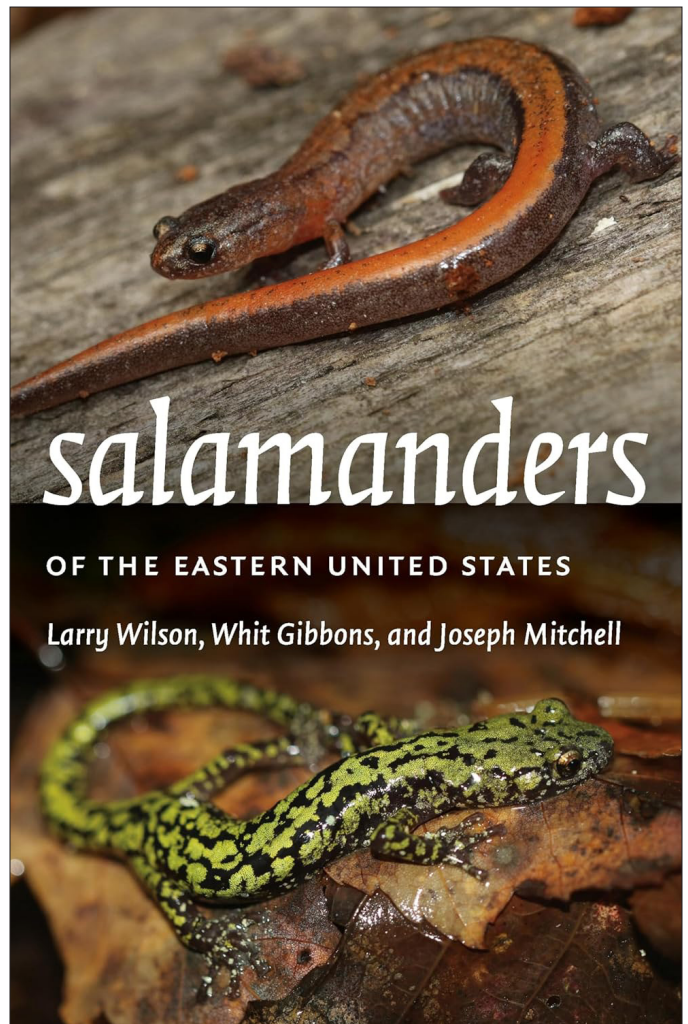
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Compact enough for a field guide but packed with enough information to be a formidable desk reference, Larry Wilson, Whit Gibbons, and Joe Mitchell (hereafter as Wilson et al.) cover the exceptionally rich diversity of salamanders in one of the world’s salamander hotspots, the eastern USA, in their new book *Salamanders of the Eastern United States* (University of Georgia Press, 504 pp., US \$39.95, ISBN: 978-0-8203-6573-2). These authors are some of the most familiar names in the field, each with decades of experience in herpetofaunal diversity and biology in the American east.

Readers familiar with this book’s precursor, *Salamanders of the Southeast* (Mitchell and Gibbons 2010) will find the general format similar, but with several attractive new features. This book is shorter in height and width than that of Mitchell and Gibbons (2010) and the bulkier *Salamanders of the United States and Canada* (Petranka 1998), making it easier to carry in a backpack or cargo pocket while in the field. An obvious addition to its precursor is the expanded list of species accounts that accompanies the expanded geographical focal area (USA east of the Mississippi River). This book is clearly written in conversational language, making it approachable for anyone with a basic biological understanding. It is, however, more detailed than most field guides. Wilson et al. comfortably and accurately cover external descriptors of each species for readers who have a salamander in view, if not in hand. They do not use a dichotomous key like those found in more comprehensive, and subsequently longer, chronicles of salamander diversity and biology (Bishop 1943; Lannoo 2005; Petranka 1998). The different amounts of information in differently styled sections are fit for readers with all levels of interest. Summary info comes first in each species account, followed by detailed topical information. However, these are interspersed with short “Did you Know?” boxes full of relevant trivia that gets more thorough treatment in the main text. Enough basic detail is repeated throughout the book that a reader may open to any section without feeling lost. However, a novice reading from beginning to end could easily build knowledge from repeated names of taxa, anatomical features, habitats, etc.

North American salamanders have received quite a bit of genetic analysis since the precursor book was published. The

current book not only addresses newly recognized species but acknowledges where evidence suggests the taxonomy may be going. This is an ambitious attempt to unify lots of changes in species delineations since earlier works. The “Taxonomy” sections across all species accounts paint a fascinating picture of fairly consistent descriptions of new species over the past two centuries. This makes the field of salamander taxonomy feel alive, productive, and exciting. Descriptions early in the book of predation by salamanders read like adventure stories. The authors are careful in setting parameters for understanding



this book in time and space and explain that the taxonomy used herein is consistent with AmphibiaWeb ([www.amphibiaweb.org](http://www.amphibiaweb.org)) at the time of publication. A note on the pros and cons of using online resources, especially in regards to how easily they can be updated, would be a welcome addition for future editions.

Explorers will want to flip to the back of this book for the familiar table-based quick reference guide to “What Kinds of Salamanders Are Found in Your State?” as well as the new “What Salamanders in Your State Are Protected?” In just a few minutes the reader will have an understanding of state-based presence and conservation status, two criteria that field herpers value most.

The sequence of species accounts is, like the precursor, organized primarily by habitat association, then by taxonomy. This allows less experienced explorers to locate relevant species accounts more easily according to where a mystery salamander is found. Each account includes large color photographs of focal species, often highlighting natural variability in body color, pattern, or size. Most of these photos are excellent, and some pages are truly breathtaking (see Dwarf, Red, and Slimy Salamander accounts as examples), but some are so zoomed in that the plane of focus leaves parts of the animal looking blurry.

The maps are large, elegant, and easy to use. Their large size is particularly useful for the multitude of salamander species in the eastern USA that have extremely limited distributions – sometimes just one mountain or one cave – and for species that have disjunct populations. While they do not have the county-level resolution used by sources like Lannoo (2005), their natural non-political range boundaries are easy to follow. Additionally, in highly restricted species, the text of the species account’s “Distribution” section typically addresses relevant counties. The color palette on maps showing ranges of more than one species is attractive, but the colors are occasionally so similar that they are difficult to distinguish from one another. Perhaps this book’s only shortcoming of substance is the discontinuity between several of the regional maps compared to the inset national maps and/or compared to the distribution descriptions in text. For example, the distribution text of the Streamside Salamander and the national map (p. 134) indicate a disjunct population in West Virginia that does not appear on the main map. There are inconsistencies between the national range and the regional borders for maps of the Southern Dusky Salamander group (p. 144), Black Mountain Salamanders (p. 154), Common Dusky Salamanders (p. 174), Seal Salamanders (p. 182), Cave Salamanders (p. 223), Mud Salamanders (p. 242), and Tiger Salamanders (p. 282). The Brownback Salamander distribution section mentions ranging into Kentucky, but that is not indicated on either map (p. 192). Probably the most extreme map inconsistency

pertains to the Mountain Dusky Salamander group, where the Allegheny Mountain Dusky Salamander is not shown near the Allegheny Mountains and the entire northern portion of these species’ range is excluded from both maps (p. 188) (although, it is addressed in the text). A different issue arises on the maps for amphiumas, where the colors for the One-toed and the Three-toed Amphiuma are reversed (p. 57). A similar map color reversal is present for Northern and Southern Zigzag Salamanders (p. 433). Each of these may cause some confusion, although nearly all can have the facts inferred with two out of three options, or by checking against maps from other sources associated with AmphibiaWeb, such as Map of Life ([mol.org](http://mol.org)) or Berkeley Mapper ([berkeleymapper.berkeley.edu](http://berkeleymapper.berkeley.edu)).

Additionally, a few inconsistencies in the text may confuse some readers. For example, p. 7 states that there are 120 salamander species in the eastern USA, but p. 8 says that there are 138 species. The tallies of species by family on pp. 8–10 sum to 137 species. The species account of *Necturus alabamensis* describes the Black Warrior Waterdog, but the image captions on pp. 79–80 name the Black Warrior River Waterdog. The species account of the Black-bellied Salamander initially lists 6 species (p. 156), but only 5 species are shown on the map (p. 158). Despite the some of these inconsistencies, I found only one typo, which is impressive in a book of this size. Although there are a few points of confusion in the book, this guide is very easy to use, and just as convenient for finding the life history facts you need as it is for taking time to read through the wondrous diversity of caudates in this region.

The book expertly uses the recurring theme of human threats, which is easily followed. Hints on how to reduce impacts are sometimes blunt, like stating that many species are at risk from timber harvesting, but are other times gently implied. For example, “Anglers can affect local hellbender population levels in any stream by deciding whether to kill these salamanders or release them.” The choice is presented, but the language implies protection. Near the beginning, when discussing different types of habitats in which to find salamanders, the authors importantly address human-modified habitats along with more natural settings. Throughout the “Conservation” portions of species accounts, the ever-growing threat of feral hogs is addressed, especially for salamanders that aestivate in mud. The “People and Salamanders” section near the book’s end is short enough to capture the attention of a non-expert, but is a lovely, objective overview of who may – and who may not – keep salamanders, and why. This section also helps readers to visualize what is often vaguely described as the “nasty” bite that can come from larger salamander species by showing wounds, including stitches, on the hands of handlers. Finally, this section deftly conveys the gravity of human habitat manipula-

tion through direct and indirect effects on salamander survival and reproduction.

More detailed than a field guide or app and more convenient to carry than other North American salamander or amphibian diversity books, this was designed to be a herper's companion. If you are in the market for an inexpensive yet thorough, useful, attractive addition to your salamander or North American vertebrate library, this is a worthwhile investment.

### Literature Cited

- Bishop, S.C. 1943. *Handbook of Salamanders: The Salamanders of the United States, of Canada, and of Lower California*. Comstock Publishing Company, Inc., New York USA.
- Lannoo, M. (ed.) 2005. *Amphibian Declines: The Conservation Status of United States Species*. University of California Press, Berkeley, Los Angeles, California USA.
- Mitchell, J., and W. Gibbons. 2010. *Salamanders of the Southeast*. University of Georgia Press, Athens, Georgia USA.
- Petranka, J.W. 1998. *Salamanders of the United States and Canada*. Smithsonian Institution Press, Washington USA.