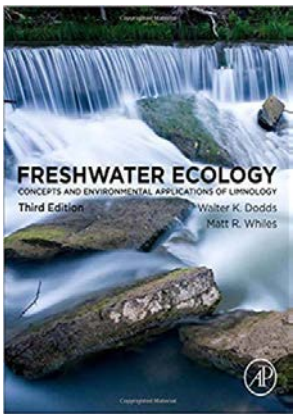
BOOK REVIEW

A freshwater science refresher

by **Bopaiah Biddanda**



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In the end, if we can't save our increasingly threatened freshwater resources, nothing else will really matter. Now, a recently published textbook by two researcher–educators provides a timely refresher on both the basic and applied aspects of freshwater ecology. The book is written both as a textbook for undergraduate and graduate students and as a reference manual for practicing scientists and managers in the fields of water resources, limnology, and freshwater science.

Freshwater Ecology: Concepts and Environmental Applications of Limnology, 3rd Edition by Walter Dodds and Matt Whiles claims to be "a thoroughly updated revision of the classic textbook on limnology and freshwater ecology," and it does not disappoint. In addition to the traditional topics, this edition includes useful, new sections on toxins, pollutants, molecular biology, large-scale ecosystem ecology, and even endearing personal biographies of some leading researchers in limnology. Its 26 chapters and appendix consider topics including nutrient cycling, trophic relations, community interactions, scaling across landscapes, and experimental design. Each chapter ends with a list of take-home points and follow-up questions. It is a well-referenced book, and the citations and index sections are helpful. However, one way by which the book could be improved is moving its introduction of key concepts such as nutrient limitation, the river continuum, and the biome gradient from its final chapters to much earlier ones.

I successfully used the book as the main framework for teaching a graduate course on advanced aquatic ecology in the fall of 2019. I complemented each book chapter with a student-led discussion of one or two related recent articles from journals such as *Limnology and Oceanography* and the *Journal of Great Lakes Research*. I found this hybrid strategy to be effective for communicating concepts and advances within each topic.

On the whole, the arrival of this updated reference book could not be timelier, having come out when humanity is at a crossroads with regard to the world's freshwater resources. The book ends with this personal call to action: "Please take time to reflect on what you have learned from this text, and take with you the valuable parts and make the world a better place. Get your feet wet, enjoy the water." I can't think of a better note on which to end a resourceful, student-oriented textbook on freshwater ecology.

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