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Review of *Fresh Water* by E. C. Pielou

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Fresh Water. E. C. Pielou. Chicago: University of Chicago Press, 1998. x+275 pp. Figures, notes, index. \$24.00 cloth (ISBN 0-226-66815-0), \$14.00 paper (ISBN 0-226-66816-9).

Rarely is a book on water both technical and lucid. E. C. Pielou has the scientist's determination to get the lingo right and the writer's determination to bring coherence to complexity. This is a contemporary natural history of fresh water, as the author makes clear on the opening page: "The most noteworthy characteristic of any small body of fresh water—be it a pond, a stream, an icicle, or a rain cloud—is its impermanence" (1).

There is also an urgency to the book. Since fresh water is only about 3 percent of the world's entire water supply, the author notes that "a shortage of clean fresh water could well be the ultimate limiting factor to human population growth" (ix). Conflict over fresh water has already shaped rela-

tions between the United States and Canada and Mexico. Pundits predict future wars over water in the Middle East.

Fresh Water is comprehensive and well-organized into chapters on the water cycle, groundwater, vadose water, flowing water in rivers and streams, wetlands, lakes, and atmospheric water. Special attention is given to frozen water, water managed through dams, diversions, and reservoirs, and microscopic life in water. There is no specific discussion of urban or industrial water except in terms of pollution.

One of Pielou's real contributions to a lay understanding of fresh water is her clear definition, with examples, of technical terms such as benthic zone, capillary fringe, evapotranspiration, head loss, laminar flow, phreatic water, rating curve, and so on. She also sharpens and clarifies our understanding of more common terms such as aquifers, currents, floodplains, pollution, sediments, turbulence, waves, and the like.

We also learn about methods by which fresh water phenomena are quantified. Two statements are alarming: "Most North Americans have no control, as individuals, over their water supply," although the author adds, "they can reasonably expect its quality to be carefully monitored" (54) ; and "The most dangerous of the hidden pollutants are probably those dating from the post-World War II period that are still underground, en route to as yet unpolluted aquifers, especially if they come from unreported spills at long-forgotten locations" (55) Nevertheless, overall, the book is not harum-scarum.

Maps and diagrams are appropriate and exceptional. Some of the technical explanation, while clear, could have been enhanced by specific examples. The book ends abruptly and needs a few pages of summary and conclusion. The endnote references tend to be more general than specific. More significantly, however, E. C. Pielou makes a special effort to remind us that fresh water is more than a natural resource: it also creates our aesthetic, ecological, and cultural well-being. **John Opie**, *New Buffalo, Michigan*.