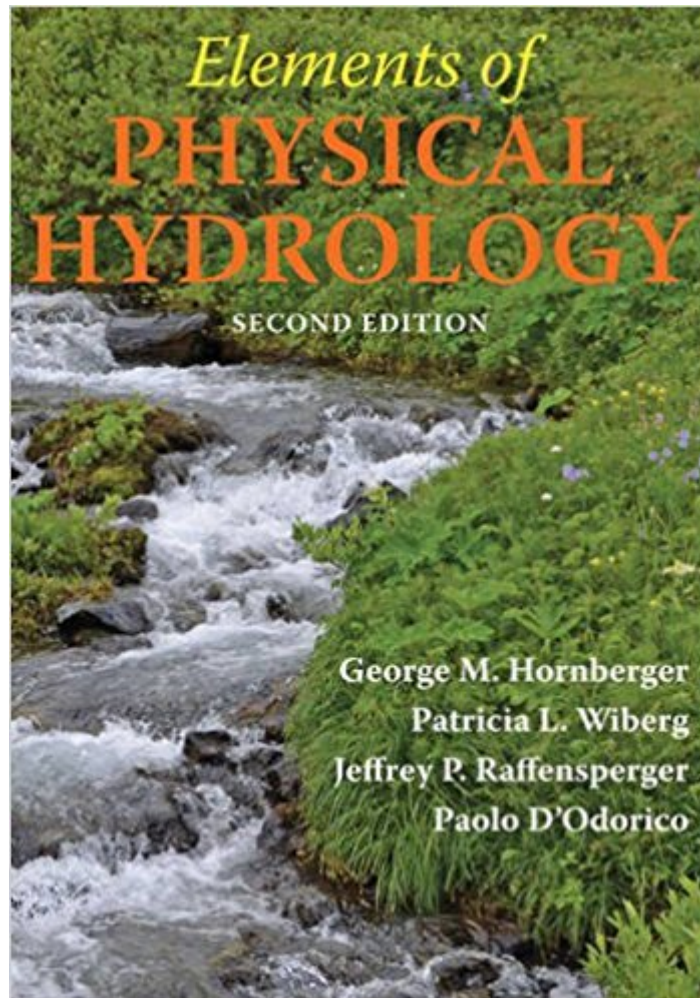




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# Elements Of Physical Hydrology



## Synopsis

Among the many diverse aspects of environmental science, none is more critical to the future of society and nature than water. Understanding the role of water on Earth and making good decisions regarding water conservation and hydrological hazards depends on learning the fundamentals of physical hydrology. This textbook, now in an expanded second edition, provides the clearest opportunity for students to absorb those fundamentals. Written at an introductory level, *Elements of Physical Hydrology* covers virtually every aspect of this subject, including:

- The hydrological cycle
- Water budgets at catchment to global scales
- Spatial and temporal aspects of precipitation
- Evapotranspiration
- Fluid dynamics and the Bernoulli equation
- Laminar and turbulent flows
- Open channel flow
- Flood movement through reservoirs and channels
- Flood frequency analysis
- Groundwater flow
- Aquifer characterization
- Land subsidence
- Soil moisture dynamics
- Flow in the unsaturated zone
- Hydrologic controls on vegetation
- Biotic controls on hydrological processes
- Runoff generation from surface and subsurface sources
- Catchment models
- The water-food-energy nexus
- The globalization of water
- Impacts of changing climate

Layering one topic upon the next, *Elements of Physical Hydrology* succeeds in moving from simple, easy-to-grasp explanations through equations and models in a manner that will leave students new to the topic eager to apply their knowledge. Professionals in related disciplines will also find this book ideal for self-study. Thoughtfully illustrated, carefully written, and covering a broad spectrum of topics, this classic text clarifies a subject that is often misunderstood and oversimplified.

## Book Information

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## Customer Reviews

"This well-illustrated (in three colors), reasonably priced volume is a worthwhile acquisition."  
(Choice)

"An outstanding text that can greatly facilitate improved education in hydrology. Hopefully, this book will be universally adopted for use in undergraduate hydrology courses that have an integrated environmental focus. I fully expect that the book will also find its way to the bookshelves of many professionals and graduate students. Personally, starting next year, I plan to use this book as one of the assigned texts for the three-quarter-long Environmental Earth Science series at Stanford." (Keith Loague *Ground Water*) "Its general introduction to physical hydrology and in particular catchment hydrology via the hillslope-stream continuum is impressive." (Ian Cluckie *Times Higher Education Supplement*) "A publishing model for the future of hydrologic education." (Eos) "A much needed practical and well balanced approach to physical hydrology... Not only will the text serve well in a one-semester physical-hydrology course, but it also should be useful to professionals in almost all fields of environmental science and natural-resource management." (Philip J. Gerla *Journal of Geoscience Education*) "Most aquatic ecologists believe that a solid knowledge of hydrology is, now, a critical tool in the lotic scientist's background... For readers looking for a good basic text in hydrology, this is the one to purchase." (James A. Gore *Journal of the North American Benthological Society*)

A very clear and concise textbook covering the basics of physical hydrology. A perfect textbook for individual study as every chapter is very understandable. Modern topics and areas of research are touched upon but the focus in this book is on a solid understanding of the basics. Highly recommend - I believe this is the only textbook I have ever read from cover to cover.

Useful book

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