

The various sections of the book also have different writing styles and modes of expression, presumably generated by the 11 members of the Task Committee, two of whom were editors. The talent pool on the committee was substantial, but the material in each chapter varied considerably, perhaps reflecting different authors. This situation led to another unknown (i.e., who were the authors of the various chapters and sections). Mention is made of "... the writer" in the second paragraph on p. 87, but there is no identification. Did this unnamed writer work only on the South Platte River, or on all of Chapter 5? It seems fairly reasonable to have the author(s) identified for the sections/chapters that they wrote.

The concluding chapter is excellent, as it serves as a clear, succinct statement of the role of technology in water resources planning. Interesting comments were also made about the role of the federal government and the states in encouraging or discouraging a variety of options to deal with water resource issues. In conclusion, the major goals of the Committee have been met, although there could have been some improvements as previously discussed.

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Water Ethics: Foundational Readings for Students and Professionals, P.G. Brown and J.J. Schmidt (Editors). Island Press, 1718 Connecticut Ave. NW, Ste. 300, Washington, D.C. 20009. 2010. 301 pages. \$35.00 (paper). ISBN 978-1-59726-565-2.

I really enjoyed reading *Water Ethics* because I have an interest in philosophy. But even if I did not have a background in philosophy, I still would have enjoyed reading these essays – maybe it is simply because something in these well written essays resonated with me. Indeed, I find myself re-reading many of the essays – some of them are just that good.

Many of these essays are more than rote academic exercises. I was fully engaged – heart and mind – as I read *Water Ethics*. For me, some of the philosophies expressed have moved me to action. But to be sure, I was not motivated by monetary gain – not for upward mobility. No, I found myself moved to do good just for the sake of doing good – for what I think is right.

Admittedly, I did not instantly recognize many of the essayists in *Water Ethics*. I hope this is because

of my own ignorance of water ethics – my own distorted gestalt focused on the technical issues of water. Still, if you don't recognize these authors, you should not be dissuaded from reading these essays – many of them are beautifully written and often you can feel the emotional connection that the authors have with their art.

Too many excellent works to adequately describe here are included. Indeed, I cannot do justice to reviewing even one single work in the short span of this review. But I think it is useful to discuss two essays that particularly struck me.

The essay, "Fish First! The Changing Ethics of Ecosystem Management," was written by Carolyn Merchant. In particular, one passage moved me: "There is an intrinsic value to all living and nonliving things, and all have a right to survive." I already believed this to be true but until now I felt alone in this view and I remained mute for fear of ridicule. But this passage let me know that there are others that believe as I do and that I am not alone in holding this view. Nor is this a diseased view. So I am now okay with this thought, that there is an intrinsic value to all things and I am moved to action. There is no reason why I cannot incorporate this thought into my professional ethos – I would be dishonest if I did otherwise.

The second essay that stirred me: "Women, Water, Energy: An Ecofeminist Approach," was written by Greta Gaard. Again, there was one particular passage that touched me: "Exemplifying the instrumentalism inherent in Plumwood's master model, Western culture views water primarily as a means to its own ends, a servant to the dominant (not subordinate) population; it is difficult, in this cultural context, to imagine that water would have purposes of its own." Again, I felt relieved that others hold this view – that water would have purposes of its own – as I have held this view for quite some time. Again, I realize that all of my thoughts are not necessarily malformed. Gaard's essay too has moved me to take action – I am emboldened to modify my professional perspective to accommodate my old friend.

I realize that my views might not be held by many other hydrologists – and my views probably won't make me wealthy or popular. But I will say this, these essays, if you let them, can motivate you to take action for what you believe is right.

I am glad that I read *Water Ethics* and I would not hesitate suggesting it to my colleagues. The essays are not necessarily written for the professional philosopher – the essays are not laden with unfamiliar jargon – the views are immediately understandable. But an emotional component espoused by *Water Ethics* is lacking in a purely reductionist view of water.

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Water Resources Engineering (Second Edition),

L.W. Mays. John Wiley & Sons, Inc., 111 River St.,
Hoboken, New Jersey 07030-5774. 2011. 890 pages.
ISBN 978-0-470-46064-1.

This book is a detailed text for all students at both the undergraduate and graduate levels and also an excellent reference for engineers and hydrologists. It is suitable for the first undergraduate course in hydraulics, hydrology, and hydraulic design by reference to selected chapters in those fields. Two new chapters on water resources engineering and sustainability have been added to this revised edition.

The book is divided into five major areas: Water Resource Sustainability, Hydraulics, Hydrology, Engineering Analysis and Design for Water Use, and Engineering Analysis and Design for Water Excess Management. There are 19 chapters in the book that cover the extensive gamut of hydrology and hydraulics with the exception of the water quality aspects of water resources engineering.

The book includes an enormous amount of detail along with copious tables, sample problems, maps, graphs, and photos. The graphs are very useful, numerous, and generally quite clear. Websites are given where appropriate in addition to numerous references. All chapters contain useful problems with worked out solutions and good diagrams for many of the processes.

Chapter 2 deals with water resources sustainability and begins with a very good discussion of the Colorado River Basin and the problems of demand exceeding supply in the foreseeable future, as urban/suburban water demand continues to grow. As in this chapter and throughout the book, the author must be commended for the detail in the tables and footnotes in addition to including the source of the data. However, all of the supporting tables and figures are numbered with three digits, such as the map on p. 17 that is labeled as Figure 2.2.1 rather than Figure 2.1. It is the author's discretion, but many other texts drop the extra digits and just use, for example, Figure 2.1 (Chapter 2, Figure 1) that seems to be easier to find and use.

Chapters 3-6 cover the hydraulic processes associated with flow and hydrostatic forces, pressurized pipe flow, open channel flow, and groundwater flow.

Chapter 7 on hydrologic processes focuses on the engineering aspects of hydrology with particular attention to surface water. Chemical properties of water and its relationship to biota are not included. The maps of drainage basins are a nice feature, especially since most of them have graphic scales with the exception of Figure 7.1.9 (the Upper Mississippi River without the Missouri River). Figure 7.1.3 on p. 235 shows a map of the world with major ocean currents. As the map is greatly extended along the Equator, it would have been useful to provide a name for the projection (presumably some type of equal-area projection). Many references in climatology include "convergent lifting" as one of the four types of lifting mechanisms that result in precipitation. The convergence type is generally not as common as the three types cited on p. 238, but it is still deemed a major source of precipitation, particularly in the lower latitudes on both sides of the Equator. This Intertropical Convergence Zone is noted for copious precipitation, general instability, and rising air in the Hadley cells. It shifts seasonally from about 150°S in North Australia to 250°N in northern India – a range of about 400° in latitude. Chapters 8 and 9 deal with surface runoff and reservoir and stream flow routing. Probability is thoroughly treated in Chapter 10 with numerous problems that involve hydrology and hydraulic design and analysis.

Chapter 11 deals with water withdrawal and uses. Surprisingly, with the exception of Vol. 1 of the Gleick et al., Biennial Reports that started in 1998-1999, no other reference to the other five Biennial Reports that covered the periods 2000-2001 through 2008-2009 was made. Abundant in-depth material about water issues is included in these compilations and to exclude them from the reference list in one or more chapters appears inappropriate. To be fair to the author who has selected some of the best possible references overall to be included, it would have been better to extend the list to include recent works on such important areas as water use and trends. This chapter is potentially very interesting and useful, but some of the data are dated. For example, Figure 11.1 shows United States (U.S.) freshwater withdrawals and consumption based on the USGS five-year reports during the 1960-1990 period. This revised edition does not include the USGS reports (or more formally Circulars) for 1995, 2000, and 2005. Would the trends change if more recent data were included? At the least, it would be nice to know. Similar comments could be made about Table 11.1.2 based on a reference from 1991, Tables 11.1.3-11.1.5, 11.2.1, 11.2.2, and Tables 11.4.2 and 11.4.3.

Flow duration curves are shown in Figure 11.7.2 on semilog graphs. In Searcy's USGS Water-Supply