

# THE WORLD'S WATER

Volume 7

The Biennial Report  
on Freshwater Resources

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# Introduction

Welcome to the latest volume of *The World's Water*. With this volume, we are modestly changing how we name and number the series, moving away from the “year” identifiers and renaming them by volume. This book is thus Volume 7—the seventh in the series produced since 1999. Our goals remain the same: to help improve global understanding of the water challenges and the availability of solutions. Alas, the world water crisis remains: basic human needs for water and sanitation remain unmet for far too many, with serious adverse health and community impacts. Climate change has become increasingly apparent, with growing evidence of impacts on hydrology and our built water systems. Ecosystems continue to deteriorate in many parts of the world. And tensions over water allocations and use are growing, not diminishing. But if there is any good news, it is that these crises in water are also receiving more attention from policy makers, scientists, the media, and members of the public, and that there are effective solutions to these problems. So, I believe that the need for *The World's Water* remains. New thinking about solutions and sustainable water planning and management, better data, case studies, and efforts to raise awareness, are all needed. As with the first six volumes, I and my colleagues explore a subset of the many pressing water issues based on timeliness, urgency, and our own experience and priorities. There is no shortage of topics to address, and as always, it is a challenge to try to choose among them for inclusion in the books. In Volume 7, we tackle some new topics and revisit and update some older ones. We provide a Comprehensive Table of Contents and an integrated index across all seven volumes, to help readers find information in other volumes that might be useful for their research or other efforts.

Chapter 1 offers an overview of the rapidly unfolding connections between climate change and transboundary water resources, including both surface and groundwater. This chapter summarizes work the Pacific Institute recently completed for the United Nations Environment Programme and expands the long line of studies produced at the Institute on the links between climate and water. Chapter 2 summarizes major new work on understanding and classifying water-related risks for the corporate sector and how to define responsible and sustainable corporate water management. This work exemplifies our belief that the corporate sector must develop improved standards around water management and use more rapidly and work with affected communities far more closely than has been the case in the past. This volume also offers a comprehensive overview and perspective on water-quality challenges globally (Chapter 3), also based on work done for the United Nations Environment Programme. Water quality is often the lonely stepchild of more extensive work on water quantity and availability, yet some of the most serious water challenges are related to contamination. Indeed, many water-availability problems have, at their root, water-quality origins. We also offer some suggestions about new approaches for more quickly and comprehensively addressing water-quality problems. Chapter 4 expands on the issues of water quality in

the specific context of producing fossil fuels. We have previously written about the links between water and energy (in Volumes 1 and 2 related to hydroelectric dams, in Volume 5 in a chapter on desalination, and elsewhere). This new chapter expands that work to address a serious water-quality threat related to energy policies and activities, including the new and increasingly worrisome implications associated with “fracking” natural gas formations. Chapter 5 explores the dramatic consequences of the long, severe drought recently experienced by the people and ecosystems of Australia. The responses of that nation offer insights into how difficult long-term climatic changes may be to address, the complications of developing water markets and policies for reallocating water, and the kinds of institutional changes that serious disruptions of expected water availability can cause. Chapter 6 expands on a topic touched on in earlier volumes: the water catastrophe rapidly unfolding in China. Chinese water challenges have often been a topic in these books: the first volume included a comprehensive assessment of the Three Gorges Dam project, then under construction, and the status and implications of that project were reevaluated in the most recent book, Volume 6. Volume 6 also included a comprehensive chapter on China’s water crisis. Chapter 6 in the current volume focuses on China’s dam policies, both within the country and outside its borders where massive Chinese investments and construction projects are under way, with controversial impacts. The final chapter looks at the need for a comprehensive reform of United States water policy at the federal level, drawing on lessons from recent international experience with water policy. This chapter is an advanced look at some of the work being done at the Pacific Institute to redefine U.S. water policy in a more comprehensive way.

As in the previous volumes, the major chapters are supplemented with shorter “Water Brief” reports on items of interest. Heather Cooley and I offer a summary of the energy implications of bottled water—reporting on our research into the overall energy costs of producing, transporting, and using bottled water. Peter Schulte provides an overview of the new Great Lakes water agreements as a good example of both the need for and the value of international cooperation over shared water resources. The third Water Brief offers some fun reading—for readers interested in how water is portrayed in the movies, I provide a summary of diverse dramas, comedies, action films, and more where water is a fundamental component of the plot. Some of the earliest movies ever made portray conflicts over water in the western United States; more recently, water has appeared regularly in science fiction, comedies, and post-apocalyptic movies where themes include access to water, attacks on water systems, or evil corporate world dominators bent on controlling water or the world economy. Add some of these to your Netflix list! And send us examples we have missed. We also bring to the readers, again, our tremendously popular Water Conflict Chronology, with many new historical examples of conflicts related to water going back millennia. This chronology is now available in a wonderful new format online at [www.worldwater.org](http://www.worldwater.org), where readers can sort water conflicts by time, location, type of conflict, and more, and see the results in active maps.

Finally, Volume 7 of *The World’s Water* again offers a wide variety of important, useful, and popular data on water in a series of Data Tables. In this volume, we present updated data on access to water and sanitation around the world, water availability and demand, the mortality rate in children under five years of age from water-related diseases, progress toward the Millennium Development Goals for water, a dataset on trends in overseas development assistance for water, insights into public opinion on

critical water issues based on polls from a diverse set of organizations, information on water quality, and far more. We also provide a sobering look at the list of freshwater animals now considered to be extinct—a measure of the serious impacts humans have on our aquatic environments.

Special thanks to all of the coauthors, especially to Lucy Allen. Lucy contributed serious substance to several of the chapters, and she did a remarkable job of collecting, vetting, correcting, and writing up most of the data tables. Finally, this project has always benefited from the enthusiastic support of Todd Baldwin, my editor at Island Press. Todd has now moved on to different professional pastures, and I miss our regular interactions, his thoughtful comments and insights, and his help, but I look forward to continuing to work on *The World's Water* with Emily Davis at Island Press.

*Peter H. Gleick*  
*Oakland, California, 2011*