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THE TEXAS WATER JOURNAL is an online, peer-reviewed journal devoted to the timely consideration of Texas water resources management and policy issues. The journal provides in-depth analysis of Texas water resources management and policies from a multidisciplinary perspective that integrates science, engineering, law, planning, and other disciplines. It also provides updates on key state legislation and policy changes by Texas administrative agencies.

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Book Review: Water Policy in Texas: Responding to the Rise of Scarcity

Griffin, R. C. (Ed). 2011. Water policy in Texas: Responding to the rise of scarcity. Washington, DC: RFF Press. ISBN: 978-1-93311-589-4, 250 pages, US\$94.95.

URL: www.earthscan.co.uk/?TabId=102395&v=512412

Reviewed by Zachary P. Sugg¹

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This review has been modified from a previously published version (Sugg 2011).*

“The free lunches of the original Texas water endowment have been consumed” (p. 238). This statement nicely captures the current crossroads of water policy in the state of Texas. Like many places where water is over-allocated and demands are ever-increasing, in Texas it is no longer possible to allocate water to one use without reducing the allocation to another. Future water management will largely be about managing trade-offs, and a burning question for water policy scholars and practitioners is how best to go about it. *Water Policy in Texas: Responding to the Rise of Scarcity* aims to convey the Texas experience to date in the hope of making lessons learned, good and bad, available to a wide audience of researchers, practitioners, and the public. The two main aims of this particular volume are (1) to see what has been learned in the Texas water policy experience and (2) to evaluate the current status of water management in Texas, in light of recent changes and future possibilities. The social, economic, and environmental impacts associated with the hottest summer and the driest 12-month period in Texas recorded history only serve to highlight the timeliness of this volume and the critical need to take stock of water policies.

The chapters are intentionally relatively short, with the difficult aim of providing enough substance to be useful as summaries without getting into excessive detail. The authors largely succeed at this. For readers who might need only a well-researched summary on one or more topics, the amount of information given in the chapters will probably be enough, but they are also well-referenced so that those who want to dig deeper into a particular topic will be able to do so, a major source of value of this volume. Although the chapters are mostly written to stand alone, chapters 2 (background information) and 3 (water law) are integral to understanding many of the others. Chapters 3 and 4 and 6 and 7 work well as pairs.

Interestingly, the term “sustainability” is intentionally jettisoned throughout the book due to its ambiguity, which has lent itself to cynical manipulation by some interests. Additionally, water “needs” and “demands” are both given specific definitions. I note this because the problematic ambiguity of such commonly used terms in the “water jargon” is not always identified and clarified up front as it is here. I appreciated these choices and I would wager most other readers will as well.

Texas is introduced in the opening chapter as a policy laboratory where unique responses have been applied to globally ubiquitous water problems. A number of conditions contribute to the uniqueness of the Texas situation, such as the relatively minimal presence of federal agencies in both landownership and water rights, even in federally constructed water storage facilities. Additionally, there is broad geographical and climatic diversity, a strong culture of respect for private property rights, a huge and highly irrigated agricultural economy, and 5 of the 20 largest cities in the US, all of which are experi-

encing rapid growth. Add to this a long coastline and a shared international watercourse border and you have a recipe for a highly complex water puzzle. These characteristics shape many of the issues in the rest of the volume.

Chapter 2 provides a useful backdrop for the rest of the chapters, describing the highly diverse hydro-geography of the state, as well as the current trends of increasing demand, the impact of water use on environmental quality thus far, and the history of state-level water resources planning. The rest of the chapters address various scarcity-related topics such as water law, water marketing and pricing, boundary compacts and treaties, water for the environment, groundwater depletion and management, and technological water alternatives. Most of the policy issues cannot be understood without first grasping the basic legal doctrines, which are described clearly and effectively in chapter 3. These consist primarily of (1) prior appropriation rights (first in time, first in right) to surface water granted by state permits and (2) a separate “rule of capture” law for groundwater, a doctrine where unquantified and unprotected (from interference of others) rights to pump are attached to private property rights in overlying land. Indeed, much of the rest of the book is about various efforts to work around and within this dissonant legal framework.

All of the chapters contain valuable information that seems useful to both researchers and practitioners. I found the strongest and most illuminating of these to be chapter 5 on the regulation of the Edwards aquifer, chapter 8 on transboundary compacts, and chapter 7 on water for the environment. Chapter 6 is particularly engagingly written; while the information it presents on the scientific challenges of quantifying instream flows and estuary health is less explicitly policy-oriented than in other sections, chapter 7 balances it with the necessary legal and policy context. Unfortunately, the same cannot be said for chapter 10, which provides excellent technical information about different desalination and reuse processes but misses an opportunity to engage with any number of important policy-related questions. These questions include topics regarding the environmental impact of brine waste disposal, pricing and access to desalinated water; and public perceptions of reused and reclaimed water and how these alternative strategies are being worked into the existing legal and institutional settings.

Although not intended to be comprehensive, this volume strategically covers a range of very important scarcity-related topics. However, it could have been even more complete with the inclusion of a chapter exclusively devoted to urban water issues, particularly the relationships between water provision, planning, zoning laws, and urban growth. Texas has several major urban areas, and there are likely lessons to learn from the ways they have managed urban water provision and suburban development. Additionally, some treatment of scarcity issues related to water provision in colonias (the poor communities

along parts of the Texas-Mexican border) would have been a welcome contribution. A handful of other interesting issues receive mention but could have been developed further, e.g., various conflicts between users in different demand sectors, the accumulation of private land by private interests in order to profit from the sale of the attached groundwater rights, and the water-energy nexus.

In the end, one does get the sense that Texas has pursued a fairly unique path with regard to water resources, which has been dictated largely by its legal doctrines and the apparent unwillingness to change them on the part of either the state courts or the legislature. Much of the legal and policy change that has occurred has been precipitated by severe droughts, which may remain the case in the future. Many of the lessons contained in this volume are of the cautionary variety and not things that others will want to repeat. The state's public Texas Water Trust, for example, has no funding to acquire water rights and, consequently, has just two water rights for environmental use after over a decade of existence. However, the fact that Texas is bumping up against some hard limits has yielded some interesting developments that deserve wider attention. For one, the experience in Texas with water marketing (chapter 4) should be compared to other similar water markets in other states and countries, given the continual debate over their use as an allocation mechanism. Additionally, the jury is still out on the ideal way to manage and regulate groundwater depletion, and consequently the localised Texas Groundwater Conservation District model (chapters 3 and 9) warrants consideration given that more centralised models in other states have not exactly been panaceas either. Similarly, the creation of a regulated cap and trade model of sorts based on adjudicated groundwater rights for the Edwards aquifer constitutes a ground-breaking rejection of the rule of capture law governing the rest of the state's groundwater that appears likely to yield some important lessons. It will also be interesting to see how the various transboundary compacts Texas is party to will adapt to changing climatic conditions that could alter the baseline flows on which current allocations rely upon. Finally, it seems that there is potential to make some major strides towards allocating water for environmental uses through the environmental flows program authorised by the state legislature in 2007.

As noted in chapter 5, the consensus of future climate model projections for the Southwest, including central Texas, is there will be increases in overall aridity and in the intensity of drought events during La Niña conditions (Seager 2007). The current La Niña-induced severe drought appears to be in line with these predictions, which draws attention to two points. The first is that it will be critical to integrate considerations of climate change into water policy, management, and planning in a meaningful way in order to mitigate the kinds of impacts currently being felt around the state. Unfortunately, this book

does not directly address the issue of whether and to what extent this integration may be occurring in Texas, though the assessment in chapter 8 of the flexibility of compacts and treaties governing water resources on the Texas-Mexico border is rather negative on this point. Second, by exacerbating and highlighting already-existing water issues, the current drought should be a useful moment in which to identify the ways that Texas water policy can be made more effective at mitigating the more deleterious impacts of drought in the future. In that respect, the lessons in this book could not be more timely.

In sum, like most places struggling with water scarcity problems, the Texas case offers a mixed bag of positive and negative experiences. But there are valid reasons for those outside the state to pay attention to how recent developments play out over the coming years. Overall, *Water Policy in Texas* does a laudable job relating the Texas water story in a digestible but highly substantive way. By showing that the types of problems Texas faces are not unique, but that the responses often are, the book successfully makes the case that it is a story worth reading.

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- Sugg, ZP. 2011. Review of *Water Policy in Texas: Responding to the Rise of Scarcity*. Griffin, R.C. (Ed.). *Water Alternatives*. 4(2):245-247.

Editors Note: Chapter names and authors are as follows.

Chapter 1, Experiments in Water Policy, Ronald C. Griffin

Chapter 2, Texas Water Resources, John B. Ashworth and Ric Jensen

Chapter 3, Texas Water Law and Organizations, Ronald Kaiser

Chapter 4, Texas Water Marketing and Pricing, Ronald C. Griffin

Chapter 5, The Edward Aquifer: Hydrology, Ecology, History, and Law, Todd Haydn Votteler

Chapter 6, The Importance of Freshwater Inflows to Texas Estuaries, Paul Montagna, Ben Vaughan, and George Ward

Chapter 7, Water for the Environment: Updating Texas Water Law, Mary E. Kelly

Chapter 8, Texas Boundary Water Agreements, Kathy Alexander Martin

Chapter 9, Ground Water Depletion in the Texas High Plains, David B. Willis and Jeffrey W. Johnson

Chapter 10, Advanced Technologies for Tapping Unconventional Texas Waters, David Jassby, Andrew J. Leidner, Yao Xiao, Andreas Gondikas, and Mark R. Wiesner

Chapter 11, Water Management Guidance from Texas, Ronald C. Griffin