**Water Workshop Common Read Questions**

*The Big Thirst: The Secret Life and Turbulent Future of Water,* by Charles Fishman

**Chapter 1**: The Revenge of Water

If all water “was delivered here 4.4 billion years ago,” that “no water is being created or destroyed on Earth,” then why does water scarcity exist?

The title of this chapter is "The Revenge of Water." Is this an appropriate title? Why/why not? Give me a new title for this chapter, and justify to me (with information from the chapter) why your new title is perhaps a better one.

**Chapter 2**: The Secret Life of Water

What is the role of water in the mantle? How is deep water locked in the Earth different than water we find on the surface?

Now that we know there is a significant volume of water in the Earth's mantle, it looks like we need to redraw the hydrologic cycle. What I want you to do is draw a new version of the water cycle, including the water in the mantle as part of the cycle (don't bother Googling for this - no one has drawn it yet).

**Chapter 3**: Dolphins in the Desert

Sketch / envision an idealized view of the water cycle. Now consider the case study of Las Vegas. Using the examples described in the book, sketch or write about the multiple "entry points" where the natural cycle is disrupted.

"... the real obsession in Vegas is water - displaying it, unfurling it, playing with it, flaunting it." But "Las Vegas has a water emergency." So why don't we just turn off the water? What might be the consequences? (and is it worth those consequences?) Explain with information from the chapter.

How are the issues/challenges in Atlanta, as well as the solutions, the same? How are the issues/challenges and possible solutions for the two locations different?

**Chapter 4**: Water Under Water

What happened to water service in Galveston after Hurricane Ike went through? Describe the damage to the utilities/infrastructure. What did it take to get the water back on?

Examples of water crises from Atlanta and Emlenton are presented. Compare/contrast the two different events. Could these crises have been prevented? Can they be stopped again from happening in the future? Explain.

**Chapter 5**: The Money in the Pipes

Give examples of how IBM and GE are inventing ways to minimize water use and are seemingly successful. What do you think are their motivations for these water-efficient technologies? Explain.

The showerheads in the MGM Resorts' Aria hotel - why did they fail? What could the Aria have done to ensure the showerhead success? What could the Delta Faucet Company have done? Did the hotel give up too quickly? Explain.

**Chapter 6**: The Yuck Factor

Toowoomba is situated at high elevation in Australia, near the mouth of the Murray River, and although it has a dry climate, North America only receives 20% more rainfall than Australia.  How are aspects of the water cycle driving their drought conditions further?

Every state in Australia has a cabinet-level minister for water, as does the Australian federal government. Is this helping Australia? Base your opinion from what you have read. Could these state/federal level positions for water work for the United States? Why/why not?

**Chapter 7**: Who Stopped the Rain?

The Australian government is dealing with the complexities of how to allocate water based on historical patterns of water availability. Why is finding out what a “normal” year of rainfall is so complicated? Be sure to include the water cycle and climate change in your response.

Since the hardcover edition of The Big Thirst was written, the drought in Australia that Fishman wrote about has ended dramatically, with so much rainfall that Australia went directly from drought to flooding. Most parts of Australia that were in crisis just a few years ago now have enough water again. Does that change the lessons from Australia's struggle to remake its society to rely on less water - for Australia? For the rest of the world? Explain.

**Chapter 8**: Where Water Is Worshipped, but Gets No Respect

What is access like to clean water in India? Summarize the information presented from the examples in the chapter for how Indians access water, and how much.

The title of this chapter is, "Where Water Is Worshipped, but Gets No Respect." Who is worshiping water? How? Who is not giving water respect? Explain.

**Chapter 9**: It’s Water. Of Course. It’s Free

What is the "cost" of free water? Explain with examples from the chapter.

Throughout The Big Thirst, Fishman returns to the idea that water is too expensive. In this chapter, he writes, "If you had to pick one thing to fix about water, one thing that would help you fix everything else - scarcity, unequal distribution, misuse, waste, skewed priorities, resistance to reuse, shortsighted exploitation of natural resources - that one thing is price. The right price changes how we see everything else about water." Do you agree? If water should be priced more fairly, how would you go about doing that? What would you do with the revenue from more expensive water? Explain your thoughts with supporting information.

**Chapter 10**: The Fate of Water – Begin the chapter on page 298.

What will be future impacts if our students leave our classrooms water illiterate? How can you design a unit to make your students water literate? Think of not only their content knowledge but practices, behaviors and attitudes.

The Big Thirst describes a whole range of qualities of water - from the way it feels to us, and the impact it has on us emotionally, to the unusual and surprising way companies and farmers use it, to the work and complexity necessary to get our water to us. In this book, what three topics did you learn about water, or about how human beings use water, that surprised you most? Please explain why these three topics each surprised you.

**Afterword**: Water Sheds Its Invisibility

Why do you think this chapter is titled "Water Sheds Its Invisibility"? Give specific examples from the chapter to support your reasons.

This chapter talks about how other universities have used this book as a common read and for an academic year themed on "water." Should our school select The Big Thirst as its next common read? What difference could it make if the school read this book, for individual students, and for the school as a whole?

*These questions were compiled as part of the Penn State Earth & Space Science Partnership Water Workshop (Summer 2015) and Penn State Brandywine offering of EARTH 111 – Water: Science and Society.*