

BLUE REVOLUTION

UNMAKING AMERICA'S WATER CRISIS

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Adult Education
Resource and
Study Guide



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SESSION 1: CHAPTERS 1–3

PRAYER FOR A WATER ETHIC

OVERVIEW

Even in the midst of growing concern about environmental issues, we frequently continue to take our water for granted. We do not behave as if water is a gift from God. And, we continue to behave as though water is limitless, despite increasing examples of draining aquifers and water-stressed cities. In order to move away from our current harmful relationship to water we must take inspiration from Aldo Leopold’s call for a “land ethic” and create an ethic of respect for our water.

The need for this ethic is reflected clearly in the history of two of the United States’ freshwater systems, the Everglades in Florida and the Sacramento-San Joaquin Delta in California. These waterways tell a story of the problems caused by massive human intervention in natural water flow. In both areas, engineering projects altered waterways and artificially diverted water. With these projects came the unintended consequences of endangered ecosystems and ever-increasing calls for still more water projects. Attempting to restore both waterways, politicians have eagerly promised to simultaneously fulfill the water needs of all interest groups. Their failure to find long-term solutions only demonstrates that infrastructure projects are not the answer. Instead, we need to find ways to change our fundamental relationship with water.

The Netherlands’ history of water management is a good place to start in our search for a more sustainable perspective on water use. As a result of living in a place where day-to-day survival is dependent on preventing floods, the Dutch have developed a system of government that necessitates participation and cooperation by diverse groups of stakeholders in order to manage water systems. While this model does not mean that everyone always agrees on how to manage water, or that problems of water management do not continue to trouble this area, it showcases the way that prioritizing water on a wide scale can lead to a system that values and all voices.

The first three chapters in *Blue Revolution* paint a startling picture of the dangerous consequences of continuing to

ignore the limits of water in the United States and around the world. The author discusses the illusion of never-ending supplies of water, and the need to recognize that human management solutions may create problems or disappoint some stakeholders. *Blue Revolution* calls for the development of a water ethic as a way to solve these issues and remind us of the connections between water quality, abundance, and humankind’s ability to thrive.

FAITH REFLECTION

As Christians, we already possess a water ethic deeply embedded in our own faith. Throughout the Bible, we are told that water is a sacred gift from God, beginning with the story of Creation:

*In the beginning when God created the heavens and the earth, the earth was a formless void and darkness covered the face of the deep, while a wind from God swept over the face of the waters. (Genesis 1:1-2) And God said, ‘Let the waters under the sky be gathered together into one place, and let the dry land appear.’ And it was so. God called the dry land Earth, and the waters that were gathered together he called Seas. And God saw that it was good. (Genesis 1:9-10)**

When we take time to reflect on this story’s message, it is clear that water is a precious gift. This knowledge can provide the grounding for a Christian water ethic; it serves as a guiding reminder to be good stewards of water, which is the foundation of so much of Creation. When we turn away from God’s call to care for water, we hurt other parts of God’s Earth and overlook the interdependence of all parts of Creation. As Christians, it is vital that we keep in mind our shared water ethic in order to protect the entirety of God’s Earth.

*All biblical passages are taken from the New Revised Standard Version

DISCUSSION QUESTIONS

- Though we know we are called on to protect and honor water as a gift from God, putting our water ethic into practice can be challenging. What would a water ethic for our world or country look like? What about a water ethic for your congregation? What commitments are needed? What specific behaviors or policies would we change?
- Water can be a destructive force, just as it was for the people of the Netherlands during the North Sea Flood described in the *Blue Revolution*, and as it has been for so many other flood victims around the world. However, as

Barnett's description of the water woes of California farmers makes clear, lack of water and drought can also be harmful. Have you experienced water or lack of water as a frightening in your own life? Have you experienced healing or restoration through water? Does water ever help you feel the presence of God in your own life?

- Brainstorm a list of ways that water is represented in the Bible. What role does water play in these Bible stories? What does it symbolize? How is water used in your church services or activities? What roles has water played in your own faith life?

SESSION 2: CHAPTERS 4–6

GOD'S ABUNDANT GIFT OF WATER

OVERVIEW

Much of the water that we use on a daily basis is consumed in production processes that we rely on but are easy to forget about. One of the most prominent examples of this “hidden” water is the water that is used by power companies. Energy production now demands more water than any other sector, including agriculture, and very little progress is being made to slow that demand or transition to less water-intensive forms of energy production. Hydropower plants change the course and ecosystems of rivers, thermal power plants alter water temperatures, and even energy sources that are often considered to be more “green” such as ethanol and solar use significant amounts of water. Both the energy industry and individuals continue to push for larger supplies of water instead of trying to limit our demand for energy, but in a society with a water ethic, we would focus first on trying to reduce our demand for both water and energy.

Agricultural irrigation represents another major contributor to our hidden water footprint, and wasteful use of this water is a major cause of the United States' growing water woes. Though some new technologies allow farmers to irrigate in more efficient ways and use less water, irrigation continues to drain aquifers at an unsustainable pace. This harm is only furthered by federal crop and irrigation subsidies that make it profitable to grow water-intensive crops in very dry places. A water ethic would demand a new system of government subsidies that discourages waste of water in agriculture and encourages wise and sustainable farming.

A final and often ignored obstacle to sustainable stewardship of our water is the municipal water systems of the United States. These systems are outdated and inefficient, and many water managers and engineers demonstrate little interest in finding a new path. Though new systems that focus on reducing water use and recycling runoff and wastewater are cheaper, water management companies have a financial incentive to keep promoting the large scale supply-side projects that have and continue to be the source of many of our water problems. Most local water boards do not have processes that allow for easy citizen participation or input, but global water firms often have enormous influence in these decision-making processes, through direct involvement in planning new water projects and significant campaign donations at every level of government. Moving towards a new relationship with water in the United States will require overcoming these corporations' many obstacles to change.

In the second section of *Blue Revolution*, the author explores connections between the commodities and services we access every day and the availability of water. Water is an essential part of our daily lives from the water we drink to the water required for food and energy production. Perhaps one of the clearest signs that we still lack a national water ethic can be seen in the failure of government offices and engineering firms to reform our water systems. We waste and pollute water every day by using inefficient irrigation systems and refusing to modernize stormwater management systems. In situations ranging from mindlessly turning on the tap to the development of new forms of energy

production that use tremendous amounts of water, we consistently fail to appropriately care for water in various aspects of our daily lives. As a nation, our lack of a water ethic only traps us and our lawmakers in a cycle that perpetuates these broken systems that are failing us and harming God's earth.

FAITH REFLECTION

The Bible teaches us that water is an abundant gift from God, given to sustain us and all of Creation. The abundance of water is reflected in this passage from Psalms, praising God for the riches of the natural world.

You make springs gush forth in the valleys; they flow between the hills, giving drink to every wild animal; the wild asses quench their thirst. By the streams the birds of the air have their habitation; they sing among the branches. From your lofty abode you water the mountains; the earth is satisfied with the fruit of your work. You cause the grass to grow for the cattle, and plants for people to use, to bring forth food from the earth, and wine to gladden the human heart, oil to make the face shine, and bread to strengthen the human heart. The trees of the Lord are watered abundantly, the cedars of Lebanon that he planted. (Psalm 104)

When we forget to see water as a life-giving and bountiful treasure from the Creator, we can begin to use it in wasteful ways. In this Psalm, water creates springs, quenches animals' thirst, waters trees and nourishes all of creation. This is a powerful reminder that if we care for this gift and do not squander it, God has given us enough to provide for many different needs. All too often, we do not think of water as a resource from God, instead merely seeing it as a mundane part of our day to day life, or even ignoring it entirely. When

we work to see water as an essential part of God's Creation, however, we can identify waste of water as a misuse of Creation, and recommit to protecting God's earth and making sure all have enough water to thrive.

DISCUSSION QUESTIONS

- Chapters 4–6 of *Blue Revolution* highlight the fact that in our search for solutions to the world's environmental problems, we often unintentionally produce answers that may be "green" but are not very "blue." For example, as the section about the water costs of energy points out, renewable sources of energy such as solar plants can be incredibly thirsty. Yet as Christians, we are called to honor and protect all of God's Creation, including water. How do we choose what tradeoffs are acceptable in the search for environmental sustainability? What changes can we as a faith community make to encourage a narrative about Creation that is inclusive of water concerns as well as other environmental issues?
- Just as the Creation story begins with water and moves on to discuss plants, animals and humans, many of the products we eat and use begin with or require water. The book discusses hidden water—what hidden water do you think goes into your running your congregation and holding church services? What steps can your congregation take to reduce this burden of hidden water?
- In many faith traditions, asceticism, or simple living, is an important spiritual practice. As these chapters make clear, there is also a fundamental connection between living simply and reduced water use. Do you find that striving to live simply is a spiritual act? How can you use your faith as a resource or frame for attempting to live more simply in the future?

SESSION 3: CHAPTERS 7–9

TRANSFORMATIVE WATERS FOR GOD’S EARTH

OVERVIEW

Blue Revolution highlights need for broad community participation when attempting to fundamentally alter relationships with water, and Singapore’s recent history is a perfect example of this. Singapore’s waters have undergone an abrupt transformation over a single generation, from polluted and scarce to clean and accessible. Integral to this shift has been the simultaneous shift in the attitudes of the government and citizens towards water. Singapore’s intense government control of all aspects of life succeeded in moving sources of pollution, cleaning rivers and developing a technologically advanced system to recycle waste-water and store drinking water. In addition, dedication to opening up waterways to public viewing and recreation has instilled a deep connection to water in Singapore’s population. Though Singapore’s path and water management methods are very different than those of the United States, its example demonstrates the real possibility of creating a citizenry that cares deeply about protecting and conserving water.

All too often, however, water managers in the United States bypass the water-conserving ideals of Singapore and other nations, choosing to address the symptoms rather than the cause of local water woes. Their innovative solutions to increase water flow to their areas do not solve the fundamental problems of waste and inefficiency plaguing of our water systems. Patricia Mulroy, of the Southern Nevada Water Authority has spent her career working to direct more water to Las Vegas through massive-scale groundwater tapping and a longer-term dream to redirect Mississippi River water to the thirsty West. Georgia’s lawmakers have utilized lawsuits, interbasin transfers and dam projects in a continuing search for answers to their lack of water. Yet both of these examples showcase the tendency of cities and states to viciously fight each other for more water, instead of devoting their efforts to trying to conserve.

One way to address our ever-increasing demand for water and reluctance to conserve water may be a reevaluation of water prices. The United States has some of the lowest water rates in the Western world, and subsidies encourage further inefficient use of water by farmers and industry. Putting a fairer price on water might go a long way towards making us

value it more. According to some economists, this can be done with a tiered system that provides a certain amount of water very cheaply, but starts to raise rates dramatically as water usage climbs above what is needed for daily basic usage. While increasing the price of water cannot be the only way to increase the attention we pay to water, pricing water to reflect its value will help us remember that water is a resource that is not inexhaustible.

Taken together, these chapters of *Blue Revolution* show that while developing a radically different relationship to water can be transformative for an entire country in just a matter of years, true change in our water management systems is incredibly difficult. It is much easier for local and state governments to fight each other over limited water than to collaborate to make sure less water is used overall. These chapters also address the complicated ethical issue of pricing water, arguing that in order to encourage us to see the true value of water, we need to set its cost to reflect its vital importance. The transformation of our water usage habits requires us to truly appreciate our water, and we must use a variety of tools to make that happen.

FAITH REFLECTION

In the Bible, water often is a symbol of spiritual renewal and transformation, as in the story of Jesus’ baptism:

John the baptizer appeared in the wilderness, proclaiming a baptism of repentance for the forgiveness of sins. And people from the whole Judean countryside and all the people of Jerusalem were going out to him, and were baptized by him in the river Jordan, confessing their sins. Now John was clothed with camel’s hair, with a leather belt around his waist, and he ate locusts and wild honey. He proclaimed, ‘The one who is more powerful than I is coming after me; I am not worthy to stoop down and untie the thong of his sandals. I have baptized you with water; but he will baptize you with the Holy Spirit.’

In those days Jesus came from Nazareth of Galilee and was baptized by John in the Jordan. And just as he was coming up out of the water, he saw the heavens torn apart and the Spirit descending like a dove on him. And

a voice came from heaven, 'You are my Son, the Beloved; with you I am well pleased.' (Mark 1:4-11)

We use water in baptisms as a powerful reminder of the forgiveness and love that God offers to us all. In baptism, the transformative power of water lies in its ability to wash away sins and welcome the baptism recipient into the community and the body of Christ. How can we use this example of the symbolic renewal of baptismal waters to transform our world's relationship with water? Just as God's love is available for all, we must also work to make sure that the water that is so valuable to all life is shared equally across the globe. If we treat water as part of Creation, and vow to share its abundance with all who are thirsty, we can begin to move beyond our previous flawed ways of managing water and buying water and begin to work as a larger community with a common interest in preserving this precious gift.

DISCUSSION QUESTIONS

- Why do you think that baptism is linked so strongly to water? What role does water play in your congregation's practice of baptism? How would the meaning of baptism be altered if it did not involve water? If your congregation does not practice baptism, are there other roles that water plays in your liturgy? Why are these water-based?

- Humans have been transforming our waterway for ages with interventions ranging from major engineering projects to unfortunate additions of fertilizers and pesticides. As these transformations take their toll on God's earth and community health, many people are inclined to look towards ever more technological transformations to solve our problems. Barnett ends Chapter seven by writing, "We have the engineering prowess to harness every river. We have the technology to wrest freshwater from sewage. . . . But if we took better care of our abundant water resources, and if we used them wisely, *we wouldn't have to*" (p. 138). Does technology have a place in solving our water woes? If so, how much and what kinds of technology are appropriate? Does a reliance on the transformative potential of technology blind us to other solutions, or create larger problems in the future?
- Barnett lifts up the many congregations in Atlanta who are working to create a local water ethic through education and advocacy. Brainstorm a list of ways in which your congregation could get involved in encouraging decision-makers to treat "downstream neighbors . . . 'not as competitors with whom to be at war, but as companions in the shared responsibility of protecting water.'" Are there legal battles or pending legislation that would impact water usage in your area?

SESSION 4: CHAPTERS 10–12

LIVING WATER, LOCAL WATER

OVERVIEW

In many places around the world, droughts and increased demand for water have spurred citizens and governments to change how they relate to and use water. In Perth, Australia, for example, a massive country-wide drought has encouraged dramatic reductions in water usage, while community engagement in water issues is on the rise. Facing drying dam reservoirs and a rain-free forecast, Perth adopted a total irrigation ban in the early 2000s. This led to a significant shift in attitudes towards water in the city, with residents discovering they needed less water, and becoming engaged in decision making processes related to water. They began to speak out against a plan to tap an aquifer for more water, and worked together with the water management corporation to develop a plan that relied on community

engagement, education and recycling of wastewater. Today, Perth's water ethic is evident in citizens' commitment to learn to permanently live with less water, shown in widespread use of rain tanks and native landscaping.

Though it can be hard to envision a similar dramatic change in the water use practices of the United States, San Antonio provides an example of a way forward. Spurred by a Sierra Club lawsuit against the city's draining of an aquifer, San Antonio has made waste of water illegal, regulated everything from carwashes to types of grass for landscaping and spearheaded programs including one that provides free plumbers to fix leaks. These changes have brought about increased concern for the aquifer among residents and inspired businesspeople who now make their living from harvesting rainwater. And, reflecting the important part

people have faith can play in bringing about a water ethic, the local Sisters of Charity have committed to ecological work on the San Antonio River.

The changed water usage patterns of Perth and San Antonio demonstrate the fundamental importance of reconnecting with our water. In too much of our lives, we have forgotten this deep connection, and, more importantly, the critical and sustaining role played by local sources of water. Developing a water ethic requires a return to caring about and interacting with local water. When children grow up playing in lakes near their house and adults visit nearby rivers as citizen scientists, cities and towns reform connections with their waterways that are the basis of protecting and understanding water. On a fundamental level, a water ethic is about community engagement and reconnection, with all stakeholders acknowledging the value of water, and working together to use as little as possible.

The final chapters of *Blue Revolution* examine the profound difference that wide scale reevaluation of water priorities can have on a city. Places like Perth, Australia and San Antonio, Texas have increased community participation in water decision-making processes and chosen to reduce water use instead of searching for ways to obtain more water. Through an exploration of the themes of water conservation, altered relationships with water brought on by drought, and increased interest in reusing and conserving local water, the author points the way towards a future individual and community level water ethic. This ethic will only be possible if we begin to value all the ways we depend on water, and make a commitment to speak up for sustainable water management.

FAITH REFLECTION

The Bible often uses water as a symbol of everlasting life through God and the story of Jesus meeting a Samaritan woman at a well reminds us that we need both physical water and the living waters of God.

A Samaritan woman came to draw water, and Jesus said to her, 'Give me a drink'. (His disciples had gone to the city to buy food.) The Samaritan woman said to him, 'How is it that you, a Jew, ask a drink of me, a woman of Samaria?' (Jews do not share things in common with Samaritans.) Jesus answered her, 'If you knew the gift of God, and who it is that is saying to you, "Give me a drink", you would have asked him, and he

would have given you living water.' The woman said to him, 'Sir, you have no bucket, and the well is deep. Where do you get that living water? Are you greater than our ancestor Jacob, who gave us the well, and with his sons and his flocks drank from it?' Jesus said to her, 'Everyone who drinks of this water will be thirsty again, but those who drink of the water that I will give them will never be thirsty. The water that I will give will become in them a spring of water gushing up to eternal life.' The woman said to him, 'Sir, give me this water, so that I may never be thirsty or have to keep coming here to draw water.' (John 4:7-15)

This passage reminds us that when faced with a problem, we often focus only on our superficial needs. It is easy to forget to go deeper to receive the love and healing offered by turning to God in challenging times. In a similar way, Barnett reminds us that we have lost our connection to the value of our water systems. We are called to use our current concern over water supplies to alter our relationship with water, and treat it as a valuable gift from God. In order to find true solutions to our water crisis, we must remember this call and work together to encourage a deeper water ethic of conservation for the entire nation.

DISCUSSION QUESTIONS

- Barnett argues that an important part of creating a water ethic is giving children a connection to the local water in their areas. What experiences with water do you remember from your own childhood? How did those shape your relationship with or thoughts about water today? Do you feel they moved you closer to a water ethic of your own? What water experiences do you think are important for today's generation of children?
- Take a moment to re-familiarize yourself with the water ethic put forward by Barnett at the end of the book (p. 228):
 - Americans value water, from appreciating local streams to pricing water right.
 - We work together to use less and less—rather than fight each other to grab more and more.
 - We try to keep water local.
 - We avoid the two big mistakes of our history: overlapping aquifers and surface waters and overrelying on the costliest fixes that bring unintended consequences to future generations.

- We leave as much as prudently possible in nature—aquifers, wetlands, and rivers—so that our children and grandchildren, with benefit of time and evolving knowledge, can make their own decisions about water.

Do you agree with this ethic? Is it missing anything? Can you think of a shorter and more compelling way to phrase this that would appeal to those who are not already interested in this issue?

- Create a list of ways in which your congregation could work to conserve water and keep more of it local. Could you change your landscaping or install a rain barrel? What can you do to make sure your plumbing system as efficient as is possible? Could you educate other people in your community about local water issues? Think beyond your congregation's visible water uses, and also consider your virtual water footprint.

ACTION IDEAS TO ACCOMPANY YOUR STUDY AND DISCUSSION

- Choose one of the ideas you came up with about how to get involved with water issues and put it into practice. Work to conserve water in your own congregation or advocate for change within the broader community. Write a policy maker or elected official, or send a letter to the editor of your paper to let your community know that as people of faith, your congregation is working to transform local water wars into dialogues about how everyone can conserve water.
- Based on your envisioning of what a water ethic for your congregation would look like, create a prayer that lifts up how you would like water to be treated and used by your congregation. Close your study session by saying this prayer together. If it is possible, consider using this prayer during worship services for the whole congregation.