

## Section 1: Introduction

Water is life. It is crucial in determining where we live and work and what we eat and drink. It is an essential biological and natural resource that people struggle to access and control. It allows us to connect with people in other parts of the world; yet, it blocks our paths. Water shapes human culture -- our ways of life. It is central to many rituals and ceremonies around the world and inspires art and music.

Our world is mostly water. About 71% of the Earth's surface is covered by water. And, we're mostly water too: about 60% of the human body is water. Water is pretty much all around us. So, what is water all about and how do we relate to it?

- **Water is Intriguing:** Water occurs naturally as a liquid, solid or a gas. And, each of those states is useful in our environment and in human life.
- **Where is Our Water?** Water is one of the most plentiful substances on Earth. Yet, the overwhelming majority of that water is actually unavailable for use by humans. Of the 327 quintillion gallons of water on Earth, only 3% is freshwater – which is critical to preserving life on the planet. But, much of that freshwater is largely inaccessible. A flipbook helps visitors understand that we all rely on a surprisingly small percentage of the Earth's water.
- **What is a Watershed?** The old adage that someone is always downstream from you is actually true. Everyone lives within a watershed — an area of land in which water collects and, ultimately, drains into a water source. Watersheds are like big funnels where water flows down to the lowest point of elevation into a catchment, like a lake or sea. Visitors will be able to touch a relief map of the Elwha River watershed in Washington to learn how terrain creates a watershed and understand how someone else's water becomes your water.

## Section 2: Source

Water is the source of our very lives. It is at the source of the things we encounter every day. It shapes our land, forms our communities, and inspires our culture. The ebb and flow of water creates and destroys the land we inhabit. Access to water determines where, and how, we build our communities and structure our lives. Water holds a central place in the origin stories and rituals of many cultures and faiths. Water inspires our art, music, dance, and literature. What would you lose if you did not have water?

- **Carving and Claiming the Land:** Water, no matter how gentle it might look on the surface, is one of the world's most powerful natural forces — one that has the ability to give shape and form to the landscape around us. The intense power of water created natural wonders like the Grand Canyon and Niagara Falls. A "Ripple Effect" interactive allows visitors to see three stories related to displacements caused by flooding.
- **Glaciers:** Glaciers may be rivers of ice, but they're not frozen in place. Glaciers flow, growing and retracting over time. Through its gravity-induced movement, a glacier grinds up or deposits rock and earth, smoothing the landscape beneath its tremendous weight. Glaciers made some of the natural features we know today, including Minnesota's

11,000-plus lakes, Michigan's Sleeping Bear Dunes, Niagara Falls, and the valleys and Finger Lakes of central New York.

- **Water Inspires Our Humanity:** Water is central to humanity. We need it to survive. But how we interact with it is individual. Nearly all cultures and faiths incorporate a level of reverence for water. Whether water is plentiful or scarce, it is as essential to human culture as it is to life.
- **Spirituality and Water:** A flipbook allows visitors to explore water-related traditions in major faiths.
- **Home is Where the Water Is:** The availability of fresh water is a basic need for communities. In the past, people settled in places with adequate water. Today, tens of millions of Americans continue to make their homes along the water's edge. A "Ripple Effect" explores how people have worked to reclaim land from water.
- **A Critical Resource, A Societal Asset:** Water is a shared resource. It flows between communities; the water used upstream is also used downstream. Water's usefulness – and our unquestionable need for it – makes it a valuable commodity. Disputes over access and availability of water happen regularly, throughout the world, our country included. These disputes often lead to a difficult question for a community to answer: Who owns the water?

### **Section 3: Flow**

Water is a core factor in our relationships with the world around us. The ebb and flow of water both connects and divides us. Historically, access to water made it easier to travel, migrate, or trade with others. Water was the fastest pathway to other places. Today, waterways still serve as highways, moving people, cargo, and ideas. Water is also a natural border, and it makes a logical political boundary. It can also be significant as a cultural or symbolic border. For those traveling by land that same water can be a barrier. What are the ways that water forms connections and divisions in your community?

- **Water as a Connector, Gateway and Highway:** Water has served as a gateway to freedom or for migration. Historically, the opportunity to travel by water made islands into crossroads for world cultures. Water also allowed us to communicate and trade with others.
- **Water as a Physical and Cultural Border:** In American culture, the Mississippi River is often viewed as the divide between east and west, while the Ohio River serves as a divider between the north and south.

### **Section 4: Quench: Harnessing the Power of Water**

Humans not only drink water—we put it to work. We search for ways to control water and the energy it possesses. According to the US Geological Survey, Americans withdrew 355 billion gallons of water for use each day in 2010. Massive dams don't just corral our drinking water. They can also generate power. Miles upon miles of canals and irrigation ditches water our crops. We use water to make goods like paper and computer chips, to keep lawns green, and for cooking and cleaning. An interactive called "How Much Water" allows visitors to see how many gallons of water it takes to grow or produce a variety of familiar goods from milk to chicken to blue jeans.

- **At Home:** You've probably had a glass of water to drink today, taken a shower, or washed some dishes. We use water in our homes every day. For most Americans, water is so easy to get and use that we don't even think about it. According to the US Environmental Protection Agency, 71% of interior domestic water is used in bathrooms. Additionally, people use water to cook, clean, water plants, and many other uses.

- In Agriculture: Agriculture, and its often heavy use of irrigation, is one of the largest consumers of freshwater in the United States. In 2010, the US Geological Survey reported that irrigation accounted for about 38% of freshwater withdrawals.
- In Power and Industry: Much of our water goes into making and powering the machines and tools we use each day. Manufacturing plants can be significant consumers of water. Many goods require large amounts of water to produce. But, in 2010, thermoelectric generation plants used more than 40% of fresh water in the US. That's even more than the amount used for irrigation. Most of this water was used to drive steam-powered turbines to create electricity.
- Water and Work: A flipbook featuring several stories about the culture of working on or in the water allows visitors to explore the deep connections between water and work.
- Finding Comfort and Purpose in Water: Our relationship with water is both personal and communal. We look to water to provide peace and solitude in the midst of our hectic daily lives. We see natural beauty along riverbanks and we pause to admire sunrise and sunset at the water's edge. Yet water also has a way of bringing us together. We gather at the shore of the ocean, a lake, or a river to swim, fish, kayak, or boat. An object case featuring items related to travel and recreation demonstrates our strong connections to water.
- Culture and Heritage at the Water's Edge: Local tradition bearers in communities from diverse cultures across the United States work closely to preserve customs tied to the water. By collecting stories and continuing community festivals, Americans everywhere are embracing and expanding upon those water traditions.

### **Section 5: Water is Eternal?**

Water is a finite resource. Our environment does not create water – it recycles it. We must take steps to ensure the quality and reliability of our current water sources. We need to find ways to recycle water and make untapped water sources useful. Even though we have the recipe – two parts hydrogen, one part oxygen – we cannot safely make our own water. Population growth is altering access to water supplies. Scientists continue to study how climate changes could affect water supplies in the future. Americans are making great strides in cleaning up water supplies, but pollution remains a problem. A flipbook titled “Before and After” uses satellite imagery to visually trace the results of negative impacts like drought and positive efforts like reclamation efforts in several environments. Visitors will also be able to use an iPad-based app called WaterSim America developed by Arizona State University. The app will run a powerful water modeling simulation that allows users to adjust variables that impact water supplies in their states and determine how to best maintain and sustain the water supply.

- Pollution and Runoff: Think about how our water cycle works: What we discard will eventually be in someone else's water. The water we use for drinking and washing comes through our taps from the world around us. And we also send chemicals like medications, soaps and detergents, dirt, and even skin cells down the drain. After treatment, it ultimately returns to the environment. That waste makes its way into rivers and ground water. What we eat, what we drink, what we put on our hair and skin, what we wash out in the sink — if it's on us or in us, it ends up back in the watershed.
- Climate Change: Increased global temperatures have a significant impact on the water cycle. Climate change isn't just about heat – some places will be colder, some hotter. But the overall changes in the climate will lead to new weather patterns and environmental impacts. Scientists predict rises in sea level, rises in sea surface temperatures, and significant loss of glaciers and ice sheets through melting.

- **Not Enough Water:** Water use has grown twice as fast as the world's population over the last century. In the United States, population increases in the desert southwest put incredible pressure on the arid area's scarce water supplies. But even places with sufficient rainfall often find that freshwater resources are spread too thin. People who live where water is scarce develop many ways of adapting their water use. Some catch and keep what little rain falls to reuse for gardening, others drill wells, and some who can afford it even extract salt from seawater.
- **It's Our Water:** Americans have learned over the past century that our access to clean, usable water is far from guaranteed. No new water is being created – we have to protect the water we have and use it wisely. While some water challenges are seemingly insurmountable, people are great problem solvers. There are many easy, positive changes we can make right where we live. It is possible – and necessary – to renew, refresh, and reuse water. Examples from different parts of the country reveal how communities have overcome pollution through creative programs and developed opportunities for people to learn how to monitor and manage water resources.
  - Grassroots action to solve serious pollution on Ohio's Cuyahoga River contributed to the creation of national water protection regulations.
  - Fort Worth, Texas helped turn back pollution on a local lake with creative programs to encourage residents to prevent chemical runoff.
  - Education programs at the local and national level engage students in learning more about water and how to manage it.

### Digital Stations

Two digital content stations are also part of Water/Ways. Both stations feature content developed by the Smithsonian and an array of partners. The stations are designed to provide even more in-depth information about water as a natural resource and its ability to influence the environment and human culture.

- **The Power of Water** expands on topics introduced in the Introduction and Source sections of the exhibition, including the science surrounding water, water's role in shaping the environment and landscape, and water's inspiration of human spirituality and creativity.
  - Cool Water Facts and Water Shapes our Earth: From snowflakes to waterfalls to marine gyres to wastewater treatment – everything you want to know about water's impact on the natural world
  - Creativity: Exploration of water's connections to art, music and literature
  - Spirituality: A look at water-related traditions in world religions
- **Our Relationship with Water** focuses on themes explored in the Flow, Quench and Water is Eternal? sections of Water/Ways. The media offered in the station looks at how we use water, how we relate to it and establish priorities for meeting water challenges.
  - Work: Many jobs are done on and around water. Workers in these professions are often closely tied to water and develop many cultural traditions
  - Heritage and Recreation: We love to have fun by the water's edge
  - Community Responsibilities: Water is a critical resource that faces a variety of challenges. These video and image selections explore the choices communities make about water and how they handle the consequences
  - The Future: Where will our relationship with water be in 2020? 2025? 2050? Scientists and scholars are exploring the changes that may impact water supplies in the future