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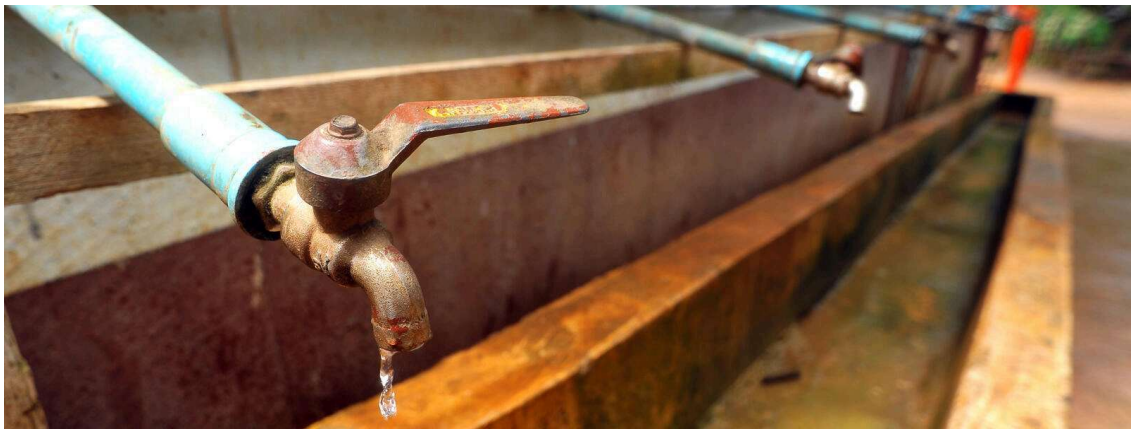
Water Scarcity



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Water Scarcity
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Overview

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Water covers 70% of our planet, and it is easy to think that it will always be plentiful. However, freshwater—the stuff we drink, bathe in, irrigate our farm fields with—is incredibly rare. Only 3% of the world's water is fresh water, and two-thirds of that is tucked away in frozen glaciers or otherwise unavailable for our use.

As a result, some 1.1 billion people worldwide lack access to water, and a total of 2.7 billion find water scarce for at least one month of the year. Inadequate sanitation is also a problem for 2.4 billion people—they are exposed to diseases, such as cholera and typhoid fever, and other water-borne illnesses. Two million people, mostly children, die each year from diarrheal diseases alone.

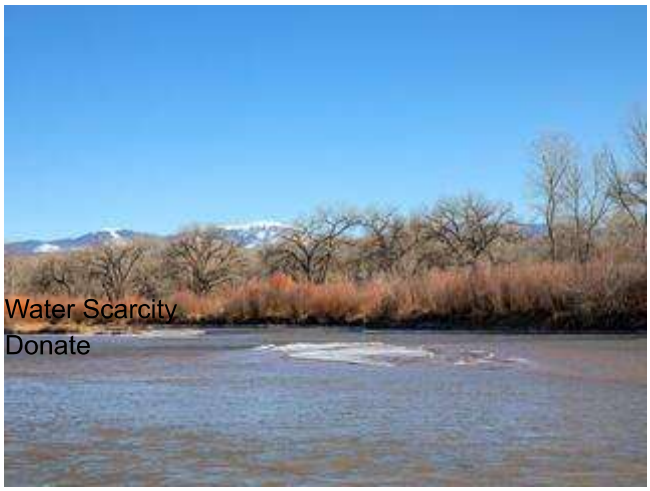
Many of the water systems that keep ecosystems thriving and feed a growing human population have become stressed. Rivers, lakes and aquifers are drying up or becoming too polluted to use. More than half the world's wetlands have disappeared. Agriculture consumes more water than any other source and wastes much of that through inefficiencies. Climate change is altering patterns of weather and water around the world, causing shortages and droughts in some areas and floods in others.

At the current consumption rate, this situation will only get worse. By 2025, two-thirds of the world's population may face water shortages. And ecosystems around the world will suffer even more.

WWF's Enrique Prunes on restoring the Rio Grande

Growing up in Chihuahua City, Mexico, Prunes spent summers, holidays, and weekends with his mother's family in Valle de Allende, a centuries-old Spanish missionary town along the Rio Valle de Allende, where some of the region's first acequias were established—and are still used and cared for today.

"I grew up there, diverting water with my uncle and my grandma, to the pecan tree orchards and green chiles and potatoes," Prunes says. "I think that's a big part of how I ended up in river conservation."



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Causes

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The human population has successfully harnessed many of the world's natural waterways—building dams, water wells, vast irrigation systems and other structures that have allowed civilizations to grow and thrive. But water systems are increasingly stressed, and some rivers, lakes and aquifers are drying up.

Climate Change

As humans continue to pump more carbon dioxide and other greenhouse gases into the atmosphere, patterns of weather and water will change around the world. Droughts will become more common in some places, floods in others. Glaciers and snow packs will disappear in some areas, affecting the freshwater supplies to those downstream communities. These changes will combine to make less water available for agriculture, energy generation, cities and ecosystems around the world.

Pollution

Water pollution comes from many sources including pesticides and fertilizers that wash away from farms, untreated human wastewater, and industrial waste. Even groundwater is not safe from pollution, as many pollutants can leach into underground aquifers. Some effects are immediate, as when harmful bacteria from human waste contaminate water and make it unfit to drink or swim in. In other instances—such as toxic substances from industrial processes—it may take years to build up in the environment and food chain before their effects are fully recognized.

Agriculture

Agriculture uses 70% of the world's accessible freshwater, but some 60% of this is wasted due to leaky irrigation systems, inefficient application methods as well as the cultivation of crops that are too thirsty for the environment in which they are grown. This wasteful use of water is drying out rivers, lakes and underground aquifers. Many countries that produce large amounts of food—including India, China, Australia, Spain and the United States—have reached or are close to reaching their water resource limits. Added to these thirsty crops are the fact that agriculture also generates considerable freshwater pollution – both through fertilizers as well as pesticides – all of which affect both humans and other species.

Population Growth

In the last 50 years, the human population has more than doubled. This rapid growth— with its accompanying economic development and industrialization—has transformed water ecosystems around the world and resulted in a massive loss of biodiversity. Today, 41% of the world's population lives in river basins that are under water stress. Concern about water availability grows as freshwater use continues at unsustainable levels. Furthermore, these new faces also need food, shelter, and clothing, thus resulting in additional pressure on freshwater through the production of commodities and energy.

Impacts

Billions of People Lack Water

Clean freshwater is an essential ingredient for a healthy human life, but 1.1 billion people lack access to water and 2.7 billion experience water scarcity at least one month a year. By 2025, two-thirds of the world's population may be facing water shortages. When waters run dry, people can't get enough to drink, wash, or feed crops, and economic decline may occur. In addition, inadequate sanitation—a problem for 2.4 billion people—can lead to deadly diarrheal diseases, including cholera and typhoid fever, and other water-borne illnesses.

Disappearing Wetlands

About half of the world's wetlands have been destroyed since 1900. Some of the most productive habitats on the planet, wetlands support high concentrations of animals—including mammals, birds, fish and invertebrates—and serve as nurseries for many of these species. Wetlands also support the cultivation of rice, a staple in the diet of half the world's population. And they provide a range of ecosystem services that benefit humanity, including water filtration, storm protection, flood control and recreation.

Damaged Ecosystems

When water becomes scarce, natural landscapes often lose out. The Aral Sea in central Asia was once the world's fourth largest freshwater lake. But in only three decades, the sea has lost an area the size of Lake Michigan. It is now as salty as an ocean due to the excessive pollution and the diversion of water for irrigation and power generation. As

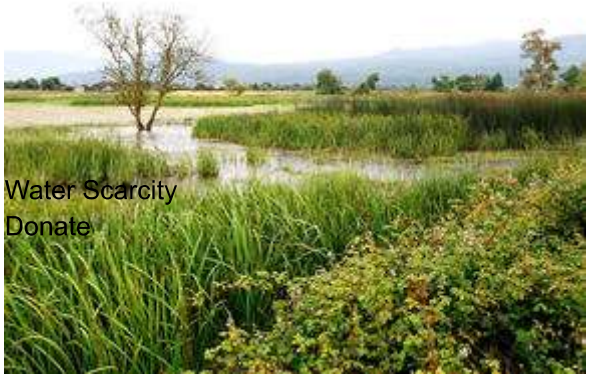
the sea has retracted, it has left polluted land. This ecological catastrophe has created food shortages and resulted in a rise in infant mortality and a decrease in life expectancy for the nearby population.

Impacted Species & Places

What WWF Is Doing

Managing Water Scarcity

When water supplies are limited and poorly managed, both ecosystems and people suffer. Efficient and effective water management is necessary. WWF works with partners to advance the science of water conservation. We also work with governments, businesses and local communities to ensure that there are sufficient in-stream flows for people and other freshwater species, and promote methods for sustainable water use.



Tonga Lake in Algeria is designated a Wetland of International Importance under the Ramsar Convention.

Promoting Water Stewardship

To benefit both people and nature, WWF advocates for and supports organizations to become responsible water stewards. At the global level, we work on projects to establish an international water stewardship standard through the Alliance for Water Stewardship. We also support the use of water footprinting tools with the Water Footprint Network and promote other international initiatives with the United Nations' CEO Water Mandate and the World Economic Forum. At the local level, WWF conducts projects that measure water use and river basin impacts and demonstrate solutions for reducing these impacts. WWF partners with businesses and industries to identify water risks and take advantage of opportunities to enhance water stewardship.

Protecting Wetlands

The international treaty known as the Ramsar Convention was established to protect wetlands around the world. Forty years later, there are more than 2,000 wetlands designated as Wetlands of International Importance. This means that the country where the wetland is located has committed itself to protecting the site from development, pollution, and drainage. About 75% of the sites added to the list since 1999 were included as a result of work by WWF.

Adapting to Climate Change

WWF works to address institutional challenges to managing water resources and protecting habitats before the worst impacts of climate change occur. This work includes promoting climate change adaptation in international conventions and supporting the preservation and restoration of wetlands. We help conduct assessments of river basins' vulnerabilities to climate change and integrate climate change considerations into river basin management.