GrowingBlue

Water. Economics. Life.

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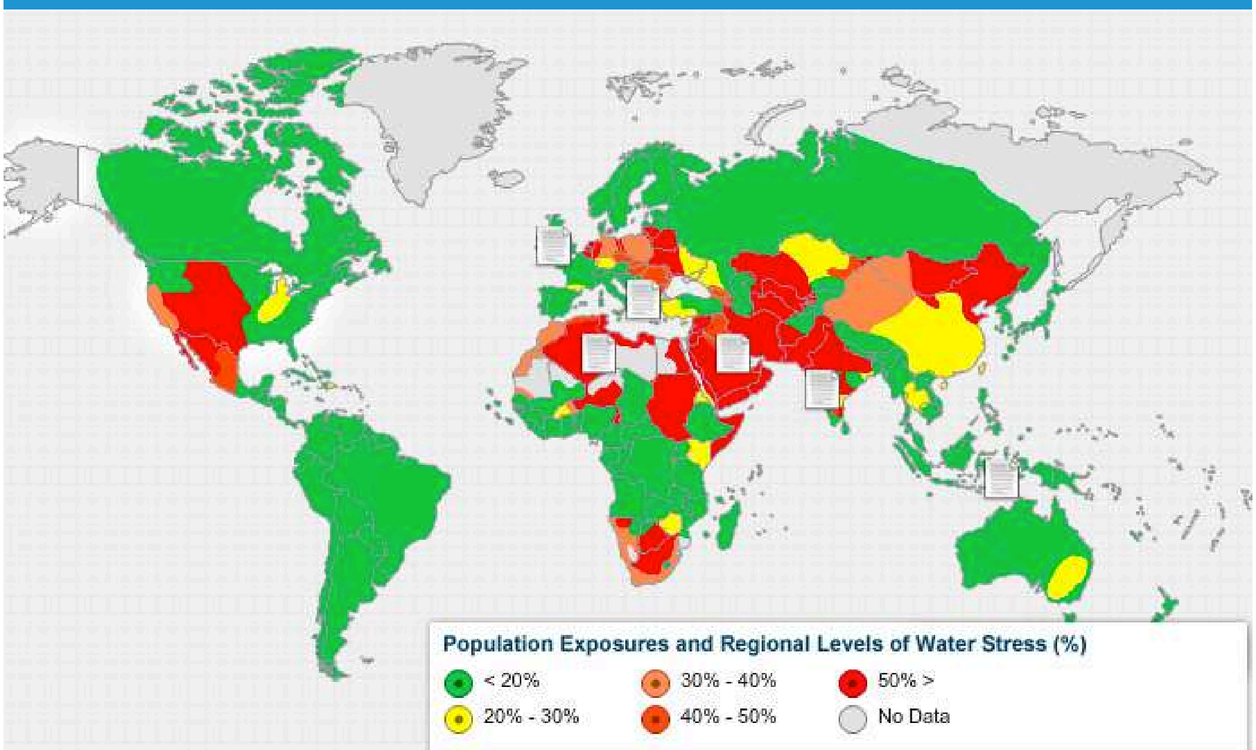
Introduction

Growing Blue: Water. Economics. Life.

There's a tremendous amount of water on the earth, but for it to continue to be a reliable supply for future growth, it must be available to local populations in sufficient quantity and quality, and without compromising local ecosystems. Unfortunately, this is not the case in most of the world, as water is unevenly distributed among the world's population. Today more than one billion people lack access to safe, clean drinking water, and just 10 countries share 60 percent of the world's natural, renewable water resources.

A sustainable supply of water requires water to be available in sufficient quantity and quality while not compromising an ecosystem. Yet water is distributed unevenly across the globe, even as populations are increasing.

Population Exposures and Regional Levels of Water Stress (%)



Keeping existing water supplies healthy and sustainable is therefore critically important. The red areas on the map above indicate areas that are already water stressed. Other colors show areas that are on the brink.

While the quantity of water on the earth is the same today as it has always been, less than one percent of this water is available for human use. The rest is frozen in polar ice caps or present in the ocean's salty waters. The earth's small portion of usable water is found in groundwater sources and in surface water, such as rivers, lakes and streams.

Using and returning water to these sources is critical to maintaining them for future generations.

Global Issues

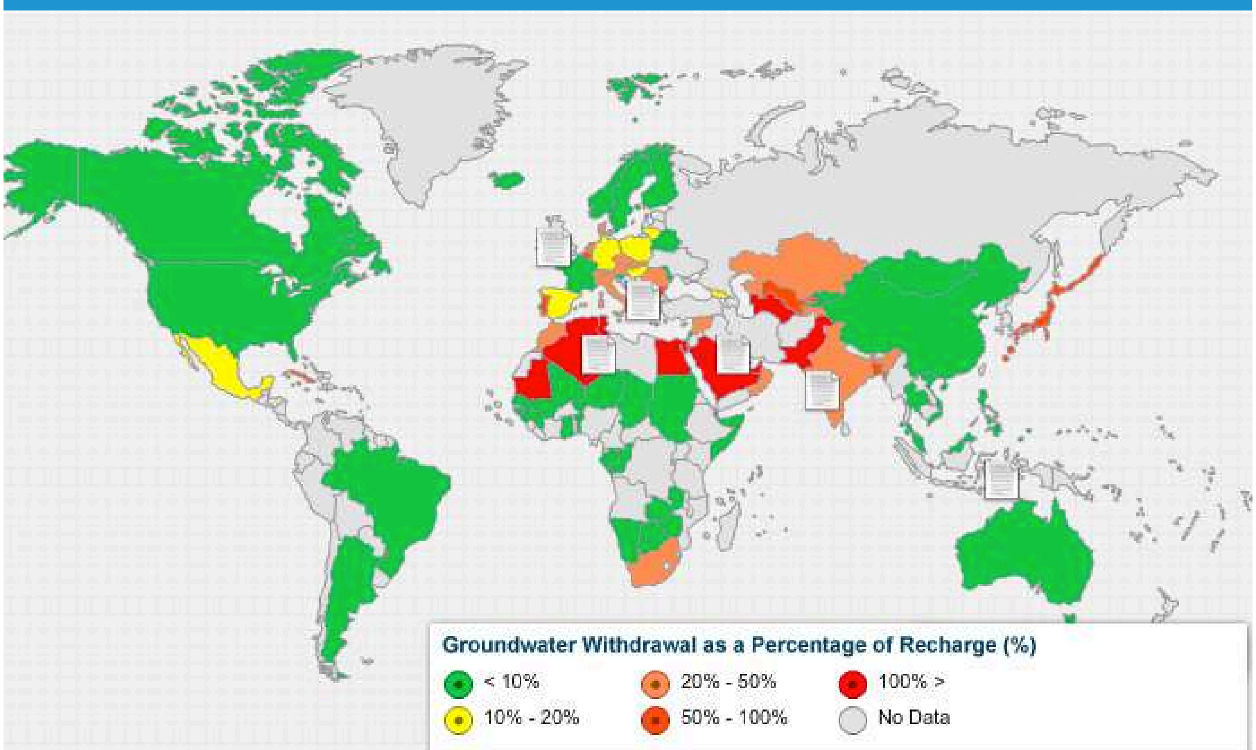
The Importance Of Global Water Sustainability

There is a limit to the amount of water we can sustainably use – and today many water withdrawals are not sustainable. As this map shows, too often there is an imbalance between the water we withdraw from the ground and the water we return to the earth. Our water resource challenges can only be met if we adopt both short and long-term water resource management plans combined with appropriate governance.

Doing so is a shared responsibility, and it begins with better managing water withdrawals. Today, roughly 15 to 35 percent of irrigation withdrawals are estimated to be unsustainable – and this is true globally. In Europe alone, 60 percent of cities with more than 100,000 people are using groundwater sources faster than they can be replenished.

Current practices will not be able to meet growing population and rising energy demand, and as a result, fossil aquifers will no longer be a long-term, viable option. We simply won't be able to recharge them quickly enough.

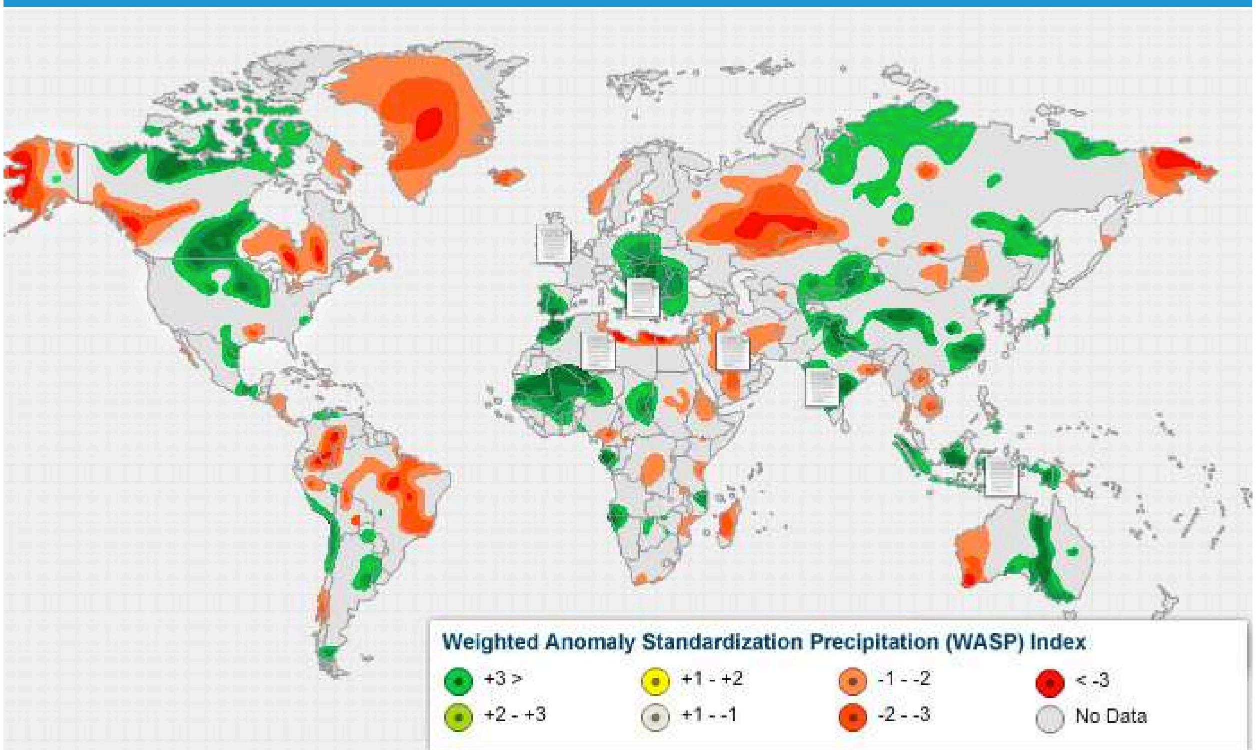
Groundwater Withdrawal as a Percentage of Recharge (%)



The Effect of Global Water Variability

Communities that cannot guarantee a reliable supply of water create a business risk to companies looking to build and invest in locations with reliable water supplies. Abnormal rain events, the lack of proper storage infrastructure and climate change all contribute to fluctuations in the local water supply, which can create uncertainty if not properly managed.

Weighted Anomaly Standardized Precipitation (WASP) Index



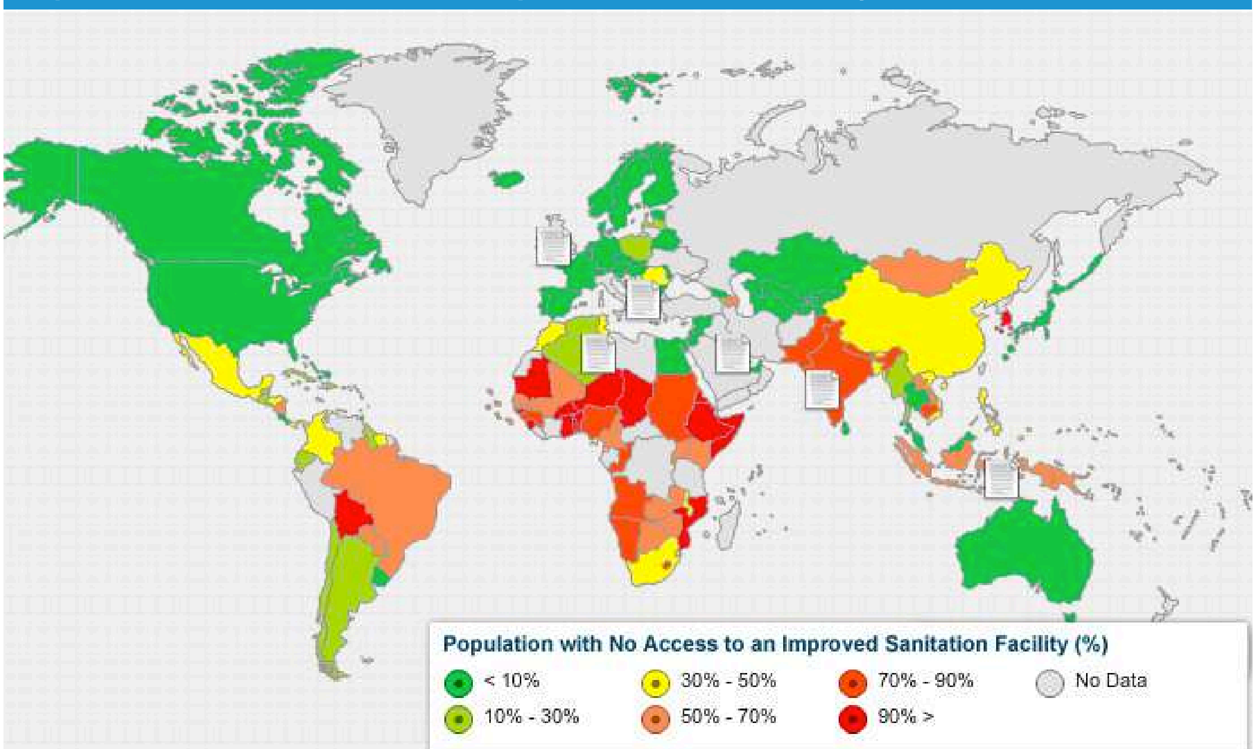
The map above shows the prevalence of abnormal rain events around the world. These types of events contribute to the natural variability of water, both year-to-year and within a single year. For example, the average amount of water available per person in some areas of the Middle East varies from less than 1,700 cubic feet per year, to over 3.5 million in humid, sparsely populated portions of the region. Climate change will only exacerbate these dramatic swings. In fact, current temperature, weather, sea level and water variability projections suggest that the next 30 to 50 years will bring substantial population displacements as a result.

The Importance of Global Water Quality

Polluted water impedes growth in a number of ways. First, it impacts public health, constricting human development and ultimately, GDP. Second, polluted water impacts the agricultural sector we rely on to feed the population. Third, it limits the available water necessary to support business and industry. Lastly, the water cycle rejects polluted water, which is directly linked to the water resources that are available for use at the end of each cycle.

Water resources are defined in terms of quantity and quality. We can’t do very much to impact quantity, but water quality is very much in our control – and it impacts quantity as well. Consider this: The causes of freshwater pollution are varied. They include industrial waste, sewage, and run-off from farms, cities and factory effluents, all of which are manmade impacts. Treating a high quantity, but impaired, water resource is not practical if doing so is expensive or energy-intensive.

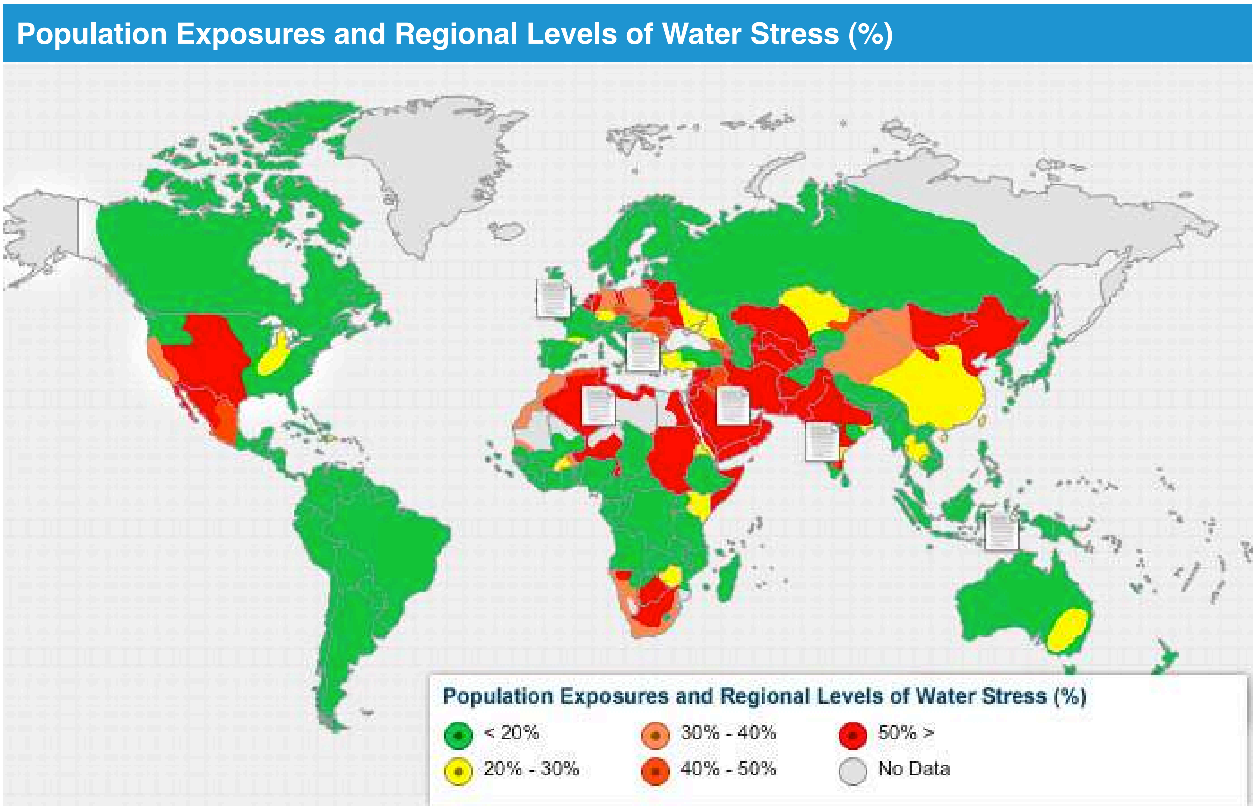
Population With No Access to an Improved Sanitation Facility (%)



In many areas, combined sewer systems collect sanitary sewage and storm water runoff in a single pipe system. This can cause serious water pollution problems when large variations in flow between dry and wet weather cause the system to overflow. In the instance of an overflow, the system’s wastewater and storm water are discharged directly into a nearby river, stream, lake or ocean, thereby polluting it. For good reason, this type of sewer design is no longer used in building new communities, but many older cities still continue to use them.

In other areas, water pollution impacts more than just the ecosystem, as the map above shows. In fact, around the world, more people die from unsafe water than from all forms of violence, including war. Inadequate water, sanitation and hygiene are estimated to cause approximately 3.1 percent of all deaths each year. While we are making progress as a global community to reverse these trends, much more remains to be done.

Global Water Use Is Increasing In Demand



Our economic and societal growth is largely driven by the productive use of water. In fact, our growing world tripled its water use in the last 50 years alone. If we're going to meet the agricultural, industrial and municipal needs of this growing world, we must use our water in effective, efficient ways. Our world population is climbing, yet we still share one water resource – and it's limited. The map above shows the sectors, people and economies that are reliant on water – and to what extent.

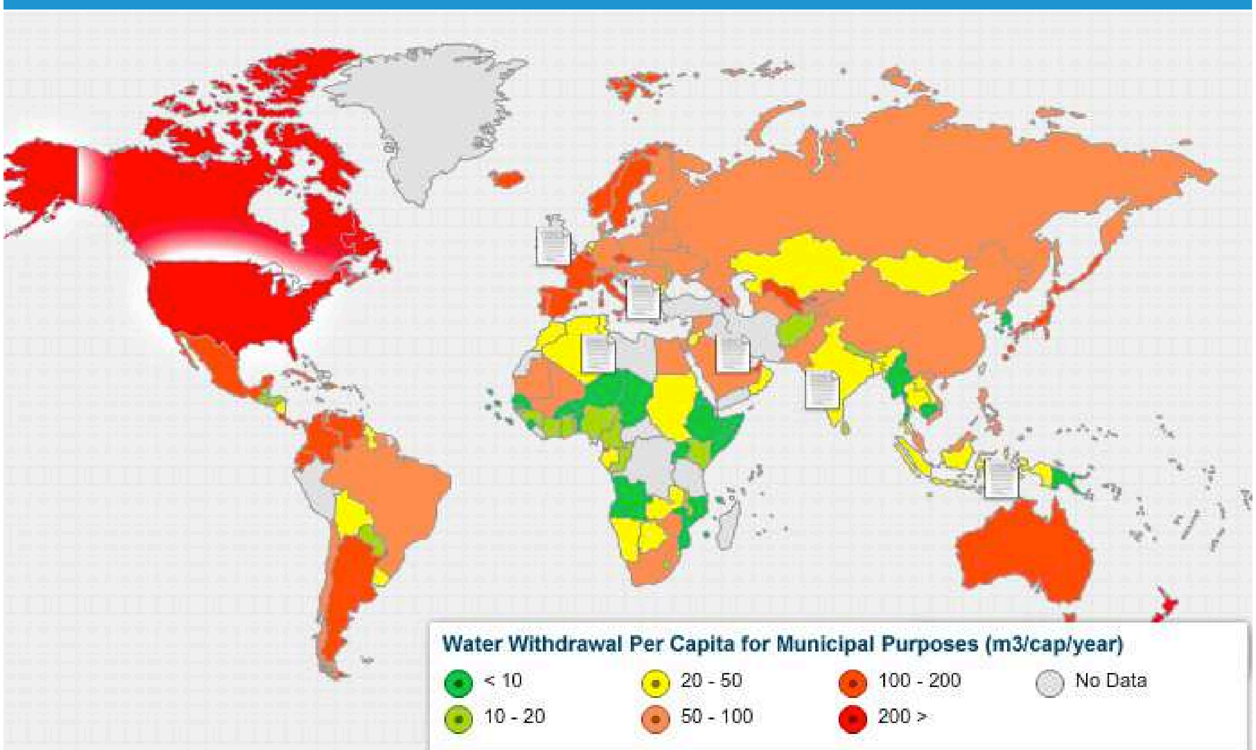
Further, developing countries are becoming wealthier, with a growing consumer class and a growing appetite for water and energy. The only way to ensure this growth continues and is available for future generations is to be smarter about managing our water resources.

Global Municipalities Put Pressure On Water Resources

Cities and people both need water and sanitation to grow and thrive. As the number of people living in cities and towns grows, leaders must confront increasingly difficult supply and treatment challenges. Cities put more stress on water resources because they create more challenging conditions for water infrastructure. More people depend on city systems, creating greater peaks and valleys in demand. Further, cities have more concentrated pollution levels than less populated areas, and the wastewater concentrations can require significant investment.

For the first time in history, the majority of the world's population lives in cities and this number is expected to grow. Meeting the increased strains to water and wastewater infrastructure will be critical to maintaining a healthy future for the world's rapidly growing population.

Water Withdrawal Per Capita for Municipal Purposes (m3/cap/year)



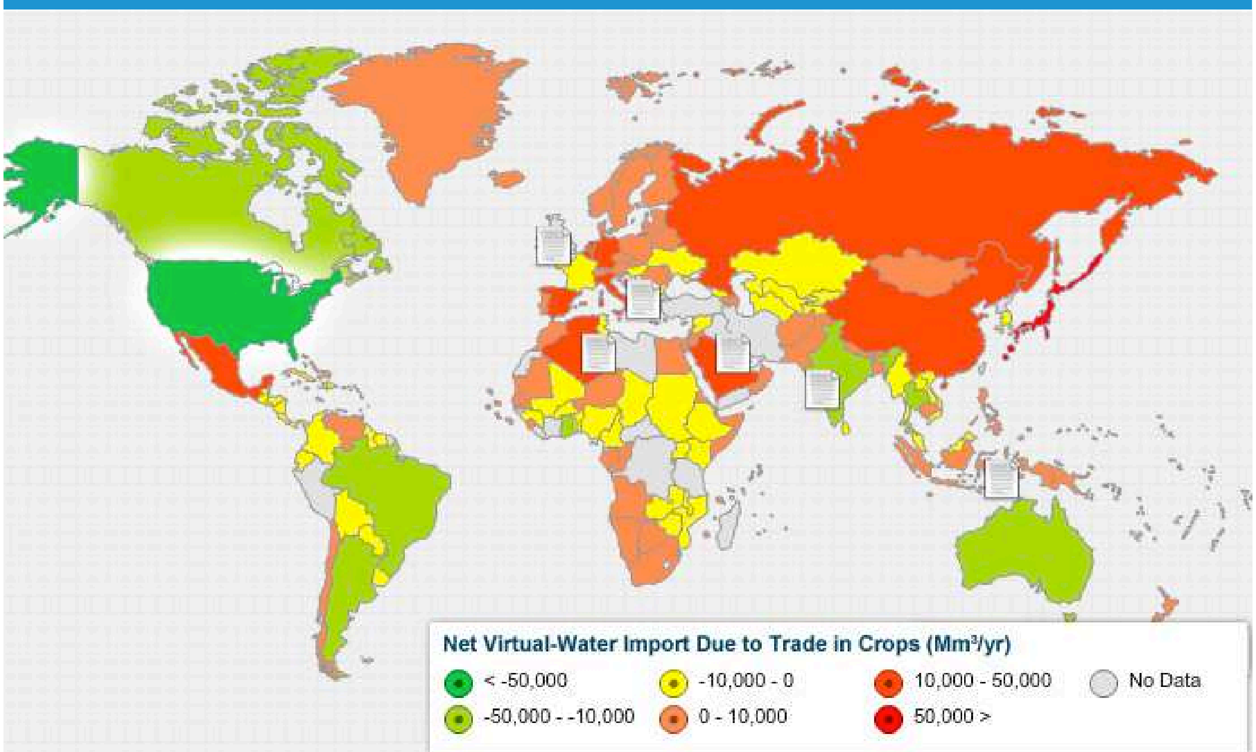
The map above shows total municipal water withdrawals per capita. Municipal water withdrawals can indicate many things, including the level of sustainable water planning, the amount of industry and agriculture in a given area, a country's growth trajectory, and its total population. For example, in 60 percent of European cities with greater than 100,000 people, groundwater is being used faster than it can be replenished. The remaining water is more costly to capture and to treat.

Our cities must reflect the world's changing realities, and our infrastructure must reflect the new needs emerging in the 21st century and beyond.

The Global Agricultural Demand On Water

When countries trade crops, they also trade the water used to grow them. This is an economic concept known as "embedded water," and it greatly affects the way water-poor countries receive water. As with all trade negotiations, some countries are net-importers and some are net-exporters, with trade balances between them. Countries with limited water resources may tend to import agricultural products requiring large amounts of water, as the map above depicts.

Net Virtual-Water Import Due to Trade in Crops (Mm^3/yr)



Today, agriculture withdrawals represent 70 percent of all water withdrawals worldwide. In many developing countries, irrigation accounts for over 90 percent of all water withdrawals. Yet in high-income countries, industry takes the greatest share of water withdrawals, with 59 percent.

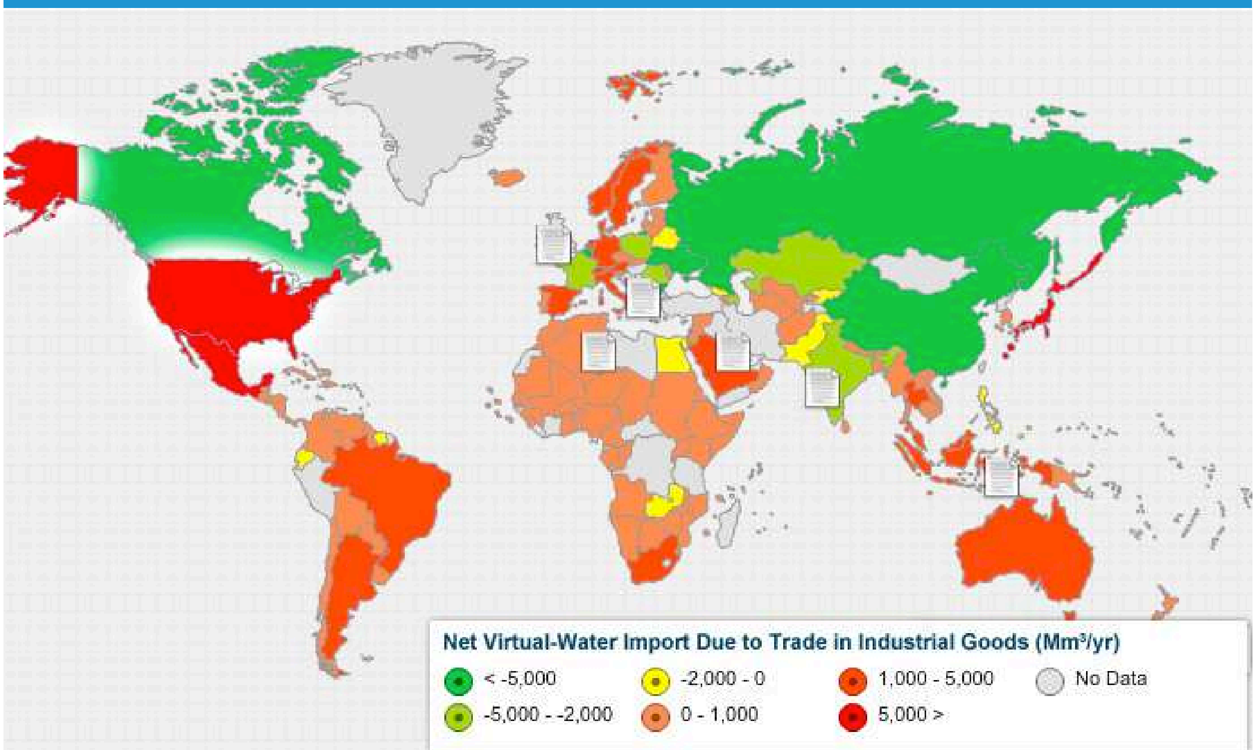
Growing water withdrawals related to agriculture are not just a reflection of a growing population. They're reflective of a growing consumer class, as wealthy consumers traditionally consume a more meat-intensive diet – and meat is more water-intensive to produce than crops.

In fact, meat production requires eight to ten times more water than cereals. It takes more than 250 gallons of evapotranspiration per day to produce one pound of wheat, but up to 2,600 gallons per day to produce a pound of meat. As a result, countries like China, where diets are changing, will experience higher water stress levels in the future. Many countries are faced with water trade-offs when it comes to economic growth and feeding a ballooning population.

The Global Industrial Demands On Water

Industrial water use varies by country and by region. When water is available and accessible, industries thrive and economies grow. When it's not, they don't. Some industries (energy, oil and gas, chemical, pulp and paper) are more water-intensive than others, but all industries require water – even those centered on the Internet.

Net Virtual-Water Import Due to Trade in Industrial Goods (Mm³/yr)



The map above shows the percentage of water used for industrial purposes, on a country-by-country basis. Industry uses the most water in developed countries and is second in developing ones. Country by country industrial water use increases with income. In low-income countries, use hovers at around 10 percent. In high-income countries, it's as high as 59 percent.

One number traditionally used to represent water use is the "water footprint." The water footprint indicates the total water used to make a product. Globally, the average water footprint for one dollar of consumer products is 21 gallons.

This number represents water used as energy, as a cooling agent, as process water, as water embedded in the product or as a medium for waste disposal. Of all these, wastewater discharge and pollution actually pose the greatest threat to water resources, greater than the water used in production.

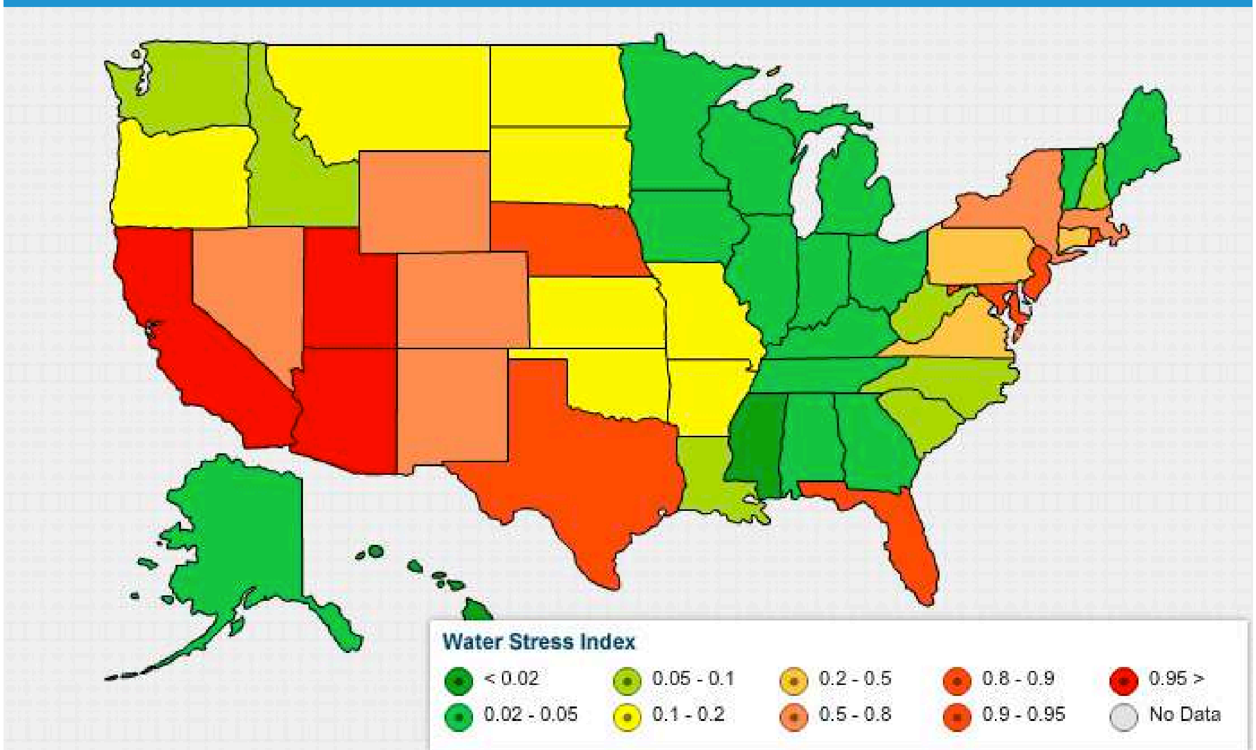
As people become wealthier they traditionally use more energy and consume more products – creating even greater impact on the world's water resources. Planning for the world's growth and economic expansion requires that we think about sustainable water planning now.

U.S. Issues

Water Usage In The U.S.

The United States is not immune to the water challenges facing the rest of the world, and the U.S. deals with the same issues of scarcity, quality, variability and access. This is especially true in the southwestern states, increasing dramatically in California, Utah and Arizona.

Water Stress Index



We need water to grow. But water can't be used if it isn't available, and water is distributed unevenly across the globe. In the U.S., regional differences are extreme, and in many areas, access to water is a challenge – an expensive challenge. The western portion of the country is very dry, which means the agricultural industry there has different needs than the rest of the country. By way of contrast, areas such as the Pacific Northwest are perennially rainy.

Further, in the United States the number of people moving to the South and Southwest is growing. As the population moves to cities and to drier climates, the country's challenges will continue, further straining the country's already strained infrastructure. Population increases, greater demand for agricultural irrigation and climate change will further impact water availability.

Economic and social growth is largely driven by the productive use of water. To be sustainable, water withdrawals must be met with better water management and increased replenishment efforts. This is one of the most important ways economic growth can be preserved and promoted.

The map above illustrates the total water withdrawals per day in the United States. These important facts are worth considering:

- Between 1950 and 1975, total water withdrawals more than doubled and have continued at increased levels ever since.

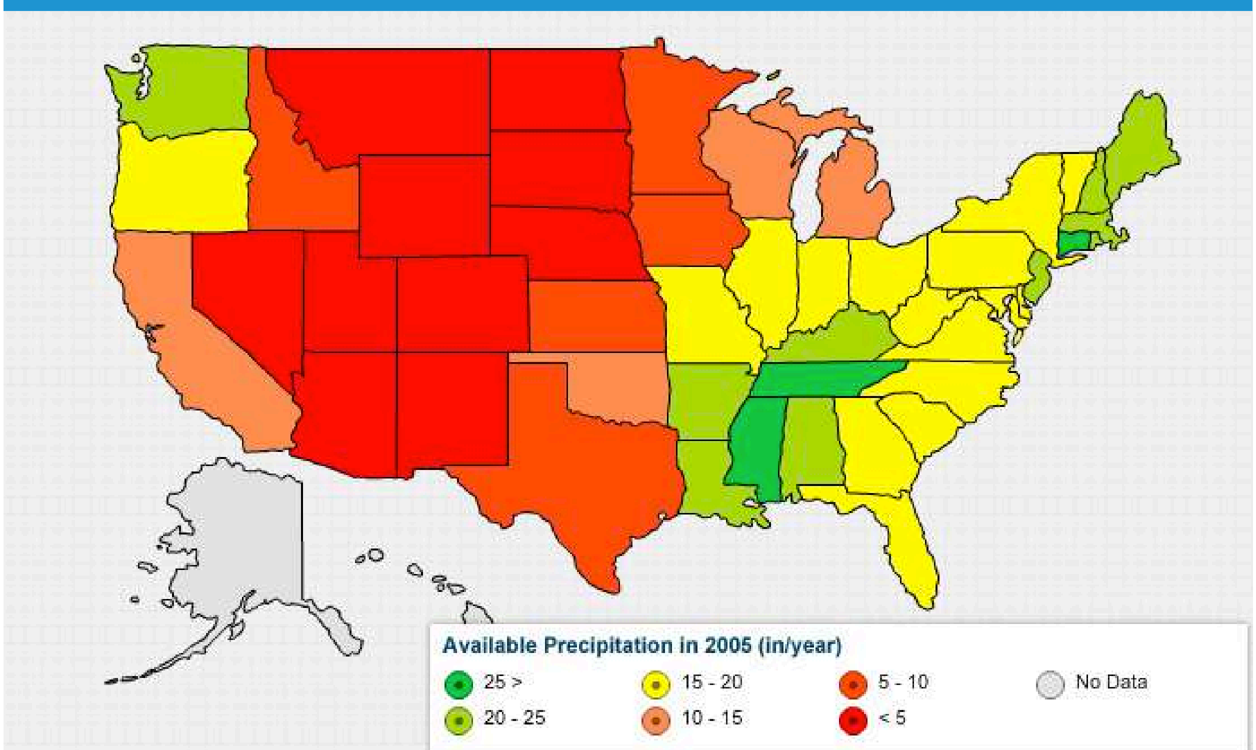
- From 1950 to 1975, the U.S. population increased by 40 percent. But by 2005, the population was 100% larger than in 1950.
- Between 2000 and 2005 alone, total withdrawals were at their largest since the 1975 to 1980 time period – during which water use was believed to have peaked.
- More than one-fourth of the total water used in the United States in 2005 was withdrawn in California, Texas, Idaho and Florida.
- California alone accounted for 11 percent of all withdrawals that year.
- A full three-fourths of California's withdrawals were for irrigation purposes.

Water Sustainability In The U.S.

Many of the available water resources of the United States are under stress, as the chart above indicates. Today, many of the United States' fresh water aquifers are either stressed or negatively impacted by over pumping. Still others are impacted by intrusion from salt water. As an example, in Houston, extensive pumpage of ground water to support economic and population growth has caused water-level declines of approximately 400 feet and resulted in subsidence.

The country's growth depends on using its water resources in sustainable ways – ways that preserve a supply necessary for sustaining quality of life, economic investment and ecosystem health. Of course, conservation is a critical component of sustainable water management, and a responsibility of both industries and municipalities. Both play a role in minimizing the per-capita water impact.

Available Precipitation in 2005 (in/year)



On the whole, sustainable water management involves meeting the needs of today's population while taking into account the needs of future generations. It's about more than measurement and observation; it's about providing guidance for the individuals and institutions that rely on water, those that resolve conflicts around water or those that make decisions about its use. Sustainable water management involves optimizing the water cycle and understanding that our environment, our infrastructure, our water resources and our use of water are all connected.

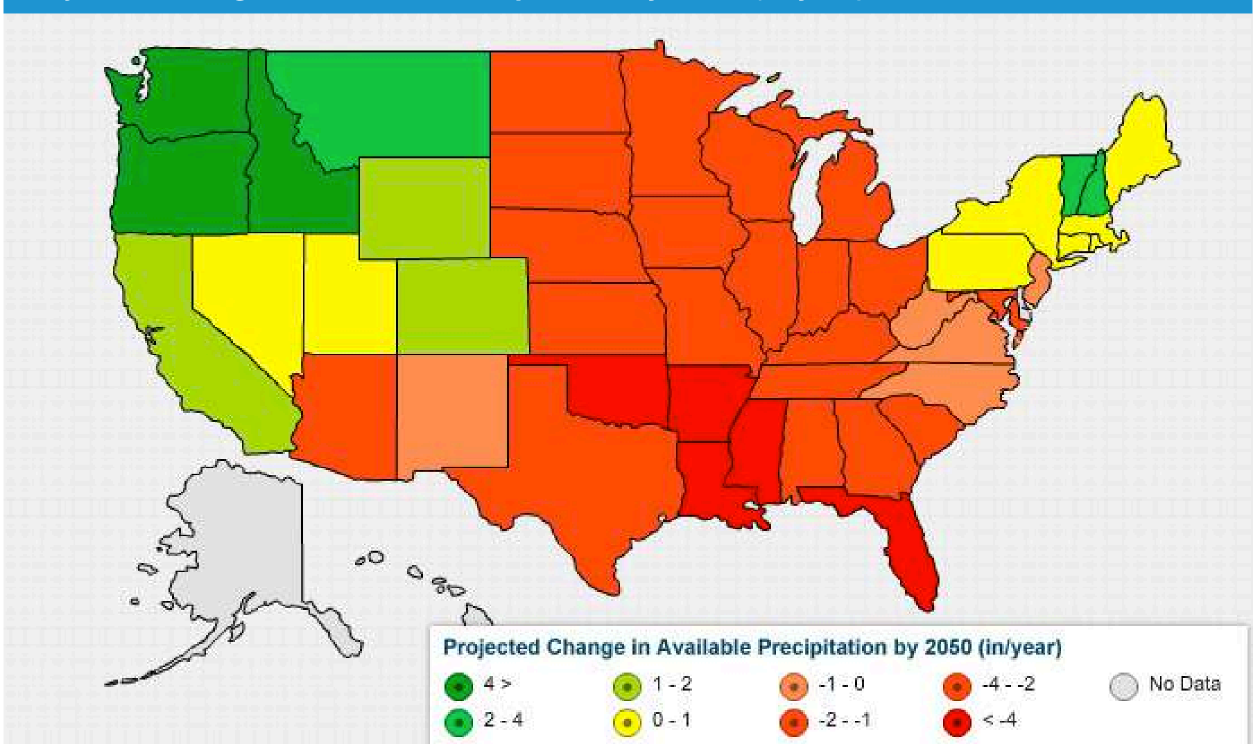
Today, humans influence the water cycle tremendously – be it quantitatively, by using a larger-than-sustainable share of the water available to us; or qualitatively, by allowing pollution to change the quality of available water. Each year, we withdraw eight percent of the total renewable freshwater, and we appropriate 26 percent of the evapotranspiration and 54 percent of the accessible runoff. And, around the world, these numbers are increasing.

The more we use water, the more we influence its quality. When we use water for agriculture, pesticides and the nutrients from fertilizers are carried directly into aquatic ecosystems. When we use water to support sanitation systems, waste and chemical substances enter ecosystems. The same is true when we use water for industrial purposes and pollutants make their way into the cycle. Every day, some two million tons of waste are disposed of in our waters.

On a local level, water cycles are also influenced by the way we plan our cities. When we pave large swaths of land, we shrink the surface area in which water can soak into the soil. Instead, the water runs off of these hard surfaces into pipes that carry it into streams or watersheds, sweeping chemicals and road pollutants with them as they go. The result is that streams carry less water naturally and dry up when it's not raining or flood when it does.

Water Variability In The U.S.

Projected Change in Available Precipitation by 2050 (in/year)



When the supply of water is not reliable, it creates uncertainty, and thus creates business risk for companies looking to locate in these regions. Unfortunately, if we continue down our current path, the problems of an unreliable water supply are expected to worsen, not to get better.

Variability is caused by a variety of factors. One of them is climate change, which is greatly exacerbating water variability. In recent years, a much greater than normal portion of total annual precipitation has come from extreme single-day precipitation events. This means that instead of rainfall being spread out across a long period, it's happening all at once.

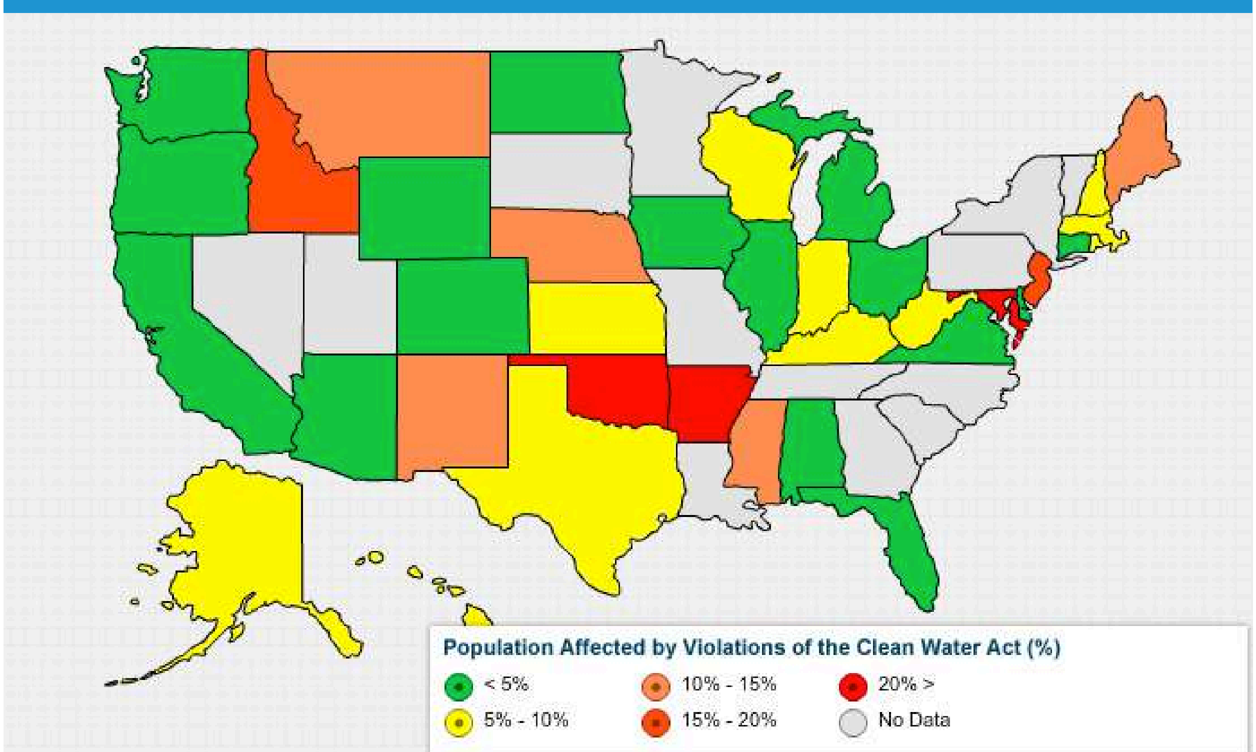
These are not useful events, as the extreme inundation becomes runoff rather than groundwater. An examination of extreme rain events from 1910 to 2008 by the National Oceanic and Atmospheric Administration reveals a 50 percent increase in the percentage of U.S. land area affected by these dramatic events.

This trend is especially apparent when looking at areas along the Gulf of Mexico, where projected precipitation changes show potential decreases of more than an inch per year, while in the Northeast, projections are calling for increases of two to four inches per year.

Climate change will continue to affect variability as extreme rain events, intensifying droughts and increasing evaporation continue.

Water Quality In The U.S.

Population Affected by Violations of the Clean Water Act (%)



Despite living in the world's leading economy, a surprising percentage of the American population is affected by water quality issues, as can be seen in the map above, which shows the number of Americans impacted by drinking water quality violations or EPA consent orders.

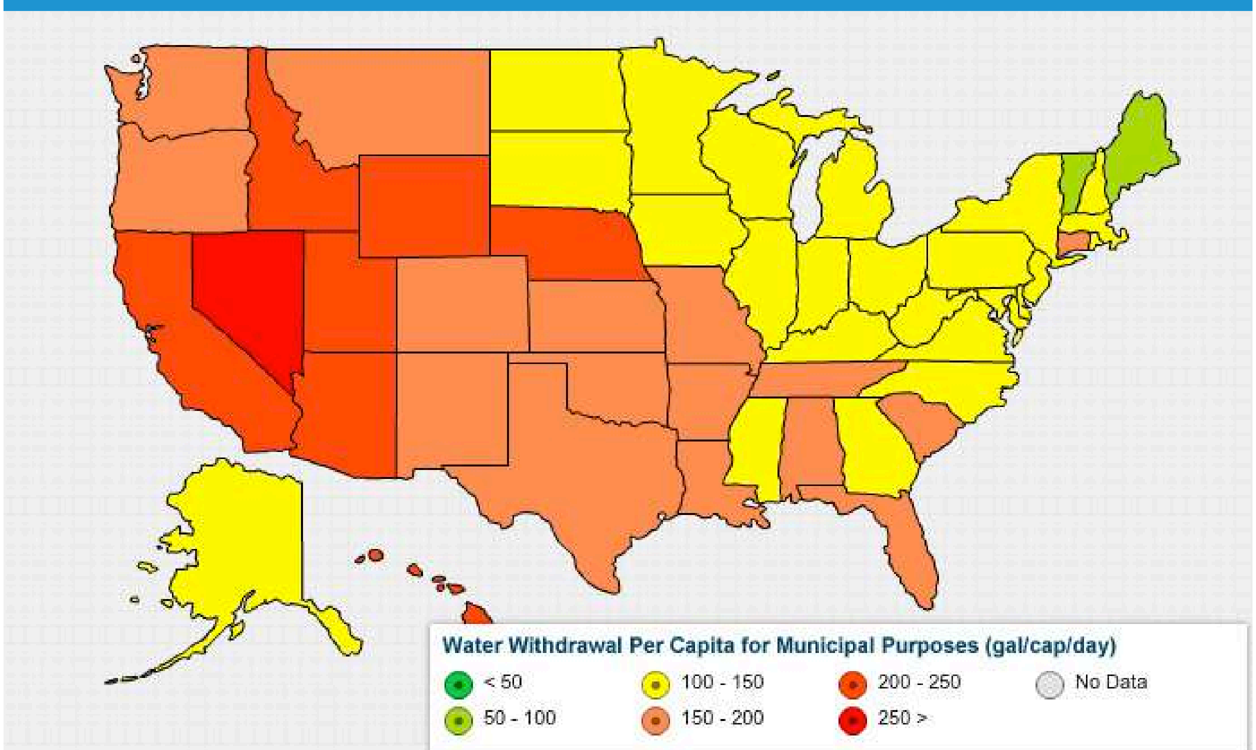
Just as impactful, in a recent multi-part series on the national water quality challenges titled “Toxic Waters,” The New York Times reported that more than 20 percent of the nation’s water systems violated key aspects of the Safe Drinking Water Act over the last five years. In the same time frame, American cities violated the Clean Water Act more than half a million times.

The Times’ series also examined the high costs associated with improving our sewer and water systems; the daunting task before regulators in keeping chemicals and contaminants from our drinking water; the limitations of current water policies; and the many ways Americans are impacted by the combined deficiencies in water policy, investment and infrastructure.

Additionally, according to the American Society of Civil Engineers’ annual scorecard of U.S. infrastructure, the quality of U.S. drinking water infrastructure ranks as a “D-minus” and wastewater infrastructure ranks as a “D.” Even in the U.S., there is much to be done to plan for a sustainable future for coming generations.

Municipal Demands on the U.S. Water Supply

Water Withdrawal Per Capita for Municipal Purposes (gal/cap/day)



Water withdrawals are on the rise across the country. The greatest withdrawals are in arid regions, as the map above shows. This growing demand for water is straining an already stressed infrastructure and limited water resources. As the population grows and more people move to cities, this problem is expected to grow.

As one might imagine, the more arid the region, the more water is used by individuals throughout their everyday lives. As a result, domestic water deliveries vary wildly from state to state, ranging from 51 gallons per person per day in Maine to nearly 190 gallons per day in Nevada. In 2005, two-thirds of all the water withdrawn to meet this demand came from surface sources, such as lakes and streams. The other third came from groundwater supplies.

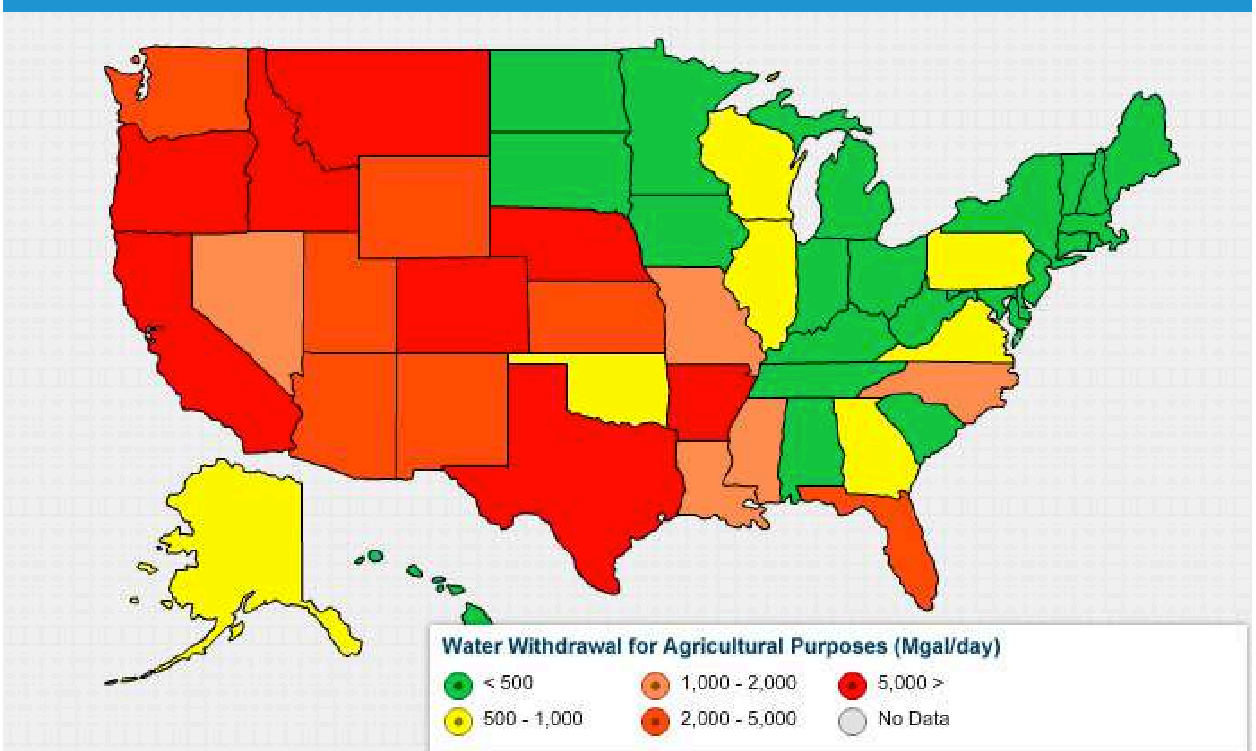
As we put more pressure on our water resources and infrastructure, we will continue to confront supply and treatment issues simultaneously. Addressing these issues swiftly and successfully is critically important to future growth.

Agricultural Demands on the U.S. Water Supply

Agriculture is heavily dependent on water, as the map above shows. Of all sectors in the U.S., only thermoelectric power generation withdraws more water than agriculture. And although the agriculture sector supports both jobs and communities, doing so requires a reliable water supply. The absence of a reliable water supply is incredibly costly. For example, in Washington alone the 2001 drought was estimated to have cost between $270 and $400 million in production damages with a loss of between 4,600 to 7,500 U.S. jobs.

Between 1950 and 1980, as the U.S. agriculture sector grew, the quantity of groundwater used for irrigation nearly doubled, due to rapid irrigation in areas of the central United States. During this time, groundwater accounted for 40 percent of all irrigation withdrawals.

Water Withdrawal for Agricultural Purposes (Mgal/day)



But groundwater is far less sustainable than surface water because there is less of it and its rate of recharge is slower. And, by every standard, that rate is incredibly difficult to measure. Ideally, the volume extracted from an aquifer should be less than or equal to the amount of water that is returned to it. As climatic conditions (especially precipitation) vary, so too does the rate of groundwater recharge.

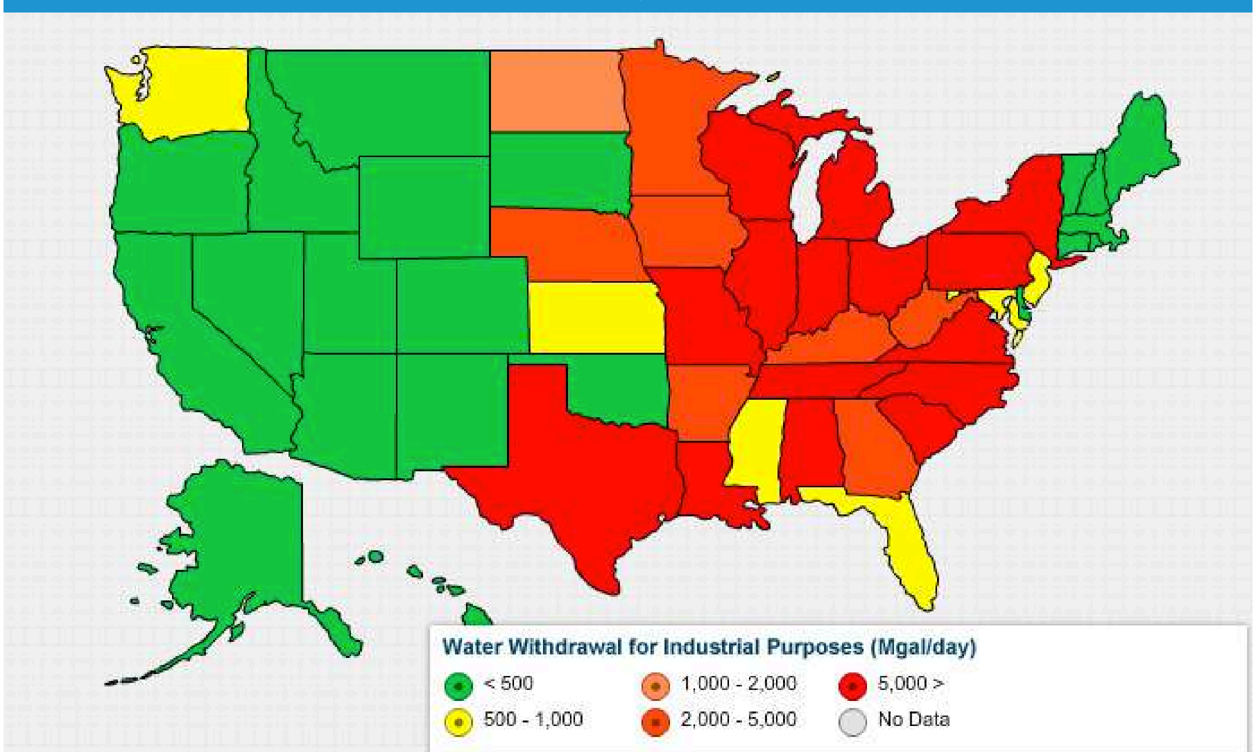
As the American population has grown, the sector's water use has grown. And the country's agricultural exports contain what economists call “embedded water” – meaning we are actually exporting our water. As new markets open and as the sector continues to grow, so will the need for water.

For the U.S. to ensure healthy communities and a healthy economy, it must approach the future with improved water management techniques.

Industrial Demands on the U.S. Water Supply

Water is required in the production of everyday items, everything from computer chips to consumer goods. For example, a pair of jeans requires nearly 3,000 gallons of water to produce; a gallon of paint requires 13 gallons of water and a t-shirt requires 594 gallons. The map above tracks water withdrawals based on industry. The largest industrial water users are the food, paper, chemicals, refined petroleum, and metals industries.

Water Withdrawal for Industrial Purposes (Mgal/day)



Even though the primary uses of water and the largest users of water are consistent in industries worldwide, there are still vast disparities between the water footprints of average industrial products from country to country. In the United States, the footprint is more than 26 gallons per dollar. In places like Japan, Australia and Canada, the footprint is only two to four gallons per dollar.

The reason for this is two-fold. First, there are varying, typical patterns around water use from country to country, most of which depend on whether that country experiences water stress and to what extent. This, of course, depends on the climate and agricultural patterns within each region.

It also depends on consumption patterns among populations – especially when it comes to diets, since meat-intensive ones require more water to sustain. This is a second major factor impacting the available water in a given area. Particularly, in countries where the population consumes a meat-intensive diet, water footprints tend to be higher.

As an example, the average American consumes 264 pounds of meat per year, more than three times the world average. In addition to meat-intensive diets, a high consumption of industrial goods significantly contributes to the total water footprints of rich countries.

The Importance Of Growing Blue

We need water to grow. Water plays a direct role in drinking water and agriculture but is also a direct element in manufacturing, energy production and sustaining ecosystems. Without it, growth would literally stop. And unlike other resources such as oil or minerals, water has no substitute.

So where does this leave us? Understanding water's availability and use around the world is key to managing our water management challenges in the future. Solutions do exist.

Water is essential to growth, but to use it, it has to be available. Unfortunately, water is unevenly distributed with 60 percent of the world's renewable natural water resources located in just 10 countries.

Farms, businesses, industries and communities all need water. This demand will only continue to grow.

Appendices

Appendix A: Global Data

	Population Growth	GDP / Drop	Total Renewable Freshwater Resources Per Capita	Water Dependency	Population NOT Using an Improved Sanitation Facility	Population NOT Using an Improved Drinking Water Source	Water Withdrawal for Municipal Purposes	Water Withdrawal for Industrial Purposes	Water Withdrawal for Agricultural Purposes	Net Virtual-Water Import	Non-Revenue Water	Water Footprint Per Capita
Unit	%	$ / m³	m³ / cap / yr	%	Millions	Millions	Billions m³ / y	Billions m³ / y	Billions m³ / y	Billions m³ / y	%	m³ / cap / yr
Source	UN	UN/FAO Aquastat	FAO Aquastat	FAO Aquastat	WHO/UNICEF JMP	WHO/UNICEF JMP	FAO Aquastat	FAO Aquastat	FAO Aquastat	Water Footprint Network	Global Water Intelligence	Water Footprint Network
Year	2008	2008	2002 or latest	2002 or latest	2008	2008	2000 or latest	2000 or latest	2000 or latest	1997-2001	2008	1997-2001
Afghanistan	3.5	0.5	2,389	15.4	19.6	17.7	0.42	0.00	22.84	0.29	45.0	660
Albania	0.3	7.7	13,266	35.5	0.1	0.1	0.46	0.19	1.06	1.00	38.0	1,228
Algeria	1.5	28.1	417	3.6	4.1	1.7	1.33	0.80	3.94	11.64	40.0	1,216
Andorra*	3.0	n/a	3,116	0.0	0.0	0.0	n/a	n/a	n/a	0.39	n/a	n/a
Angola	2.9	100.0	10,210	0.0	14.3	7.5	0.08	0.06	0.21	0.79	36.0	1,004
Antigua and Barbuda	1.5	243.4	600	0.0	n/a	n/a	0.00	0.00	0.00	n/a	n/a	n/a
Argentina	1.0	11.4	20,410	66.1	9.2	4.0	4.91	2.76	21.52	-44.99	31.0	1,404
Armenia*	0.0	4.2	2,358	11.7	0.6	0.3	0.84	0.13	1.86	0.61	78.2	898
Australia*	1.2	42.5	18,372	0.0	0.0	0.0	3.52	2.40	18.01	-63.99	18.0	1,393
Austria*	0.5	196.0	10,075	29.2	0.0	0.0	0.74	1.35	0.02	6.03	9.5	1,607
Azerbaijan*	0.9	3.8	3,540	76.6	5.2	4.7	0.52	2.36	9.33	-2.15	38.0	977
Bahamas	1.3	n/a	59	0.0	n/a	n/a	n/a	n/a	n/a	0.25	n/a	n/a
Bahrain*	2.2	61.3	n/a	0.0	n/a	n/a	0.18	0.02	0.16	0.60	23.5	1,184
Bangladesh	1.6	2.2	7,567	91.3	77.3	75.7	3.60	0.77	31.50	2.59	48.4	896
Barbados	0.2	40.9	315	0.0	n/a	n/a	0.03	0.04	0.02	0.15	n/a	1,355
Belarus*	-0.5	21.6	7,866	35.9	0.3	0.7	0.65	1.30	0.84	2.49	30.0	1,271
Belgium*	0.5	55.8	1,882	34.4	0.0	0.0	0.99	7.68	0.36	4.89	19.4	1,802
Belize	2.2	9.2	61,717	13.8	n/a	n/a	0.01	0.11	0.03	-0.41	n/a	1,646
Benin	3.3	51.1	2,863	61.0	8.9	8.2	0.04	0.03	0.06	-1.50	22.5	1,761
Bermuda*	n/a	n/a	112	0.0	n/a	n/a	n/a	n/a	n/a	0.13	n/a	n/a

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Unit	%	$ / m³	m³ / cap / yr	%	Millions	Millions	Billions m³ / y	Billions m³ / y	Billions m³ / y	Billions m³ / y	%	m³ / cap / yr
Source	UN	UN/FAO Aquastat	FAO Aquastat	FAO Aquastat	WHO/UNICEF JMP	WHO/UNICEF JMP	FAO Aquastat	FAO Aquastat	FAO Aquastat	Water Footprint Network	Global Water Intelligence	Water Footprint Network
Year	2008	2008	2002 or latest	2002 or latest	2008	2008	2000 or latest	2000 or latest	2000 or latest	1997-2001	2008	1997-2001
Bhutan*	2.5	3.1	106,292	n/a	0.3	0.2	0.02	0.01	0.40	0.09	45.9	1,044
Bolivia	1.9	11.6	64,217	51.2	8.8	7.3	0.18	0.10	1.16	-1.39	28.2	1,206
Bosnia and Herzegovina	0.3	n/a	9,939	5.3	0.3	0.2	n/a	n/a	n/a	n/a	61.7	n/a
Botswana	1.4	60.5	7,496	80.4	1.2	0.8	0.08	0.04	0.08	0.37	36.0	623
Brazil*	1.2	26.9	43,891	34.2	122.1	38.8	12.02	10.65	36.63	-44.77	38.8	1,381
Brunei Darussalam	2.0	158.0	21,668	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Bulgaria*	-0.7	5.8	2,075	1.4	0.0	0.0	0.32	8.21	0.14	-9.77	38.0	1,395
Burkina Faso	3.3	9.9	821	0.0	14.3	13.5	0.10	0.01	0.69	-1.19	21.5	1,529
Burundi	2.8	3.9	446	19.8	4.8	4.8	0.05	0.02	0.22	-0.19	44.8	1,062
Cambodia	1.7	2.7	32,695	74.7	12.0	10.4	0.06	0.02	4.00	0.49	13.2	1,766
Cameroon	2.3	23.5	14,957	4.4	12.3	10.0	0.18	0.08	0.73	-7.10	36.0	1,093
Canada*	1.0	32.7	83,931	1.8	0.3	0.0	8.99	31.57	5.41	-59.89	13.0	2,049
Cape Verde	1.6	77.9	602	0.0	n/a	n/a	0.00	0.00	0.02	0.06	n/a	995
Central African Republic	1.8	80.6	33,278	2.4	3.2	2.9	0.02	0.00	0.00	-0.59	36.0	1,083
Chad	3.3	36.3	3,940	65.1	10.6	10.0	0.04	0.00	0.19	-1.87	36.0	1,979
Chile	1.1	13.5	54,868	4.1	2.9	0.7	1.42	3.16	7.97	3.35	34.5	803
China*	0.7	7.8	2,140	1.0	640.3	600.3	67.53	128.60	358.00	-9.84	36.0	702
China, Hong Kong SAR*	n/a	n/a	154	n/a	n/a	n/a	n/a	n/a	n/a	n/a	27.0	n/a
Colombia	1.5	22.8	47,365	0.9	21.0	12.1	5.39	0.40	4.92	-4.14	45.0	812
Comoros	2.2	53.0	1,816	0.0	n/a	n/a	0.00	0.00	0.00	0.15	n/a	n/a

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Unit	%	$ / m³	m³ / cap / yr	%	Millions	Millions	Billions m³ / y	Billions m³ / y	Billions m³ / y	Billions m³ / y	%	m³ / cap / yr
Source	UN	UN/FAO Aquastat	FAO Aquastat	FAO Aquastat	WHO/UNICEF JMP	WHO/UNICEF JMP	FAO Aquastat	FAO Aquastat	FAO Aquastat	Water Footprint Network	Global Water Intelligence	Water Footprint Network
Year	2008	2008	2002 or latest	2002 or latest	2008	2008	2000 or latest	2000 or latest	2000 or latest	1997-2001	2008	1997-2001
Congo	2.2	230.5	230,142	73.3	2.7	2.7	0.03	0.01	0.00	0.30	36.0	n/a
Costa Rica	1.7	11.1	24,872	0.0	0.2	0.2	0.79	0.46	1.43	-1.90	49.8	1,150
Cote d□voire	2.2	25.2	3,934	5.3	n/a	n/a	0.22	0.11	0.60	n/a	21.0	n/a
Croatia	-0.2	n/a	23,855	64.3	0.1	0.0	n/a	n/a	n/a	2.29	0.4	n/a
Cuba	0.1	7.6	3,402	0.0	2.1	1.0	1.56	1.00	5.64	-5.88	43.0	1,712
Cyprus*	1.2	100.9	379	0.0	0.0	0.0	0.07	0.00	0.18	0.97	38.0	2,208
Czech Republic*	0.1	84.1	1,548	4.6	0.3	0.2	1.05	1.47	0.06	1.86	22.6	1,572
Dem. Rep. of the Congo	2.9	n/a	19,967	29.9	49.7	49.7	n/a	n/a	n/a	-0.32	37.6	734
Denmark*	0.3	268.7	2,994	0.0	0.0	0.0	0.41	0.32	0.54	-1.70	25.0	1,440
Djibouti	1.9	51.6	353	0.0	0.8	0.4	0.02	0.00	0.00	0.33	31.3	n/a
Dominican Republic	1.5	13.4	2,109	0.0	2.6	1.7	1.09	0.06	2.24	-2.92	43.0	980
Ecuador*	1.1	3.1	19,628	0.0	2.2	1.1	2.12	0.90	13.96	-6.04	74.2	1,218
Egypt*	1.9	2.4	688	96.9	6.1	4.6	5.30	4.00	59.00	10.92	34.0	1,097
El Salvador*	0.4	17.3	3,888	29.7	1.2	0.9	0.32	0.20	0.76	-0.88	43.0	870
Equatorial Guinea	2.8	165.6	39,442	0.0	n/a	n/a	0.09	0.02	0.00	n/a	36.0	n/a
Eritrea	3.7	2.5	1,279	55.6	4.8	4.3	0.03	0.00	0.55	0.24	36.0	n/a
Estonia*	-0.3	146.9	9,205	0.8	0.1	0.1	0.09	0.06	0.01	2.96	38.0	n/a
Ethiopia	2.6	4.6	1,363	0.0	78.3	74.9	0.33	0.02	5.20	-1.80	43.4	675
Fiji	0.6	51.4	33,825	0.0	n/a	n/a	0.01	0.01	0.05	-0.53	27.0	1,245
Finland*	0.3	110.1	20,737	2.7	0.0	0.0	0.34	2.07	0.07	1.77	25.0	1,727

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Unit	%	$ / m³	m³ / cap / yr	%	Millions	Millions	Billions m³ / y	Billions m³ / y	Billions m³ / y	Billions m³ / y	%	m³ / cap / yr
Source	UN	UN/FAO Aquastat	FAO Aquastat	FAO Aquastat	WHO/UNICEF JMP	WHO/UNICEF JMP	FAO Aquastat	FAO Aquastat	FAO Aquastat	Water Footprint Network	Global Water Intelligence	Water Footprint Network
Year	2008	2008	2002 or latest	2002 or latest	2008	2008	2000 or latest	2000 or latest	2000 or latest	1997-2001	2008	1997-2001
France*	0.6	71.5	3,003	12.4	0.0	0.0	6.28	29.76	3.92	-6.34	27.0	1,875
French Guiana	n/a	n/a	608,817	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Gabon	2.0	119.3	113,247	0.0	0.9	0.9	0.06	0.01	0.05	0.41	16.3	1,420
Gambia*	3.0	34.5	1,720	62.5	0.6	0.6	0.01	0.00	0.02	0.37	36.0	1,365
Georgia*	-1.2	7.9	12,486	8.2	0.3	0.2	0.36	0.21	1.06	-0.46	43.7	792
Germany*	0.0	93.9	2,285	30.5	0.0	0.0	5.81	31.93	1.14	35.09	7.3	1,545
Ghana	2.2	16.9	2,278	43.0	22.2	20.8	0.24	0.10	0.65	-17.80	53.0	1,293
Greece*	0.2	45.8	6,465	21.9	0.3	0.2	1.27	0.25	6.25	5.38	25.0	2,389
Greenland	n/a	n/a	10,522,275	0.0	n/a	n/a	n/a	n/a	n/a	0.03	n/a	n/a
Guatemala	2.5	19.4	8,130	1.9	3.7	2.6	0.13	0.27	1.61	-3.87	43.0	762
Guinea	2.0	3.3	22,984	0.0	8.5	7.8	0.12	0.03	1.36	0.01	45.4	n/a
Guinea-Bissau	2.4	2.3	19,677	48.4	1.6	1.4	0.02	0.01	0.14	n/a	36.0	n/a
Guyana	0.1	0.7	315,678	0.0	0.1	0.1	0.03	0.01	1.60	-0.88	43.0	2,113
Haiti	1.7	7.1	1,420	7.2	8.7	8.1	0.05	0.01	0.93	-0.19	43.0	848
Honduras	2.0	16.7	13,107	0.0	2.8	2.1	0.07	0.10	0.69	-2.35	23.3	778
Hungary*	-0.3	28.4	11,985	94.2	0.0	0.0	0.71	4.48	0.07	-8.66	20.0	789
Iceland*	1.4	110.2	538,878	n/a	n/a	n/a	0.05	0.10	0.00	0.22	n/a	1,327
India*	1.6	1.6	1,582	33.2	935.8	817.3	56.00	17.00	688.00	-25.34	18.0	980
Indonesia	1.3	6.2	12,483	0.0	149.4	112.1	6.62	0.56	75.60	4.97	36.9	1,317
Iran (Islamic Republic of)	1.1	3.7	1,876	6.6	n/a	72.2	6.20	1.10	86.00	14.63	n/a	1,624

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Unit	%	$ / m^3	m^3 / cap / yr	%	Millions	Millions	Billions m^3 / y	Billions m^3 / y	Billions m^3 / y	Billions m^3 / y	%	m^3 / cap / yr
Source	UN	UN/FAO Aquastat	FAO Aquastat	FAO Aquastat	WHO/UNICEF JMP	WHO/UNICEF JMP	FAO Aquastat	FAO Aquastat	FAO Aquastat	Water Footprint Network	Global Water Intelligence	Water Footprint Network
Year	2008	2008	2002 or latest	2002 or latest	2008	2008	2000 or latest	2000 or latest	2000 or latest	1997-2001	2008	1997-2001
Iraq	2.5	0.4	3,204	53.5	10.1	8.0	4.30	9.70	52.00	3.05	31.3	1,342
Ireland*	1.9	240.8	10,706	5.8	0.1	0.0	0.26	0.87	0.00	-0.82	25.0	n/a
Israel	1.8	102.1	237	57.9	0.0	0.0	0.71	0.11	1.13	6.17	10.0	1,391
Italy*	0.5	51.9	2,936	4.6	n/a	58.9	8.07	16.29	20.01	50.72	32.1	2,332
Jamaica	0.7	36.8	3,473	0.0	0.4	0.5	0.14	0.07	0.20	0.47	43.0	1,016
Japan*	0.1	55.5	3,328	0.0	0.0	0.0	17.40	15.80	55.23	91.71	10.3	1,153
Jordan	2.9	22.6	143	27.2	0.2	0.1	0.29	0.04	0.61	4.51	31.3	1,303
Kazakhstan	0.5	3.8	7,062	31.2	0.3	0.5	0.59	5.78	28.63	-12.15	29.0	1,774
Kenya	2.6	11.2	779	32.6	26.2	26.6	0.47	0.10	2.17	-2.27	83.0	714
Korea, Dem. People's	0.5	1.5	3,238	13.2	n/a	23.8	1.79	2.27	4.96	n/a	27.0	845
Rep.	0.5	36.5	1,501	7.0	n/a	n/a	6.62	3.05	15.80	n/a	18.3	1,179
Korea, Republic of*	3.4	173.1	7	100.0	0.0	0.0	0.40	0.02	0.49	1.90	5.0	1,115
Kuwait	1.1	0.5	8,580	0.0	0.4	0.4	0.32	0.31	9.45	-0.52	70.1	1,361
Kyrgyzstan	1.7	1.8	53,752	42.9	3.7	2.8	0.13	0.17	2.70	-0.06	29.4	1,465
Lao People's Dem. Rep.	-0.6	112.6	14,933	52.8	0.7	0.5	0.16	0.10	0.04	0.35	38.0	684
Latvia*	1.3	21.8	1,153	0.8	n/a	4.1	0.38	0.15	0.78	4.21	31.3	1,499
Lebanon	1.0	32.3	2,552	0.0	1.5	1.4	0.02	0.02	0.01	n/a	36.0	n/a
Lesotho	3.7	7.5	61,159	13.8	3.8	3.3	0.03	0.02	0.06	0.04	6.7	1,382
Liberia	2.0	21.0	95	0.0	0.3	0.2	0.61	0.13	3.58	3.87	31.3	2,056
Libyan Arab Jamahiriya	-0.7	175.2	7,377	37.5	n/a	3.4	0.21	0.04	0.02	0.89	38.0	1,128

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Source	UN	UN/FAO Aquastat	FAO Aquastat	FAO Aquastat	WHO/UNICEF JMP	WHO/UNICEF JMP	FAO Aquastat	FAO Aquastat	FAO Aquastat	Water Footprint Network	Global Water Intelligence	Water Footprint Network
Year	2008	2008	2002 or latest	2002 or latest	2008	2008	2000 or latest	2000 or latest	2000 or latest	1997-2001	2008	1997-2001
Luxembourg*	1.2	1342.6	3,421	67.7	n/a	n/a	0.00	0.00	0.00	n/a	n/a	n/a
Madagascar	2.8	0.6	17,634	0.0	18.2	18.0	0.42	0.23	14.31	-2.93	32.8	1,296
Malawi	2.8	4.1	1,164	6.6	6.1	6.3	0.15	0.05	0.81	-0.61	24.2	1,277
Malaysia	1.9	24.5	21,470	0.0	1.3	1.1	1.52	1.90	5.60	-4.36	37.0	2,344
Maldives	1.4	370.6	98	0.0	n/a	n/a	0.00	0.00	0.00	0.44	n/a	n/a
Mali	2.4	1.3	7,870	40.0	8.6	8.1	0.59	0.06	5.90	-3.23	29.8	2,020
Malta*	0.6	163.4	165	0.0	n/a	n/a	0.04	0.00	0.01	0.64	n/a	1,916
Mauritania	2.6	1.9	3,546	96.5	2.9	2.4	0.15	0.05	1.50	0.99	30.4	1,386
Mauritius*	0.9	13.2	2,024	0.0	0.1	0.1	0.21	0.02	0.49	0.68	53.1	1,351
Mexico*	1.1	13.8	4,353	10.6	34.5	16.2	13.59	4.29	60.34	28.75	45.0	1,441
Mongolia	1.3	12.0	13,176	0.0	1.8	1.3	0.09	0.12	0.23	-1.68	27.0	n/a
Morocco*	1.2	6.9	918	0.0	15.2	9.8	1.23	0.36	11.01	5.22	25.0	1,531
Mozambique	2.6	15.6	9,655	53.8	20.9	18.0	0.07	0.01	0.55	-1.06	58.0	1,113
Myanmar*	0.8	0.9	2,528	14.1	10.3	9.3	0.41	0.18	32.64	-0.42	27.0	1,591
Namibia	1.9	29.4	21,344	65.2	1.7	1.4	0.07	0.01	0.21	0.04	11.4	683
Nepal	2.1	1.3	7,296	5.7	21.0	19.8	0.30	0.06	9.82	0.49	45.0	849
Netherlands*	0.5	109.7	5,426	87.9	0.0	0.0	0.49	4.76	2.69	11.19	5.0	1,223
New Zealand*	1.1	59.9	77,305	0.0	n/a	n/a	1.02	0.20	0.89	-6.61	n/a	n/a
Nicaragua	1.3	5.4	34,706	3.5	3.6	2.7	0.19	0.03	1.08	-1.41	43.0	819
Niger	3.6	2.4	2,288	89.6	14.1	13.4	0.09	0.01	2.08	0.49	16.9	n/a

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Year	2008	2008	2002 or latest	2002 or latest	2008	2008	2000 or latest	2000 or latest	2000 or latest	1997-2001	2008	1997-2001
Nigeria	2.4	27.4	1,893	22.8	108.8	102.7	1.69	0.81	5.51	-2.93	50.0	1,979
Norway*	0.8	206.3	81,703	0.0	0.0	0.0	0.50	1.46	0.23	3.39	25.0	1,467
Oman	1.8	39.8	354	0.0	n/a	n/a	0.13	0.02	1.17	2.86	31.3	1,606
Pakistan	2.2	1.0	1,321	75.6	118.5	91.8	9.65	1.40	172.40	0.04	39.8	1,218
Palestine	3.4	14.7	14	n/a	0.0	0.0	0.20	0.03	0.19	n/a	31.3	n/a
Panama	1.8	28.2	43,539	0.4	1.7	1.1	0.55	0.04	0.23	0.00	44.3	979
Papua New Guinea	2.5	112.8	121,791	0.0	3.8	3.5	0.04	0.03	0.00	1.85	27.0	2,005
Paraguay	1.9	32.9	53,865	72.0	3.7	1.9	0.10	0.04	0.35	-5.79	45.0	1,165
Peru	1.3	6.4	66,339	15.5	18.1	9.0	1.68	2.03	16.42	2.44	42.8	777
Philippines*	1.9	2.1	2,245	n/a	27.7	21.5	5.85	7.46	65.59	3.16	55.3	1,543
Poland*	-0.1	32.6	1,656	13.0	7.6	3.8	2.10	12.75	1.35	5.33	18.0	1,103
Portugal*	0.5	21.6	6,893	44.7	0.0	0.0	1.08	1.37	8.81	10.04	25.0	2,264
Puerto Rico	n/a	98.0	1,791	0.0	n/a	n/a	0.90	0.02	0.07	n/a	35.0	n/a
Qatar	9.1	256.7	41	3.5	0.0	0.0	0.17	0.01	0.26	0.43	35.0	1,087
Republic of Moldova*	-1.5	2.6	3,523	91.4	1.0	0.8	0.22	1.33	0.76	-2.35	44.0	1,474
Réunion	n/a	n/a	6,123	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Romania*	-0.4	22.1	1,980	80.0	9.8	6.0	1.69	5.64	1.86	-2.93	40.1	1,734
Russian Federation	-0.5	25.3	31,877	4.3	42.5	18.4	13.40	39.60	13.20	-1.67	19.3	1,858
Rwanda	2.5	29.7	535	0.0	4.5	4.6	0.04	0.01	0.10	0.05	43.8	1,107
Saint Kitts and Nevis	1.3	n/a	462	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

	Population Growth	GDP / Drop	Total Renewable Freshwater Resources Per Capita	Water Dependency	Population NOT Using an Improved Sanitation Facility	Population NOT Using an Improved Drinking Water Source	Water Withdrawal for Municipal Purposes	Water Withdrawal for Industrial Purposes	Water Withdrawal for Agricultural Purposes	Net Virtual-Water Import	Non-Revenue Water	Water Footprint Per Capita
Unit	%	$ / m³	m³ / cap / yr	%	Millions	Millions	Billions m³ / y	Billions m³ / y	Billions m³ / y	Billions m³ / y	%	m³ / cap / yr
Source	UN	UN/FAO Aquastat	FAO Aquastat	FAO Aquastat	WHO/UNICEF JMP	WHO/UNICEF JMP	FAO Aquastat	FAO Aquastat	FAO Aquastat	Water Footprint Network	Global Water Intelligence	Water Footprint Network
Year	2008	2008	2002 or latest	2002 or latest	2008	2008	2000 or latest	2000 or latest	2000 or latest	1997-2001	2008	1997-2001
Sao Tome and Principe	1.7	25.3	13,610	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Saudi Arabia	2.4	19.8	95	0.0	n/a	25.2	2.13	0.71	20.83	13.25	35.0	1,263
Senegal	2.6	6.0	3,227	33.5	7.8	6.2	0.10	0.06	2.07	0.32	19.9	1,931
Serbia*	-0.4	n/a	17,824	n/a	1.2	0.8	n/a	n/a	n/a	n/a	38.0	n/a
Sierra Leone	3.4	6.1	28,778	0.0	5.6	5.2	0.02	0.01	0.35	0.06	36.0	896
Singapore*	1.7	957.6	193	0.0	n/a	n/a	0.09	0.10	0.01	11.78	4.4	n/a
Slovakia*	0.0	n/a	14,876	74.9	0.1	0.0	n/a	n/a	n/a	1.84	30.3	n/a
Slovenia*	0.2	n/a	15,926	41.4	0.0	0.0	n/a	n/a	n/a	2.00	38.0	n/a
Solomon Islands	2.6	n/a	87,532	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Somalia	2.4	0.8	1,512	59.2	8.4	6.9	0.02	0.00	3.28	0.57	36.0	671
South Africa*	1.3	22.1	639	10.4	17.1	11.2	3.90	0.76	7.84	2.14	28.8	931
Spain*	1.2	45.0	2,498	0.3	0.0	0.0	4.79	6.60	24.24	14.43	23.9	2,325
Sri Lanka	0.8	3.2	2,492	0.0	1.6	1.7	0.30	0.31	12.00	-0.82	45.0	1,292
Sudan	2.1	1.9	3,604	76.9	32.3	26.0	0.99	0.26	36.07	-6.96	36.0	2,214
Suriname	1.2	4.3	236,836	27.9	n/a	n/a	0.03	0.02	0.62	-0.16	n/a	1,234
Swaziland	1.0	2.7	3,862	41.5	0.5	0.5	0.02	0.01	1.01	0.22	36.0	1,225
Sweden*	0.5	161.8	19,920	1.7	0.0	0.0	1.09	1.61	0.26	5.78	17.0	1,621
Switzerland*	0.6	191.3	7,061	24.5	0.0	0.0	0.62	1.90	0.05	9.01	12.0	1,682
Syrian Arab Republic	3.1	3.3	2,171	72.4	1.0	0.8	1.43	0.60	14.67	-1.18	31.3	n/a
Tajikistan	1.3	0.2	14,589	16.7	0.4	0.4	0.44	0.56	10.96	-1.05	35.2	939

	Population Growth	GDP / Drop	Total Renewable Freshwater Resources Per Capita	Water Dependency	Population NOT Using an Improved Sanitation Facility	Population NOT Using an Improved Drinking Water Source	Water Withdrawal for Municipal Purposes	Water Withdrawal for Industrial Purposes	Water Withdrawal for Agricultural Purposes	Net Virtual-Water Import	Non-Revenue Water	Water Footprint Per Capita
Unit	%	$ / m³	m³ / cap / yr	%	Millions	Millions	Billions m³ / y	Billions m³ / y	Billions m³ / y	Billions m³ / y	%	m³ / cap / yr
Source	UN	UN/FAO Aquastat	FAO Aquastat	FAO Aquastat	WHO/UNICEF JMP	WHO/UNICEF JMP	FAO Aquastat	FAO Aquastat	FAO Aquastat	Water Footprint Network	Global Water Intelligence	Water Footprint Network
Year	2008	2008	2002 or latest	2002 or latest	2008	2008	2000 or latest	2000 or latest	2000 or latest	1997-2001	2008	1997-2001
Thailand	1.0	4.9	6,083	48.8	2.6	2.6	2.74	2.78	51.79	-27.82	27.9	2,223
Frm Ygs Rep of Mac*	0.2	5.8	3,742	15.6	0.4	0.2	0.22	0.27	1.07	n/a	57.3	n/a
Togo*	2.6	17.0	2,787	21.8	6.5	5.9	0.09	0.00	0.08	-1.49	27.9	1,277
Trinidad and Tobago	0.4	78.1	2,880	0.0	0.1	0.1	0.21	0.08	0.02	0.41	43.0	1,039
Tunisia*	0.9	13.8	410	8.7	3.8	1.6	0.37	0.11	2.17	-6.93	23.5	1,597
Turkey*	1.3	18.5	3,170	1.0	18.9	7.6	6.20	4.30	29.60	4.91	54.0	1,615
Turkmenistan	1.4	0.4	12,067	97.1	0.2	0.1	0.42	0.19	24.04	-0.87	38.0	1,764
Uganda	3.2	52.8	2,085	40.9	16.2	16.6	0.13	0.05	0.12	-3.22	44.8	n/a
Ukraine	-0.8	4.8	3,034	61.9	4.6	2.3	4.56	13.28	19.69	-16.82	38.9	1,316
United Arab Emirates	4.1	71.8	33	0.0	0.2	0.1	0.62	0.07	3.31	n/a	13.0	n/a
United Kingdom*	0.5	279.5	2,864	1.4	0.0	0.0	2.07	7.19	0.28	46.55	20.9	1,245
United Rep. of Tanzania	2.7	4.0	2,142	12.8	32.7	31.5	0.53	0.03	4.63	-2.16	44.1	1,127
United States*	1.0	29.5	7,951	8.2	3.1	0.0	65.44	220.60	192.40	-53.49	11.0	2,483
Uruguay	0.1	10.2	41,501	57.6	0.0	0.0	0.08	0.04	3.03	-4.45	54.1	n/a
Uzbekistan	1.2	0.4	2,656	77.4	0.0	0.0	2.77	1.20	54.37	-4.95	34.0	979
Venezuela	1.8	38.2	43,853	41.4	n/a	n/a	3.81	0.59	3.97	4.15	43.0	883
Viet Nam	1.3	1.3	10,233	59.4	29.2	22.1	5.54	17.23	48.62	-7.87	32.7	1,324
Yemen	2.9	9.1	179	0.0	15.4	11.0	0.27	0.07	3.06	3.66	31.3	619
Zambia	2.3	8.3	8,336	23.8	6.9	6.2	0.29	0.13	1.32	-0.32	54.6	754
Zimbabwe	0.0	0.9	1,605	38.7	8.5	7.6	0.59	0.30	3.32	-3.25	36.0	952

Appendix B: U.S. Data

	Population Growth 2009-2010	GDP / Drop	Available Precipitation 2005	Total Water Withdrawal	Number of Impaired Waters	People Affected by Drinking Water Quality Violations	Water Impact Index	Water Withdrawal for Municipal Purposes	Water Withdrawal for Thermoelectric Power	Infrastructure Depreciation Rate	Water Withdrawal for Agricultural Purposes	Water Withdrawal for Industrial Purposes
Unit	%	$ / kgallon	inches / year	Mgal / day	#	#	Mgal WII Equiv / day	Mgal / day	Mgal / day	%	Mgal / day	Mgal / day
Source	US Census	US Census	National Res. Def Council	USGS	EPA	EPA		USGS	USGS	GWI	USGS	USGS
Year	2010	2008	2010	2005	2008	2009	2010	2005	2005	2008	2005	2005
Alabama	0.47	37.7	24.8	9,960	200	227,967	55.9	841	8,268	21.4	264	8,848
Alaska	2.04	93.7	n/a	876	32	33,998	18.5	90	33	n/a	721	64
Arizona	1.35	92.3	2.6	6,240	84	200,764	5,759.6	1,197	90	21.1	4,834	213
Arkansas	0.79	19.0	23.6	11,400	224	644,578	1,545.1	422	1,996	n/a	8,825	2,179
California	1.03	128.8	13.3	32,900	691	941,301	30,554.0	7,476	50	14.4	25,243	175
Colorado	1.60	40.9	3.8	13,600	198	165,381	9,065.9	898	123	10.0	12,421	271
Connecticut	0.34	570.1	25.4	854	408	70,230	221.5	543	207	19.2	32	278
Delaware	0.83	212.5	19.4	635	101	24,980	12.9	103	421	53.3	67	465
D.C.	1.77	n/a	17.8	10	27	n/a	n/a	n/a	10	n/a	n/a	10
Florida	0.91	242.4	15.5	6,820	827	842,352	5,354.2	2,730	558	27.1	3,097	996
Georgia	0.97	167.8	18.6	5,380	281	424,043	82.4	1,300	2,682	19.6	819	3,261
Hawaii	0.92	305.1	n/a	447	311	88,715	4.5	273	38	n/a	105	69
Idaho	0.99	6.4	9.8	19,500	1,057	181,851	1,546.1	333	1	17.0	19,134	89
Illinois	0.40	93.0	15.3	15,200	1,058	529,661	134.8	1,801	12,295	24.1	551	12,851
Indiana	0.44	61.6	17.5	9,340	1,836	361,196	100.5	800	6,041	65.9	191	8,350
Iowa	0.49	89.8	9.6	3,370	434	92,106	49.1	433	2,530	21.6	166	2,767
Kansas	0.84	70.9	6.0	3,790	1,387	170,152	487.0	418	458	40.5	2,853	516
Kentucky	0.63	80.3	22.0	4,330	1,089	344,876	30.4	593	3,421	46.6	85	3,653
Louisiana	0.89	34.8	23.8	11,400	250	756,459	414.4	763	6,272	29.6	1,271	9,417
Maine	-0.22	237.1	22.6	466	206	94,128	13.1	130	100	31.9	60	276

	Population Growth 2009-2010	GDP / Drop	Available Precipitation 2005	Total Water Withdrawal	Number of Impaired Waters	People Affected by Drinking Water Quality Violations	Water Impact Index	Water Withdrawal for Municipal Purposes	Water Withdrawal for Thermoelectric Power	Infrastructure Depreciation Rate	Water Withdrawal for Agricultural Purposes	Water Withdrawal for Industrial Purposes
Unit	%	$ / kgallon	inches / year	Mgal / day	#	#	Mgal WII Equiv / day	Mgal / day	Mgal / day	%	Mgal / day	Mgal / day
Source	US Census	US Census	National Res. Def Council	USGS	EPA	EPA		USGS	USGS	GWI	USGS	USGS
Year	2010	2008	2010	2005	2008	2009	2010	2005	2005	2008	2005	2005
Maryland	0.86	448.2	18.6	1,350	501	1,693,762	779.0	755	437	16.1	82	511
Massachusetts	0.59	679.4	24.3	1,260	837	835,037	838.8	834	107	7.0	191	230
Michigan	-0.24	76.4	13.5	11,700	2,352	123,467	126.7	1,391	9,177	16.9	393	9,874
Minnesota	0.52	147.2	6.9	4,040	1,144	205,420	61.9	615	2,441	18.0	417	3,015
Mississippi	0.36	68.9	26.3	2,850	197	379,259	41.8	425	355	16.4	1,858	564
Missouri	0.49	60.4	16.1	8,790	204	276,645	355.2	891	6,174	18.3	1,602	6,296
Montana	0.61	7.4	3.6	10,100	665	78,998	1,105.8	166	90	41.7	9,751	192
Nebraska	0.90	14.5	4.5	12,600	178	164,688	8,117.6	382	3,546	44.6	8,651	3,572
Nevada	0.61	118.8	3.1	2,380	181	117,583	1,716.4	713	37	8.3	1,524	142
New Hampshire	0.10	315.5	22.4	439	1,089	80,473	21.1	141	229	11.9	23	274
New Jersey	0.45	554.1	21.1	1,930	745	1,672,522	1,094.6	1,038	662	10.0	105	787
New Mexico	1.32	50.5	1.6	3,330	187	232,416	2,420.4	318	56	34.7	2,881	128
New York	0.28	256.6	19.1	10,300	491	1,857,850	2,667.5	2,670	7,136	27.4	144	7,474
North Carolina	1.09	79.9	19.6	11,300	902	701,741	287.9	1,082	8,330	18.8	1,438	8,790
North Dakota	1.22	49.6	2.9	1,340	247	13,265	59.8	76	1,060	24.0	180	1,080
Ohio	0.00	91.9	16.0	11,500	267	404,712	98.3	1,579	8,909	19.4	76	9,807
Oklahoma	1.05	190.2	10.5	1,540	743	748,790	223.9	671	164	10.5	676	191
Oregon	0.85	55.8	15.4	7,220	1,397	69,210	1,256.2	608	8	14.8	6,413	196
Pennsylvania	0.24	128.4	19.1	9,470	6,957	586,558	771.2	1,572	6,415	20.8	610	7,296
Rhode Island	-0.05	740.8	24.6	141	141	76,574	108.0	126	1	5.9	11	4

	Population Growth 2009-2010	GDP / Drop	Available Precipitation 2005	Total Water Withdrawal	Number of Impaired Waters	People Affected by Drinking Water Quality Violations	Water Impact Index	Water Withdrawal for Municipal Purposes	Water Withdrawal for Thermoelectric Power	Infrastructure Depreciation Rate	Water Withdrawal for Agricultural Purposes	Water Withdrawal for Industrial Purposes
Unit	%	$ / kgallon	inches / year	Mgal / day	#	#	Mgal WII Equiv / day	Mgal / day	Mgal / day	%	Mgal / day	Mgal / day
Source	US Census	US Census	National Res. Def Council	USGS	EPA	EPA		USGS	USGS	GWI	USGS	USGS
Year	2010	2008	2010	2005	2008	2009	2010	2005	2005	2008	2005	2005
South Carolina	0.94	44.3	16.3	7,850	1,060	380,537	209.3	774	6,531	21.5	104	6,968
South Dakota	1.14	166.1	3.8	500	168	35,296	80.2	108	5	n/a	373	20
Tennessee	0.75	53.3	25.4	10,800	900	303,020	69.4	951	8,909	29.6	145	9,745
Texas	1.79	107.4	5.5	23,600	651	1,462,779	12,228.7	4,527	9,711	20.9	8,073	11,021
Utah	1.79	49.8	3.5	4,820	118	134,484	4,372.8	621	58	32.2	4,106	99
Vermont	0.16	113.7	19.8	523	131	47,372	5.8	60	421	n/a	30	433
Virginia	1.14	125.6	17.2	7,080	2,534	135,054	670.4	1,108	4,909	15.4	522	5,477
Washington	1.12	129.5	24.7	5,600	2,419	104,501	289.7	1,076	455	23.7	3,589	937
West Virginia	0.23	26.4	19.7	4,810	981	135,834	115.0	223	3,546	n/a	58	4,530
Wisconsin	0.31	63.2	10.8	8,600	593	337,714	88.9	639	6,887	21.4	557	7,404
Wyoming	0.60	13.5	3.2	4,410	106	7,576	3,054.4	103	223	n/a	4,030	281