

The Future of Water

Sufficient potable water is considered to be the defining crisis of the Twenty-First Century. Most of us are aware that Atlanta, GA came very close to running out of water in 2007, but how bad was it really? Atlanta was down to a remaining water supply of 90 days with extreme conservation measures in place. Igor Shiklomanov, one of the world's leading hydrologists after studying mounds of data collected over many years, has concluded that: there will be a steadily narrowing gap between clean water supply and water demand, between water for drinking and water for food, for sanitation and for industry.

It is predicted that thirty-six states will face water shortages within 3 years and the cost of water will rise to frightening levels. So, how much water do we each need daily? The average person drinks about 1.5 gallon a day and uses 40 gallons for washing and flushing. Seems doable, doesn't it? However, in the USA the average daily use per person is 100 gallons and in Texas it is 200 gallons. Personal consumption is only part of the picture though. We, also, have to think about how much water is needed to grow and process our food. That number runs from 25 gallons for a single serving of rice to 1,320 gallons for a small steak. For those of you who enjoy a libation with your meal one glass of wine requires 66 gallons of water.

Adding everything up and including crops to clothe us as well as feed us, we need an average of 463,500 gallons of water a year per person. Here in North America, average availability of water is 2,377,530 gallons per person per year. Hot dog, we are in fat city, errrr are we? There are water shortages in many areas. Virtually all available rivers have been dammed and we already shift more water from place to place than anywhere else on Earth.

And there are a few other problems with our water sources:

- Aquifers depleted below recharge rates
- Reservoirs
 - Pollution
 - Agricultural runoff
 - Urban runoff
 - Silt
 - Salt
- Irrigation
- Population Growth

So what are our potential solutions? We can obtain additional water by importing it or desalination of sea water. We can reduce demand through conservation, pricing, or imaginative technologies. We can control our population growth. Finally, we can take it from others legally or by force.

Of these possibilities, which are the most ethically and economically viable? Most countries do not want to sell water to anyone outside their homeland; they

are concerned about their own people. Desalination has major problems including disposal of the salt and the enormous amounts of power consumed in the desalination process. In addition, most saltwater is on the coasts while the need for water is in the interior. Recently, I saw an editorial that said that we could desalinate all the water we need on the coasts and build pipelines to move it around the country just as we do for fuels. Interesting idea -- Yes, we do move a lot of oil, refined fuels and natural gas around, but look at the quantitative difference. Based on Department of Energy statistics for 2006, the average American uses 464 gallons of gasoline per year, but in that same year, the average American uses 463,000 gallons of water. Those would be some pipelines. In addition, we still have to dispose of the salt.

The other options also present their own set of challenges. With strict conservation and a new water ethic that deplores waste, we can move toward a solution, but with the rising prices, how do we provide for the poor? Population control would really help, but it is extremely difficult without resorting to draconian measures like those used in China. Imaginative technology may be on the horizon but I don't want to bet my life and that of the lives of my grandchildren on a technology miracle.

So, that leaves take it from others legally or illegally. Sadly, this is already happening. People are being conned into selling their water rights without really understanding the implications. In Texas, the Rule of Capture allows landowners to pump an aquifer dry without any consideration for their neighbor's water supply. This is a "legal" way to take water from others. Then there is the solution of acquiring water by military force. Water wars are certainly something we want to avoid. Many of the difficulties among Israel, Lebanon, Syria and Palestine revolve around the availability of water. Obviously this is a morally undesirable and temporary way to solve a long term problem.

So, we have boiled down our potential solutions to conservation and a new water ethic. There are a myriad of ways to conserve: turn off the water when you brush your teeth, collect water in a container when you turn on the hot water while waiting for it to run hot, short showers using low flow shower heads, use native plants in your landscaping rather than exotics that require large amounts of water, etc. etc. A new water ethic for Texas will involve doing away with the Law of Capture, educating the public about the need for conservation, using all the water that comes to us as rainwater.

In future articles we will explore Rainwater Collection for home use, landscaping, livestock and wildlife.