

How Global Warming and Climate Change Will Affect Our Drinking Water

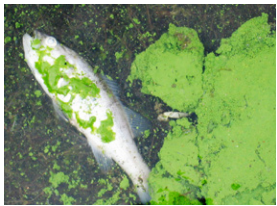
Global warming and a changing climate will continue to have disruptive and unpredictable effects on both our drinking water sources and communities. Some places will experience increased frequency and intensity of rain, floods, and sewer overflows. Other areas will experience frequent droughts, water scarcity and increased fire risk. These changes can disproportionately affect underserved communities and those already facing significant health and economic burdens — the most vulnerable members in our communities.

The impacts of climate change on water resources and drinking water services are highly variable across the country depending on location, current climate, and access to financial resources in the community. The effects of climate change are also very difficult to anticipate or predict. This uncertainty makes the already complex job of managing water quantity and quality even more difficult. Moreover, changing weather and more extreme weather events will stress infrastructure, making it more difficult to keep water accessible and affordable.

Responding to the effects of climate change requires long-term planning, investments in communities, and coordination among drinking water systems, local leaders, and water consumers. In short, we will need to expect the unexpected.

Climate Change Effects on Our Communities and Drinking Water Supplies:

A Warming Globe, Rising Temperatures. Climate change will have significant impacts on the water cycle. Rising temperatures will lead to more water in the atmosphere, which will increase precipitation, changing the intensity and frequency. Rising air temperatures will increase water temperatures, which will cause more harmful algae outbreaks in drinking water sources, possibly leading to water shutdowns.



For coastal water systems, sea level rise from melting of glaciers due to rising temperatures is another significant concern. Rising seas can threaten infrastructure, cause saltwater intrusion into drinking water sources and worsen the effects of extreme events such as hurricanes on coastal communities and the water systems that serve them.

More Water in the Atmosphere, More Extreme Weather Events. Significant rain events, more frequent flooding, hurricanes and winter storms have all increased in number and intensity in recent years. Extreme weather events can cause unexpected, significant damage to drinking water infrastructure. In communities with combined sewer

systems, a heavy rain event can cause a significant overflow of raw sewage into the nearest lake or river. Extreme weather can interrupt water services and require expensive and sometimes disruptive infrastructure repairs or replacement.

Extreme weather events can also affect water quality. Communities that use surface water sources for drinking water may require use of an alternative water source or bottled water if there is significant runoff of contaminants during flash flooding. The cost and timeline for recovering from this may require changes, repairs, or other improvements to water system infrastructure and operations.



When it's Not Pouring...Drought. Climate Change will lead to more times of drought. Drought is when an area does not receive enough or the expected amount of precipitation over an extended period. Often, rising temperatures, exacerbate the effects of droughts. Droughts can decrease the quantity of water available in surface and groundwater sources. If this happens it will lead to higher concentrations of pollutants in our drinking water sources if pollution

levels remain the same. The higher pollution concentration in source water will need more treatment, costing communities more money to provide safe drinking water.

Drinking water providers in areas experiencing droughts will have the added challenge of not



knowing how long drought conditions will last, or how severe they will become. Unless a community prepares, prolonged droughts can have serious environmental,

economic, and social or cultural impacts that may require difficult decisions about using and paying for safe drinking water.

More Intense and Frequent Wildfires. Climate change will contribute to more frequent wildfires, which can be worse because of the above-mentioned increases in droughts and/or rising temperatures. Wildfires can have significant impacts on drinking water, because they often deposit ash and other debris or pollution in water sources. If heavy rains follow a wildfire, flash flooding can cause extreme erosion and move large amounts of dirt, debris, sand, heavy metals, nutrients, and other contaminants into drinking water sources. This can lead to very costly and time-consuming clean-up and treatment efforts.



What Does Global Warming Do to Our Drinking Water Supplies?

It is the goal of all our drinking water providers to provide safe and affordable drinking water to customers. Climate change will make that task much more difficult. Proactive water providers in areas that are at the greatest risk of extreme weather need to prepare for increased drought and other weather events. They also need to find ways to develop and implement environmental, financial, and physical solutions to maintain a safe and affordable supply of drinking water.

It is common after hurricanes or significant rain events over 2 inches, which are occurring at a much more frequent rate, for drinking water systems to temporarily stop operating or issue boil water notices to their customers. After flooding, more catastrophic events threaten water quality by releasing millions of gallons of pollutants such as livestock manure from pits, untreated sewage overflows from wastewater treatment facilities, and coal ash pit failures. These events can cause long term problems with drinking water sources.

What Can YOU Do About It?

Community advocates like Clean Water Action and our supporters can play an important role to alleviate some of these stressors on our drinking water supplies when we experience the effects of global warming. Water and energy conservation are the best ways individuals can reduce their contribution to the problems and negative effects. Since it takes a lot of energy to provide clean drinking water, conservation can help reduce greenhouse gases in our atmosphere, the main cause of global warming. It will also help with water quantity and quality problems and help keep costs down to treat our drinking water. An ounce of prevention equals a pound of cure — the old adage rings more true today than ever — and it makes protecting and conserving our current source water the best option when responding to climate change. You can also get engaged in the policy making process, contact your elected officials, and work for candidates who are champions for taking on climate change! Taking action today to reduce your water and energy use, and encouraging your friends, family, and neighbors to do so, can protect existing water supplies, preserve other water resources, and avoid expensive alternatives.

To learn more about conserving water in your home or community, read our factsheet for tips to be successful! (MN_FactSheet_Water_Cons_3.20.19a.pdf).

Want to get more involved or have questions? Please feel free to contact our Water Program Coordinator, Steve Schultz, at sschultz@cleanwater.org or call 612-623-3666.