
BRINGING RIVERS TO LIFE



American Rivers

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Global Warming: Frequently Asked Questions

The overwhelming scientific consensus is that global warming — the rise in global temperatures caused by the buildup of carbon dioxide and other emissions in the atmosphere that trap the sun's heat like a blanket — poses a significant threat to our health, our economy, and our environment. Read on to learn what global warming means for our rivers and water supply — and what steps we can take to meet the challenges ahead.

Q: How will global warming affect rivers?

A: Global warming is projected to have far-ranging effects on rivers across the United States and worldwide. Although these changes will vary from region to region, scientists expect higher average global temperatures over the next century to cause higher river temperatures, resulting in harm to freshwater fish like salmon and bass and significant changes in aquatic plant and animal habitat. In addition, rainfall patterns will shift — some areas will get more precipitation, some less. Higher temperatures will cause mountain snowpack to melt earlier in the year, causing significant changes to river flow patterns — with less water available during the warmer and drier summer months. Changing water levels in our rivers poses greater challenges for farming, manufacturing, drinking water supplies and wildlife habitat.

Q: How will global warming affect our water supply?

A: The supply of and demand for water will be affected dramatically, as regions of the country that currently have wet climates are expected to become drier and vice versa. Some places may experience prolonged periods of drought, while others could see a dramatic increase in rainfall and more frequent flooding. These changes will have significant implications for a wide range of water uses, including agriculture, industry, energy production, recreation, water infrastructure/storage, waste disposal, and of course, healthy watershed functions.

Q: Can we address these challenges simply by storing excess water in the wet areas and sharing it with drier areas?

A: Changes from global warming are expected to happen quickly and unpredictably, and could overwhelm infrastructure like dams, reservoirs, and sewer systems that are currently in place for storing and managing water. In the face of such uncertainty, it will be tempting to turn to engineering and technology to solve these problems. However, it will be extremely expensive and complex to try to adjust our infrastructure that is adapted to current climatic conditions. While developing new, non-structural water storage methods and updating antiquated sewage and water supply systems are important steps,

we need to implement policies that address the causes of global warming and to protect that which gives us resilience in the face of climate change, our natural infrastructure — wetlands, floodplains and watersheds.

Q: What does this mean for our safety and health?

A: Global warming presents new challenges for the health and safety of communities. Scientists expect more extreme weather events, including extended droughts, more powerful storms, and more frequent floods. Droughts can spark wildfires, which threaten communities, especially those in the West. Floods resulting from tropical storms and hurricanes pose a risk to coastal communities while rapid snowmelt could create flooding problems in other places. In addition to damaging property and endangering lives, heavy rain and floods can overwhelm sewage treatment systems and industrial facilities, contaminating rivers and drinking water supplies with toxic pollution. Protecting floodplains and restoring wetlands, and adopting natural stormwater management techniques will be important steps toward safeguarding communities and the environment.

Q: If much of the pollution that causes global warming comes from burning coal to meet our energy needs, is hydropower a possible solution?

A: While global warming is caused by the burning of fossil fuels, building more hydropower dams is not the answer. The days of large hydropower dam construction in the United States are largely over because almost all of the profitable sites have already been developed. There are also many negative impacts associated with dams, including water pollution, irregular water flows downstream, destruction of fish and wildlife habitat, and dislocation of people and communities. Although hydropower will continue to play a role in meeting the world's energy needs, we must adopt a more forward-thinking energy policy that relies on a diverse array of conservation measures and renewable energy sources, such as wind and solar power. This approach will ensure cleaner air and water and a higher quality of life for everyone.

Q: Will we see more and stronger hurricanes in the future because of global warming?

A: The intensity of hurricanes has doubled in the past 30 years, according to scientists. They also say that we are currently in a 15 to 20 year period of high storm activity that could produce more frequent and more severe storms. Scientific evidence also indicates that warmer air temperatures caused by global warming lead to warmer ocean temperatures, which can fuel hurricane strength.

Q: What can we do to prepare and protect our communities?

A: Nature is our best defense against natural disasters. Healthy rivers, floodplains, and wetlands act as natural sponges and basins, absorbing flood waters, and act as barriers between storm surges and homes, buildings, and people. Healthy watersheds also help

recharge groundwater supplies, filter pollutants from our drinking water, provide critical habitat for fish and wildlife, and ensure places of enjoyment and recreation for communities.

Q: With the threat of global warming, can we be optimistic about the future?

A: Yes. Our vision of the future includes healthy rivers, safe communities and sustainable economies. To realize this vision, we need to commit ourselves to change. Our leaders must adopt policies that support energy conservation and investment in clean, renewable energy sources. Our communities must embrace transportation solutions that reduce traffic and improve air quality. Each of us can help take steps to cut global warming emissions by replacing standard light bulbs in our home with energy efficient bulbs, using energy efficient appliances and driving hybrid cars. Advocating for federal and state limits on global warming pollution can help companies bring these technologies to market faster, cheaper, and with the greatest impact. By facing the challenges of global warming together we can improve our quality of life and protect our planet for future generations.

Q: How can I learn more about the impacts of global warming?

A: Some good resources include the following:

www.StopGlobalWarming.org

“The Great Warming.” Documentary

www.thegreatwarming.com

Premieres in Regal Cinemas nationwide, November 3, 2006.

“Too Hot Not To Handle.” *HBO* Documentary

www.hbo.com/docs/programs/toohot/index.html

“Special Report: Global Warming.” *TIME Magazine* April 3, 2006.

www.time.com/time/covers/0,16641,20060403,00.html

Frederick, K.D. and P. H. Gleick. “Water and Global Climate Change: Potential Impacts on U.S. Water Resources.” *PEW Center on Global Climate Change*. September 27, 1999.

www.pewclimate.org/global-warming-in-depth/all-reports/water_and_climate_change/index.cfm