

Global Warming:

THE PROJECTED IMPACTS ON OUR WATER RESOURCES

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Few issues arouse as much controversy or discussion as global warming. The scientific community has generally come to a consensus that global temperatures are rising. The USEPA's website on climate change (<http://www.epa.gov/climatechange>) indicates that global temperatures have warmed 1.3°F over the past century, and they are projected to increase by an additional 3.2-7.2°F over the 21st century. These changes seem minor when compared to daily changes, but they are significant when averaged over the entire world.

The Earth is currently in an interglacial period, a 10,000 to 15,000 year period of relatively warmer temperatures that will be followed by a period of global cooling and glaciation. Is the rise in temperatures simply due to these natural cycles that the Earth undergoes? Most scientists now say no. The current rate of temperature rise and climate change since the mid-1900's is very rapid and unusual compared to known geologic history. This rate is best explained by heat-trapping gases from the burning of fossil fuels, clearing of forests, etc.

Ok, so for the sake of argument, let's accept that a warming of the Earth is occurring. What does this mean to us in New York? First of all, understand that each year will not necessarily be warmer than the year before. There will be year-to-year fluctuations that do not fit the overall trend. This past Winter, for example, did not fit the general pattern.

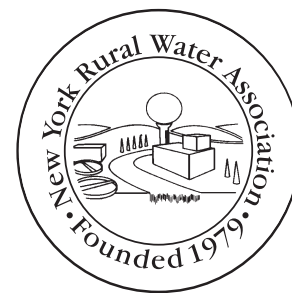
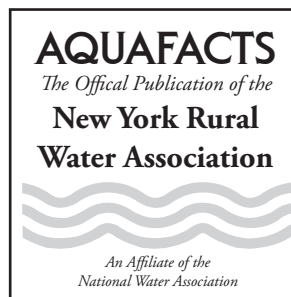
Most scientists generally agree that in the Northeast, the frequency and intensity of heavy downpours will increase, heat waves will magnify, and winters will be generally shorter and warmer. With more rainfall occurring per event, less spring snow melt, and higher rates of evapotranspiration, there will likely be more short-term droughts in late Summer and Fall.

Overall, there will be more runoff, with the timing of the runoff changing. This is consistent with studies in the U.S. Great Lakes Basin by the United States Geological Survey. These showed that runoff increased during 1955 to 2004 for all months except April.

Finally, the severity and frequency of flooding is believed to be on the rise due to higher overall runoff values and greater downpours. Flooding will especially be problematic in coastal areas due to sea-level rise.

In conclusion, I think we have all noticed that our climate is beginning to change in New York. The effects of global warming are projected to continue and have the potential to alter how we manage our water resources. In some ways, water supplies may benefit from global warming due to increased precipitation and runoff. However, the timing of runoff is changing (earlier peak streamflow) and the rates of evapotranspiration are greater, leading to increased incidents of drought. ●

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