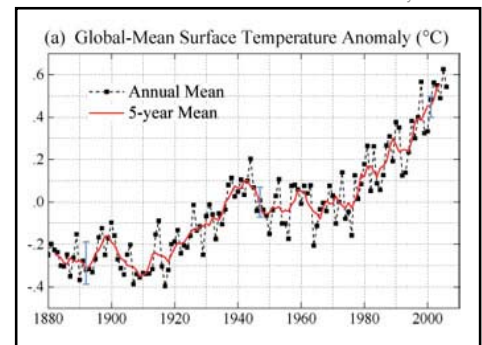


CLIMATE and WATER

Chart courtesy of NASA

Climate History:

Climate change and freshwater resource availability are intricately connected. Since the turn of the 19th Century, levels of greenhouse gases in the atmosphere, and hence global temperatures, have increased. At the current rate of greenhouse gas emissions released into the atmosphere, scientists expect future temperatures to increase another one to three degrees.



Climate Change and Water Resources:

- Natural Disasters - increase in magnitude and frequency of extreme weather events such as floods and droughts.
- Sea Level Rise - increase in global sea levels from melting of glaciers and polar icecaps. Due to rising sea levels, salt water will intrude into coastal aquifers, negatively affecting freshwater quality.
- Agriculture - decrease in overall agricultural productivity due to increased potential for droughts, floods, and heat waves and the persistent changes in water supply and soil moisture.
- Biodiversity - decrease in biodiversity as a result of habitat loss and fragmentation (or reconnection, as in the case of freshwater bodies) and the introduction of exotic or invasive species.
- Water Quality - decrease in water quality resulting from higher water temperatures and changes in the timing, intensity, and duration of precipitation. Higher temperatures reduce dissolved oxygen levels, which can affect aquatic life. Where stream flow and lake levels fall, there will be less dilution of pollutants; however, increased frequency and intensity of rainfall will increase pollution and sedimentation due to runoff.



Antarctica lost much more ice to the sea than it gained from snowfall, resulting in an increase in sea level. NASA/SVS



A drought in a Virginia riverbed. Virginia Department of Forestry



Learn More: Observe the timing of when plants and flowers begin to leaf and bloom in your community. Compare these times to historical records. In many locations around the world the timing of plant growth is changing. Find out how climate change is affecting your local community.