Climate Change and the Future of California’s Water

What Causes Climate Change?

When we burn fossil fuels such as coal, oil, and gas to power our homes, factories, and cars, we release carbon dioxide (CO₂) into the atmosphere. CO₂ is a greenhouse gas. Regular CO₂ released through the carbon cycle helps the atmosphere act like a blanket, keeping the Earth warm enough to live on. However, burning fossil fuels releases additional CO₂ into the atmosphere. This rampant CO₂ causes the atmosphere to act like a thicker blanket, which traps too much heat and disrupts the climate.

What Climate Change Means for California

California’s Mediterranean climate – with its hot, dry summers and cool, wet winters – makes managing water a challenge. A complex system of dams and aqueducts stores and distributes water to help protect communities from floods and provides a reliable supply of water throughout the year. However, this system is at risk from climate change. Increased temperatures, reduction of the Sierra snowpack, and sea level rise are already impacting water supply and demand, and the impacts are expected to become more pronounced in the coming decades. Understanding why climate change is happening, how it will impact our water resources, and what we can do to minimize its effects is essential for managing our water resources and protecting our future.

Sea Level Rise

As the climate warms, ice melts and oceans undergo thermal expansion. These both contribute to rising sea levels. In California, sea level rise threatens coastal communities with flooding and poses risks to groundwater reservoirs and the health and quality of the Sacramento-San Joaquin Delta.

Reduction in Snowpack

The Sierra snowpack acts as a frozen reservoir that, as it melts, provides water during the hot, dry summers. Warmer temperatures, leading to an earlier snowmelt, have already reduced snowpack by 25 percent in the past 100 years. Climate models indicate snowpack will continue to decline in the 21st century. This loss, combined with warmer and faster melting, decreases how much water we have during our hot, dry summer months.

Warmer Temperatures

Warmer temperatures impact our water supply demand, and the crops we can grow. As rain replaces snow, water is harder to store. Higher temperatures also lead to greater evapotranspiration, increasing the demand for water. In California agriculturally rich Central Valley, higher temperatures also mean a reduction in the winter chill days required by many crops such as apricots, plums, peaches, and pears.

What You Can Do About Climate Change

Our climate future is not fixed. Small changes in our daily lives can make a big difference. What will you and your friends do?

Conserve Water

Conserving water helps to adapt to and mitigate climate change. By conserving water, we can reduce the stress on our water resources and protect our future. Students and other young people are essential parts of the solution. What will you and your friends do?

Conserve Water by Replacing Lawns with Drought-Tolerant Native Plants.

Conserve Water by Taking Other Clean Energy Transportation to School, and Creating Social Media.

Conserve Water by Planting Native Plant Gardens and Trees, Launching Lunch Compost Programs, Installing Water Bottle Refill Stations, Biking or Walking, or Taking Other Clean Energy Transportation to School, and Creating Social Media.

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