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## **California's Water: Climate Change**

High in the Sierra Nevada, snow-capped mountains provide more than just a beautiful winter landscape. They hold the snow pack that serves as California's largest and most important water storage reservoir. But experts say climate change could significantly diminish that snow pack and reduce this natural storage so critical to our water system.

This segment of the "California's Water" series focuses on climate change and its potential impacts on our water supply system. The segment takes viewers high into the Sierra for a first-hand look at the snow pack and how climate change may affect its important role as a natural water reservoir. It also traces the journey our melting snow takes from the mountains to rivers and streams, and ultimately into man-made reservoirs such as Folsom Lake as part of our elaborate water supply system.

### ***Background on the Issue***

According to the California Department of Water Resources, there is growing evidence that California's climate is changing. Computer models suggest significant changes will occur in our rainfall and runoff patterns as average temperatures increase in the coming decades. A likely scenario is that more precipitation will fall as rain instead of snow, resulting in much earlier runoff and potentially producing floods far greater than what California has experienced in modern times.

These changes are important because California relies on the Sierra snowpack for a major part of its annual water storage. Traditionally, the snow melts gradually over the spring months, and whatever water is not absorbed into the ground flows into the valleys below as runoff in creeks and rivers. That runoff is then stored in man-made reservoirs and groundwater basins for use year-round by communities, farms and businesses.

Climate change could significantly reduce the snow pack in the future. According to some scenarios, the Sierra snowpack could diminish by as much as 80% by the end of this century, vastly reducing the state's water storage capacity and creating a major challenge for our water supply system in coming decades.

Since our existing reservoirs and flood control facilities were built to accommodate gradual runoff of melting snow, these changes could also have a major impact on our ability to protect communities and farms from floods.

In addition, climate change appears to be causing sea level to rise in some areas. In California, sea level rise could place additional pressure on the Delta's aging levees, putting at risk the water supply for about 23 million Californians and millions of acres of irrigated farmland. It could also affect sensitive ecosystems, and threaten coastal groundwater basins.