



Global Warming's Impact on California

California Climate Choices

A Fact Sheet of the Union of Concerned Scientists

Emissions Scenarios*	Summary of Projected Global Warming Impact, 2070 to 2099 (as compared with 1961–1990)	Statewide Temperature Rise
Higher Emissions: Rapid, fossil-fuel intensive growth	<ul style="list-style-type: none"> • 90% loss in Sierra snowpack • 22–30 inches of sea level rise • 3–4 times as many heat wave days in major urban centers • 4–6 times as many heat-related deaths for major urban centers • 2.5 times more critically dry years • 20% increase in energy demand 	Higher Warming Range: 8–10.5°F
Medium-High Emissions: Primarily fossil-fuel dependent growth with improvements in energy efficiency	<ul style="list-style-type: none"> • 70–80% loss in Sierra snowpack • 14–22 inches of sea level rise • 2.5–4 times as many heat wave days in major urban centers • 2–6 times as many heat-related deaths in major urban centers • 75–85% increase in days conducive to ozone formation • 2–2.5 times more critically dry years • 10% increase in electricity demand • 30% decrease in forest yields (pine) • 55% increase in the expected risk of large wildfires 	Medium Warming Range: 5.5–8°F
Lower Emissions: Less fossil-fuel dependent growth with heavy investment in cleaner technologies	<ul style="list-style-type: none"> • 30–60% loss in Sierra snowpack • 6–14 inches of sea level rise • 2–2.5 times as many heat wave days in major urban centers • 2–3 times as many heat-related deaths for major urban centers • 25–35% increase in days conducive to ozone formation • Up to 1.5 times more critically dry years • 3–6 % increase in electricity demand • 7–14% decrease in forest yields (pine) • 10–35% increase in the risk of large wildfires 	Lower Warming Range: 3.0–5.5°F

*Emissions scenarios defined by the Intergovernmental Panel on Climate Change.
 Source: Cayan, D., A. Luers, M. Hanemann, G. Franco, and B. Croes. 2006. *Climate Change Scenarios for California: an Overview*. California Climate Change Center report.

The More Global Warming Emissions are Reduced, the Less Severe the Consequences Will Be

CALIFORNIA HAS A CHOICE: continue emitting large quantities of global warming pollutants from its cars, power plants, and factories, or be a climate leader by making significant cuts in emissions and slowing global warming.

Heat-trapping emissions have to be greatly reduced in order to avoid the most severe consequences of global warming. If the industrialized world were to follow California's lead of reducing emissions 80 percent below 1990 levels by 2050,

and industrializing nations followed thereafter, global emissions would remain in or below the lower emissions scenario (see table above), thus increasing the likelihood that California and the world would be on track to avoid the more severe effects of climate change. Emission reduction targets such as those set by the state of California could create the incentives and spur innovation necessary to lead a global transition to cleaner and more resource-efficient technologies. ■



Bureau of Land Management



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