Climate Change in California
Science for a healthy planet and safer world.

Union of Concerned Scientists
Global Warming - It's Now...
... and we need to act very fast

STAYING BELOW 2°C: THE CHOICES WE FACE

With current pledges on the table to cut emissions, we are heading to a 3.3°C warming future. No further action before 2020 will limit society’s choices. As temperatures rise, so do the impacts.
California
The Sierras Are Warming Faster
Climate Change: Stressing Our Water Systems

What are the Expected Impacts from These Changes?
Climate change is already having a profound effect on California’s water resources as evidenced by changes in snowpack, river flows, and sea levels. Scientific studies show these changes will increase stress on the water systems in the future. Because some level of climate change is inevitable, the water systems must be adaptable to change.

The impacts of these changes will gradually increase during this century and beyond. California needs to plan for water system modifications that adapt to the following impacts of climate change:

Water Supply
- Changes in river flow impacts water supply, water quality, fish, and recreation activities.
- A reduction of snowpack will change water supply.

Ecosystem
- Forests, important contributors to water supply and quality, will be more vulnerable to pests, disease, changes in species composition, and fire.
- Increases in water temperature and reductions in cold water in upstream reservoirs may hurt spawning and recruitment success of native fish.
- Lower streamflows will tend to concentrate urban and agricultural runoff, creating more water quality problems.

Coast & Delta
- Increased salinity in the Delta will degrade drinking and agricultural water quality and alter ecosystem conditions.
- Higher water temperatures will make the Delta intolerable to some native species and also more attractive to some non-native invaders that may compete with natives.
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Sea level rise threatens coastal communities and infrastructure, in particular, the water system in the Sacramento-San Joaquin Delta where the existing Delta levees were not designed or constructed to withstand these higher water levels.

Water & Power Operations
- Operation of the water system for urban, agricultural, and environmental water supply and for flood management will become increasingly difficult because of the decisions and trade-offs that must be made.
- Water supply reliability will be compromised.
- California’s hydroelectric power generation may be less reliable; at the same time, higher air temperatures may increase energy consumption through increased use of air conditioning.
- Warmer temperatures will affect water demand.
- Increased flooding potentially causes more damage to the levee system.
- Higher temperatures and changes in precipitation will lead to droughts.
Climate Change Impacts on California Water Supply

**Winter**
- **Historical**: high snowpack, canals deliver water from reservoir, reservoir slowly fills with snowmelt
- **2100**: low snowpack due to high temperatures, spillway in use to avoid overflow, more rain + flooding

**Summer**
- **Historical**: verdant landscape
- **2100**: drought + empty reservoir
Ten Years of Pioneering Climate Policy

AB 32 - 2006
SB 32/AB 197 - 2016
What Else is California Doing?

- 50% Renewable Portfolio Standard
- Zero Emission Vehicle (ZEV) Rule
- Local Government Actions
- Doubling Building EE Standards
- Green Building Designs
- Cap and trade (allowance auction)
- SB 535 Low-Carbon Community $
- Carbon Energy Procurement Standards
- Low Carbon Fuel Standard
- Energy Efficient Appliances
- And much more...
The concept of global warming was created by and for the Chinese in order to make U.S. manufacturing non-competitive.
UNCERTAINTY AHEAD
California Climate Leadership

Powering the New Economy
Climate Change Is Not Partisan
UNLESS someone like you
cares a whole awful lot,
nothing is going to get better.
It’s not.

—The Lorax
Thank You