Californias Amazing Water

Video Supplement

A Climate of Change

Recommended Grade Level 9–12

NOTE: It is strongly recommended that this video not be watched on its own and that a follow-up discussion that addresses solutions—including both adaptation and mitigation—be held.

Suggested Activities:

1. Ask students to identify at least four pieces of evidence cited in the film that indicate that the climate is changing:
   - Higher temperatures
   - Increased minimum temperatures (at night, in winter, and at higher elevations)
   - Rising snow line
   - Decreased snowpack
   - Earlier spring runoff
   - Sea level rise
   - Changes in the timing of bird migrations
   - Changes in the timing of plant blooms
   - Increase in extreme weather events
   - Increase in wildfires

2. Ask students to identify at least four impacts that climate change will have in California:
   - Change in California's hydrology
   - Precipitation that falls as rain instead of snow
   - Less snowpack for summer water demands
   - Reduced water supply
   - More intense precipitation in a short time
   - Higher peak flows in rivers and streams
   - More erosion
   - Increased risk of floods
   - Disappearance of snowpack at lower and mid-elevations
   - More extreme weather events
   - More heatwaves
   - More droughts
   - Droughts will be more extreme
   - Sea level rise
   - Salt water contamination of groundwater/coastal freshwater aquifers (continued)

3. Have students select one of the impacts of climate change in California and research how it will impact one of the following sectors: Agriculture, Health and Safety, Water Quality, Water Supply, Energy, or Wildlife Habitat.

4. Discuss climate change solutions and how students can get involved. Additional research may be needed. Items with an asterisk are mentioned in the video.
   - Mitigation: actions that limit the magnitude or slow the rate of climate change
     i. Reduce consumption of or phase out fossils fuels like coal, oil, and gas
     ii. Switch to low-carbon energy sources like nuclear, solar, and wind
     iii. Restore and maintain forest, meadow and wetland ecosystems
     iv. Invest in low-carbon technologies
     v. Reduce methane emissions by diverting food and/or yard waste from landfills
     vi. Improve public transportation and bicycling infrastructure
   - Adaptation: steps taken to help offset or respond to the effects of climate change
     i. Increase water storage
     ii. Modify dam operations*
     iii. Increase water efficiency in residential, agricultural, municipal, and industrial sectors
     iv. Increase energy efficiency in all sectors
     v. Improve flood management systems*
     vi. Review building codes and city General Plans to account for increase flood risk and/or sea level rise
     vii. Restore and protect ecosystems
     viii. Increase both surface and groundwater storage capacity

You can find more on climate change in California, including adaptation strategies, at water.ca.gov/Water-Basics/Climate-Change-Basics and more on mitigation actions at climateinterpreter.org/resource/nnocci-climate-change-solutions-bank.

5. Project-based Learning Opportunity: Have students work in teams or as a class to identify a way that they can help mitigate climate change either at their school or in their community and complete a project that does so.