



California's Fifth Climate Change Assessment  
*Draft Research Topics*

Water Management

This category includes California's Fifth Climate Change topic suggestions regarding climate impacts on residential, agricultural, and industrial water use and the physical and social systems that manage ground and surface water supply, as well as water quality (including contamination, salinity, and desalination). This includes building resilience and adapting to these impacts. **Each roundtable discussion includes considerations for equity, traditional knowledges, governance, and economics and financing.**

| Draft Research Topics & Gaps for Discussion |  |
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| WM 1  | Improved understanding of how adjudicated basins are, and can be, managed for drought.   |
| WM 2  | Impacts of drought on potable ground water supply.   |
| WM 3  | Impact of water conservation efforts on the Salton Sea water flows, including how changes to the Salton Sea water levels affect human health.  |
| WM 4  | Drought-related impacts on landscape transformation in residential areas, including actions to ensure all communities have access to improved water efficiency and drought resilience.   |
| WM 5  | Local climate feedbacks of carbon and hydrologic cycles, including water availability and increased temperatures, and the effects on air quality and vegetation mortality.   |
| WM 6  | The role of wetlands in carbon storage, water supply, and water quality.   |
| WM 7  | Equitable and effective water resources management under likely climate change scenarios and the effects on groundwater basins (and groundwater-surface water interactions).   |
| WM 8  | Exploring levels of significant groundwater rise and associated planning needs.  |
| WM 9  | Effects of aridity (rising temperatures and instances of drought) on groundwater recharge potential across California. What locations are most vulnerable to declines in recharge? What practices can be deployed to mitigate the impact of aridity on groundwater recharge? |
| WM 10                                       | Impacts of sea level rise on salination of underground aquifers throughout California. Which areas, structures, and communities are most vulnerable?   |
| WM 11                                       | Alternative strategies to restore connections between hydrologic systems (through built or natural means) to promote groundwater recharge and environmental flows.   |
| WM 12                                       | Impacts of changing precipitation patterns and ensuing exposures to contaminants in water.   |



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| WM 13 | Exploring how different water user types respond to moderate increases in salinity at their intakes.  |
| WM 14 | Socioeconomic and ecological benefits and costs of alternative salinity management scenarios with consideration for sea level/groundwater rise, changes to water temperature, and droughts of increasing timescales.  |
| WM 15 | Impacts of sea level rise on inland waterways, including saltwater intrusion, groundwater contamination, groundwater inundation, changes in tidal reach, and the combined flood risks from tides, surges, and river discharges. Which communities across California are most vulnerable and at risk to these impacts? |
| WM 16 | Precipitation and snowfall impact on local watersheds in the Southern California mountain ranges.   |
| WM 17 | Geologic impacts and hazards from long-term groundwater withdrawal and subsidence.  |
| WM 18 | Effects of mountain meadow restoration on water supply.   |
| WM 19 | Economic impacts of changes in water supply.  |
| WM 20 | Providing guidance for local agencies on how to best incorporate climate change into water supply planning.   |
| WM 21 | Future residential, commercial, and industrial water demand change under likely climate change scenarios.   |
| WM 22 | Impacts of wildfires and wildfire management (e.g., phosphate-based retardants) on hydrology and water quality.   |