

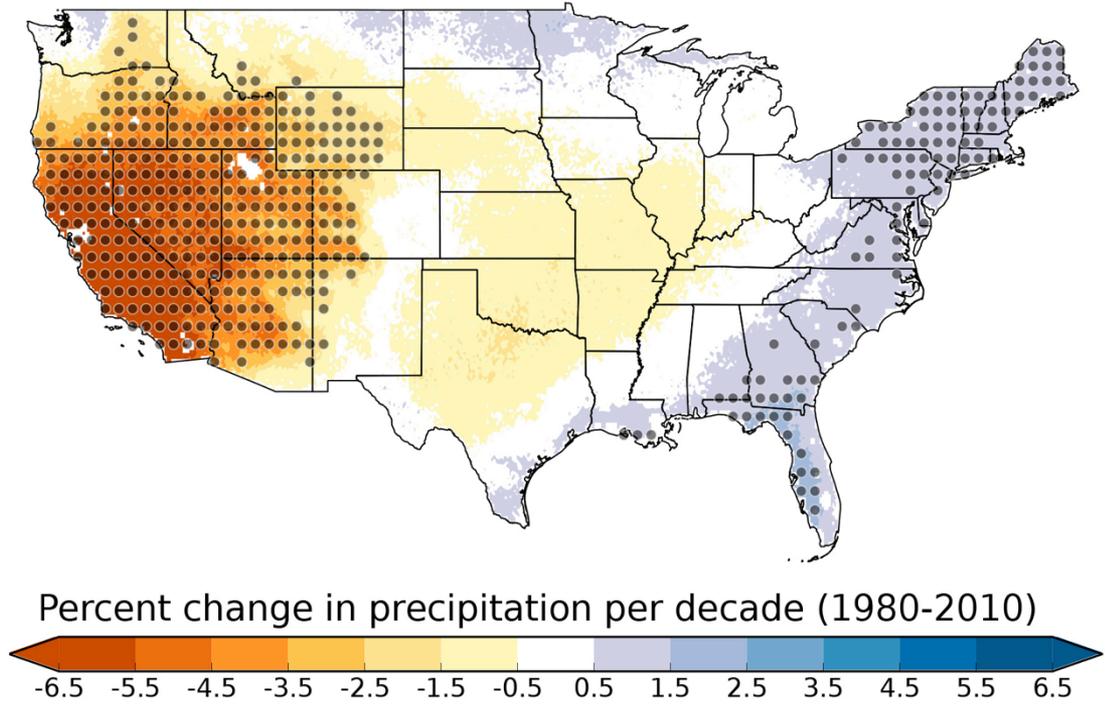
Climate Change and Resilient LA

Impacts on the Southwest U.S.

This hot and dry region will get hotter and drier.

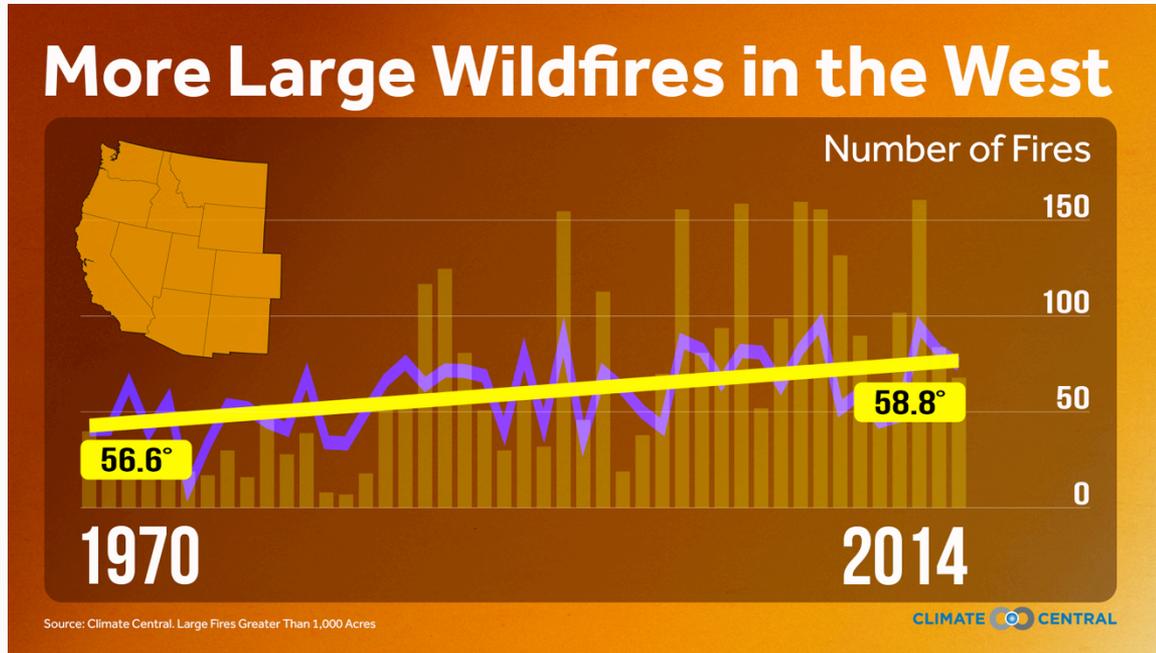
Drying the Southwest

Weather systems that bring rain are becoming more rare



Wildfires in the West

Increased temperatures and drought will result in more fuel for wildfires in the form of dead trees and other plants.

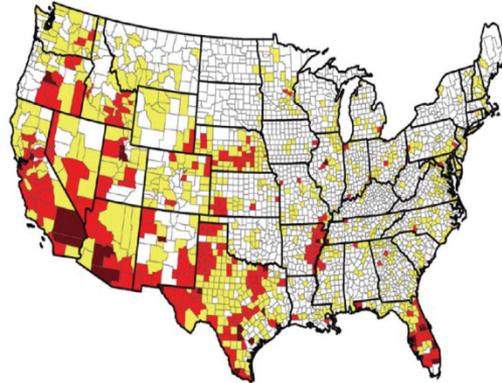


Drying Out the Southwest

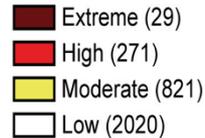
Water supply reliability is expected to decrease due to less snowpack, earlier snowmelt, and less streamflow.

Water Supplies Projected to Decline

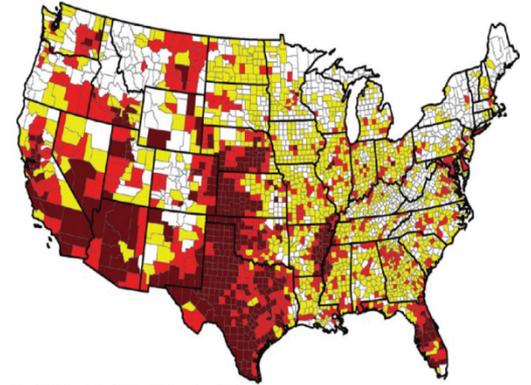
No Climate Change Effects



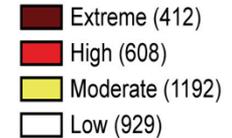
Water Supply Sustainability Risk Index (2050)



Climate Change Effects



Water Supply Sustainability Risk Index (2050)



Where's the water?

Water supply reliability is expected to decrease due to less snowpack and streamflow, affecting cities, agriculture, and ecosystems alike. Farmers, energy producers, urban communities, and ecosystems will need to compete harder for water



source:National Review

How we are measuring change at home

- Cal-Adapt is an online tool that uses data generated by regional climate models to project—but not predict—the impacts climate change will have based on two emissions scenarios:
 - “Low-emissions” scenario: heat-trapping emissions peak around mid-century, then decline
 - “High-emissions” scenario: heat-trapping emissions increase through the 21st century

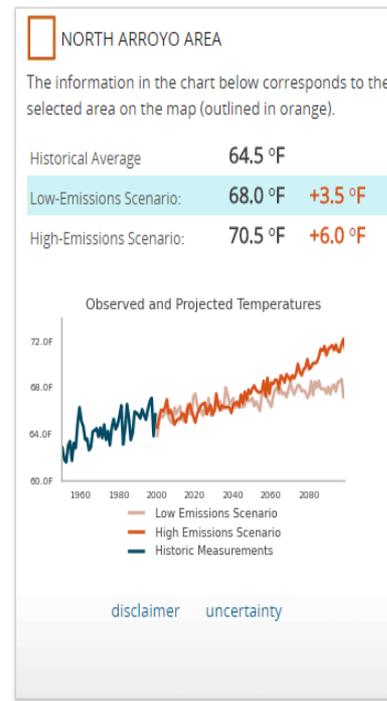
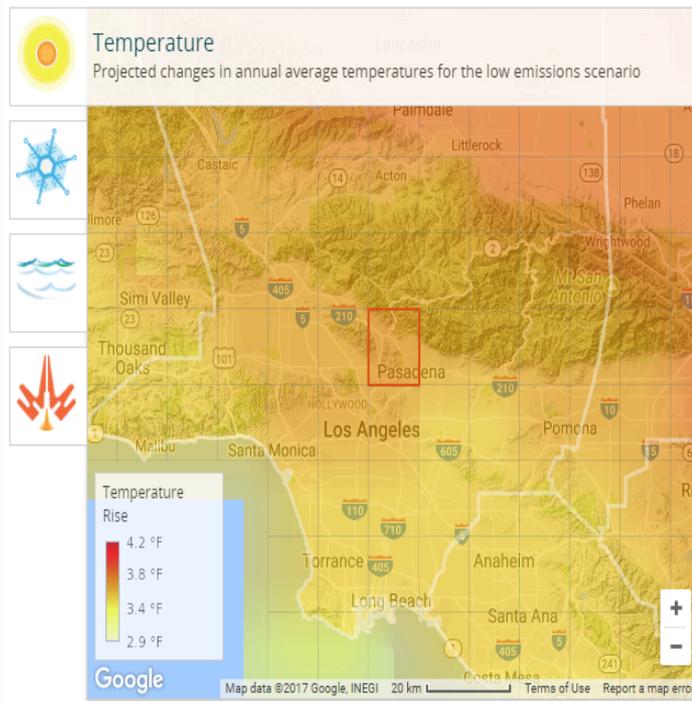
The screenshot shows the Cal-Adapt website interface. At the top left, the logo "cal-adapt" is displayed in white on a dark blue background. Below it, the text "Visit our new website at beta.cal-adapt.org" is visible. The main content area is a grid of six interactive panels:

- Video Tour:** "VIEW THE DIFFERENT TOOLS AND DATA AVAILABLE IN CAL-ADAPT" with a video player showing a map of California.
- Explore Climate Tools:** "INTERACTIVE MAPS & CHARTS" with icons for a sun, a gear, a water drop, and a flame.
- About Cal-Adapt:** "SUBSCRIBE TO THE CAL-ADAPT NEWSLETTER" and "WHAT'S NEW?", "WHAT'S TO COME?", and "FAQS" sections.
- Access Data:** "ACCESS THE RAW DATA USED IN CAL-ADAPT" with a download icon and text: "Select and download data in a variety of tabular and GIS formats".
- Resources:** "RESEARCH, PUBLICATIONS & LINKS" with a book icon and text: "Find out more about climate change research in California, explore peer reviewed publications and learn more about how to use climate projections".
- Community:** "CAL-ADAPT BLOG, CLIMATE CHANGE NEWS & EVENTS" with a group of people icon and text: "Find out more about how climate change in California is relevant to your community and share your thoughts and findings".

At the bottom, it says "Site developed by: Geospatial Innovation Facility" and "Cal-Adapt is a product of the Public Interest Energy Research (PIER) program". There are also social media icons for Twitter and Facebook (Like 150) and a copyright notice: "Copyright © 2017 California Energy Commission, All Rights Reserved. State of California, Edmund G. Brown Jr., Governor".

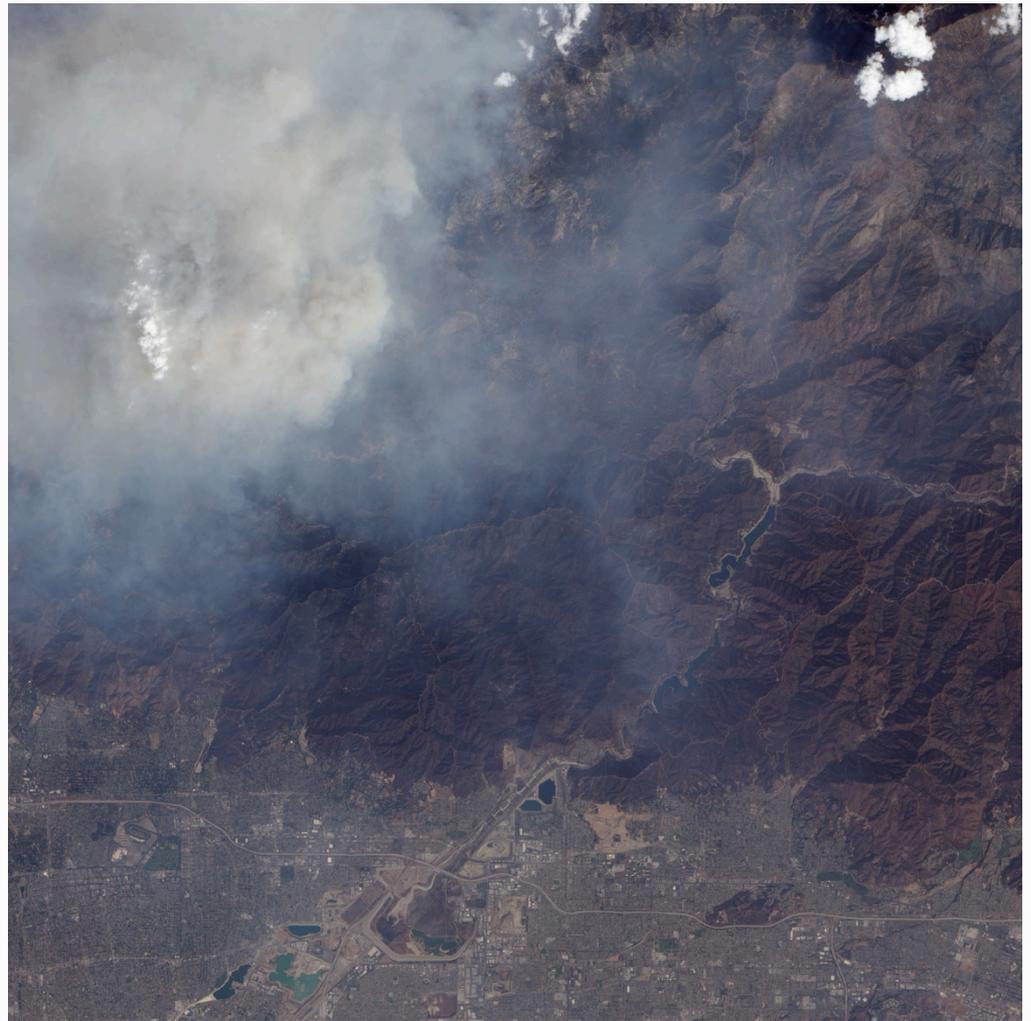
Temperature Increase in Los Angeles

- Under “low-emissions” scenario, average annual temperatures increase by 3.5°F
- Average annual temperatures projected to increase by 6°F under a “high-emissions” scenario



Fires are affecting CWH Programs

- Increase in the potential amount of area burned by wildfires 0.54-0.87 times under both emissions scenarios
- Our sampling sites could get closed due to fires



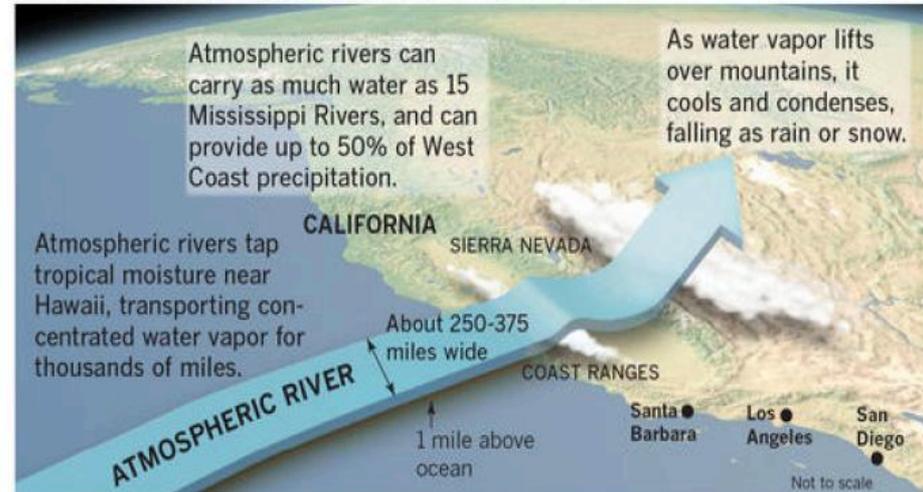
How Monitoring and Recreating Sites are Affected by Climate Change

- CWH monitors at swimming holes and kayak areas along the LA River as part of the [Los Angeles Regional Watershed Monitoring Program \(LARWMP\)](#)
- Water samples are collected to determine amount of bacteria in the water
- Often the concentration of bacteria increases at a site when the streamflow is low
- Climate change is projected to decrease the amount of streamflow in California

Atmospheric Rivers affect the LA River Watershed and our Data

- What we're likely to see is prolonged periods of drought followed by intense precipitation events called "atmospheric rivers"
- California counts on these events for about a third of its annual water supply
- However, large events cause flood risks throughout the state
- The peak season for these storms is lengthening due to climate change, leading to a longer winter flood hazard season
- California experienced a few of these in January and February 2017, leading to lots of streamflow

How an atmospheric river works



Sources: National Weather Service, Scientific American

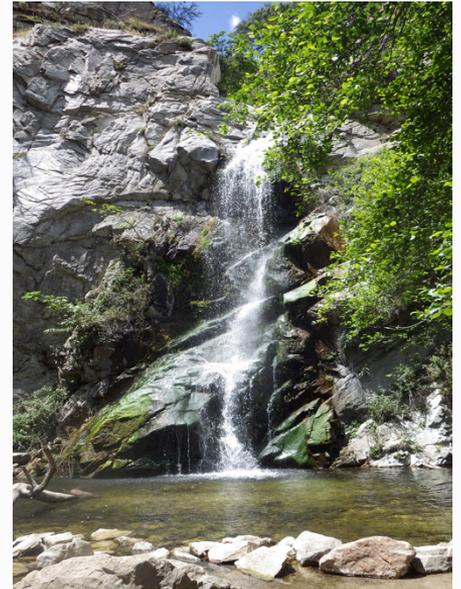
@latimesgraphics

Observations of Drought vs. Downpours



Sturtevant Falls June 2016 vs. June 2017

Around this time of the year last summer, the falls at Sturtevant were barely a trickle as another year of drought on top of the previous six had left it dry before summer even ended, this year, Sturtevant Falls is flowing strong. The drought that California has been stuck in for the better part of a decade ended as we experienced a profound wet season this winter that increased snowpacks and reservoirs. CWH's sampling sites are once again full of water and people are diving in to enjoy the the waters. However, with climate change, this cycle of drought and heavy rains are set to increase leaving many recreators wondering if they will be able to enjoy their favorite natural resources in the years to come.



-Christina Vallejo, CWH Research Associate

How CWH is Fostering Resilience

The Council is involved in increasing LA's local groundwater supply through its [Living Laboratories](#) program. We monitor **green infrastructure** projects and educate communities on their multiple benefits of reduced water pollution and flooding

Green infrastructure: a landscape design approach that mimics the slow, spread, and sink functions of a natural watershed by capturing, cleaning, and infiltrating stormwater runoff rather than allowing it to flow off hard surfaces and collect pollutants as it goes.



Sources

1. <http://nca2014.globalchange.gov/highlights/regions/southwest>
2. <https://ca.water.usgs.gov/pubs/2011/climate-change-atmospheric-rivers-floods-california-dettinger.pdf>
3. <http://curious.kcrw.com/2013/11/part-3-where-does-your-water-come-from>
4. <http://cal-adapt.org/tools/>
5. <http://www.climatecentral.org/gallery/graphics/hotter-years-more-fires>
6. <https://www2.ucar.edu>