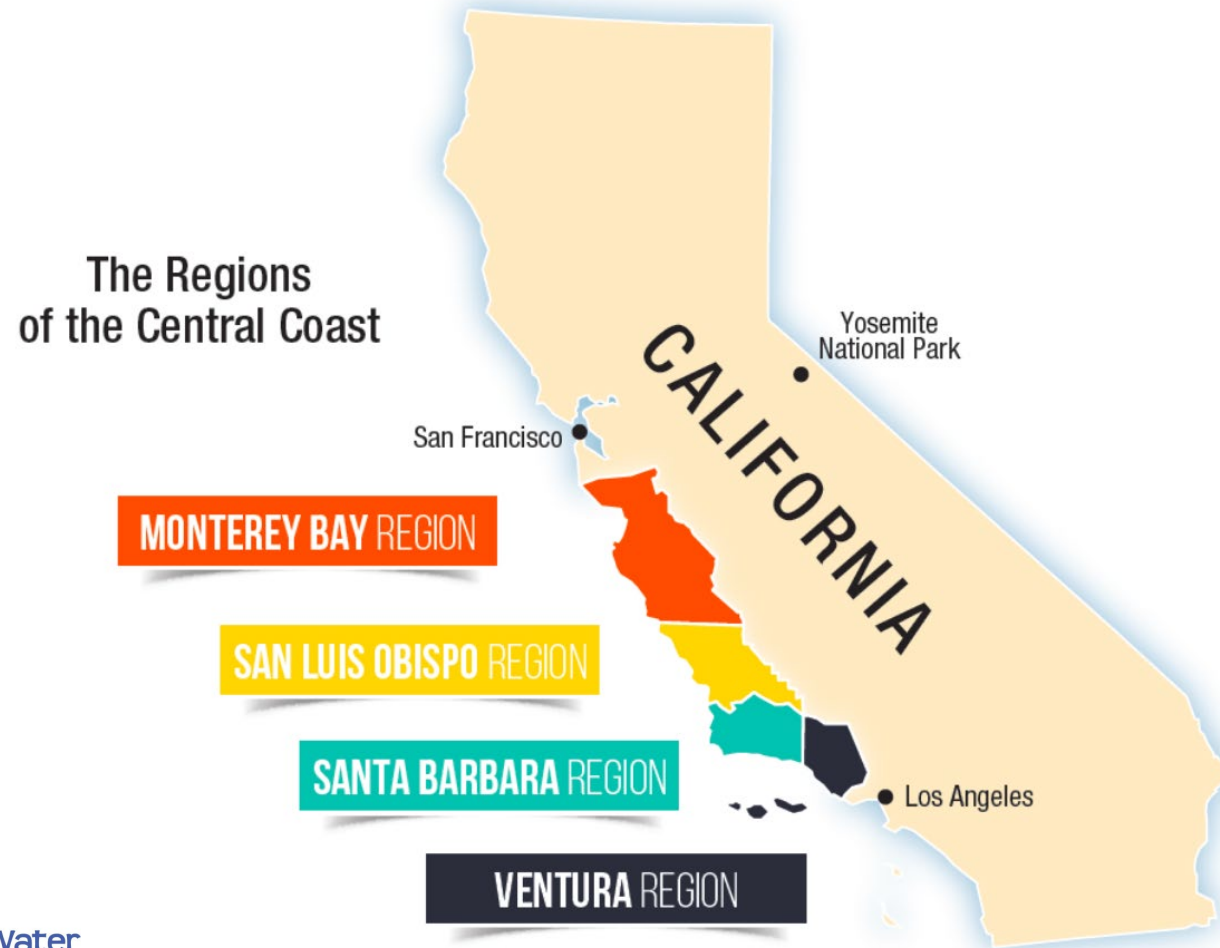


# Climate change impacts on water resources of the Monterey Bay Region of California

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# S<sup>2</sup>H<sub>2</sub>O Guidance on How to Create your Own Story

## Students for Sustainable Water

A Climate Water Education Initiative

[Home](#) [Empowering Students](#)  
[Global Network](#) [Educational Materials](#)  
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### Global Network

Through education and engagement, today's students will champion sustainable solutions to the global water crisis. To find sustainable solutions, the world needs to hear the voice of the current generation of student through inspirational stories.

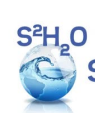
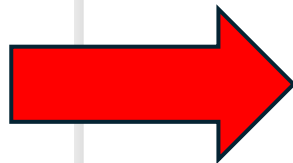
Join our global network by creating a story about your local water resources, water related hazards (e.g., flooding, drought, pollution, and wildfire), potential impacts of climate change, and climate resilience and adaptation. We encourage students and educators to work together to create stories based on best scientific research and understanding, policy decisions, environmental justice, management actions, and personal experience.

#### Stories by our Student Network:

To view stories created by our student network and other example stories about water and climate change, please see the [growing list of stories here](#).

#### How to Create and Share your Own Story?

To learn how to create and share your story on our Students for Sustainable Water platform, please see our [Story Guidance Document](#).



# S<sup>2</sup>H<sub>2</sub>O Guidance on How to Create your Own Story



- If you have questions about an appropriate software or platform, please ask us via our [Contact page](#).

## Example Story Template

The following are example elements to consider including in your story. Not all elements listed here will be relevant to your story and you may have other ideas not listed here.

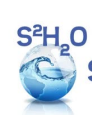
1. Introduction
  - a. Where you live
  - b. Describe your current climate
  - c. Explain where your water supply comes from
  - d. Describe something unique about the environment of your hometown that students in other parts of the world would find interesting.
2. How will climate change impact you:
  - a. Climate or weather
  - b. Water supply or water quality
  - c. Natural hazards (e.g., flooding, drought, wildfire, etc.)
  - d. Issues surrounding environmental justice, such as access to drinking water, food, shelter, and health?
  - e. Have you observed any impacts yet?
3. What are water managers, scientists, policy makers doing to protect your water supply against climate change?
4. What can students (or adults) in your community do to make your water supply more sustainable and adapt to climate change?

## How to Share and Submit Your Story

Please keep in mind that your story must be created on an electronic file or public website that can be shared via a hyperlink on the [Students for Sustainable Water \(S<sup>2</sup>H<sub>2</sub>O\) website](#).

When your story is finished and ready to be shared on our S<sup>2</sup>H<sub>2</sub>O website, please send us a message on our Contact page: [Contact – Students for Sustainable Water \(s2h2o.org\)](#)

- We prefer that messages are sent by the supervising adult (educator or parent/guardian).
- In your message, please provide some information about your school or class.
- Please provide your email because we will send you a link to a secure file sharing site where you can upload your file.
- If you created a story on a public website, please send us the URL in your message.
- We will review all stories for appropriate content.
- We will send a confirmation email before uploading your story to the S<sup>2</sup>H<sub>2</sub>O website.



# 1. Introduction to the Central Coast & Monterey Bay Region

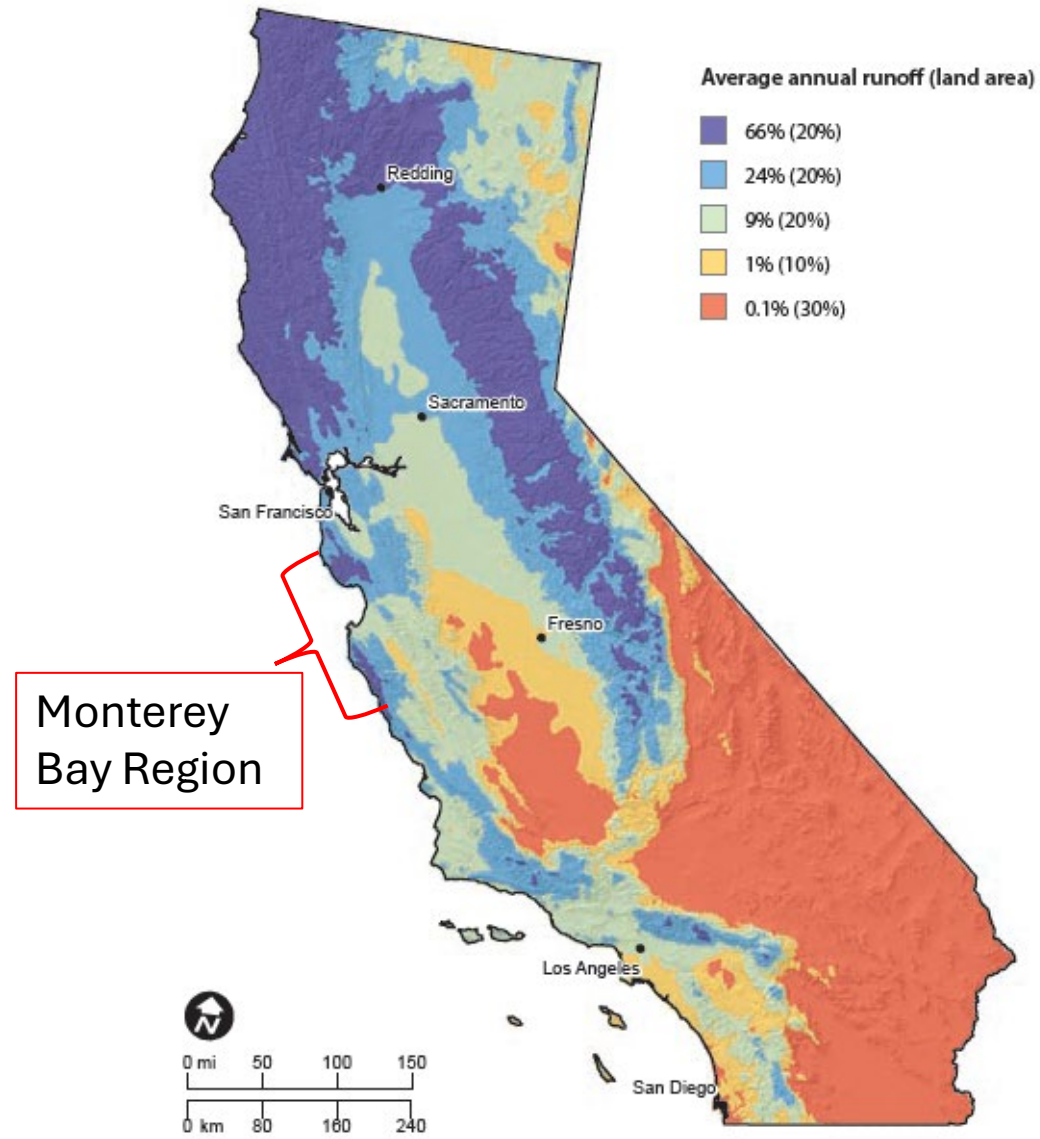
## Climate and Hydrology

### California:

- Most rainfall in north, but most people live in south

### Monterey Bay Region:

- Mediterranean climate with mild, wet winters and dry summers
- Average rainfall: 30 inches (76 cm)
- Average temperature: 68 F (20 C)
- 2.3 million residents
- Rely on local water supplies



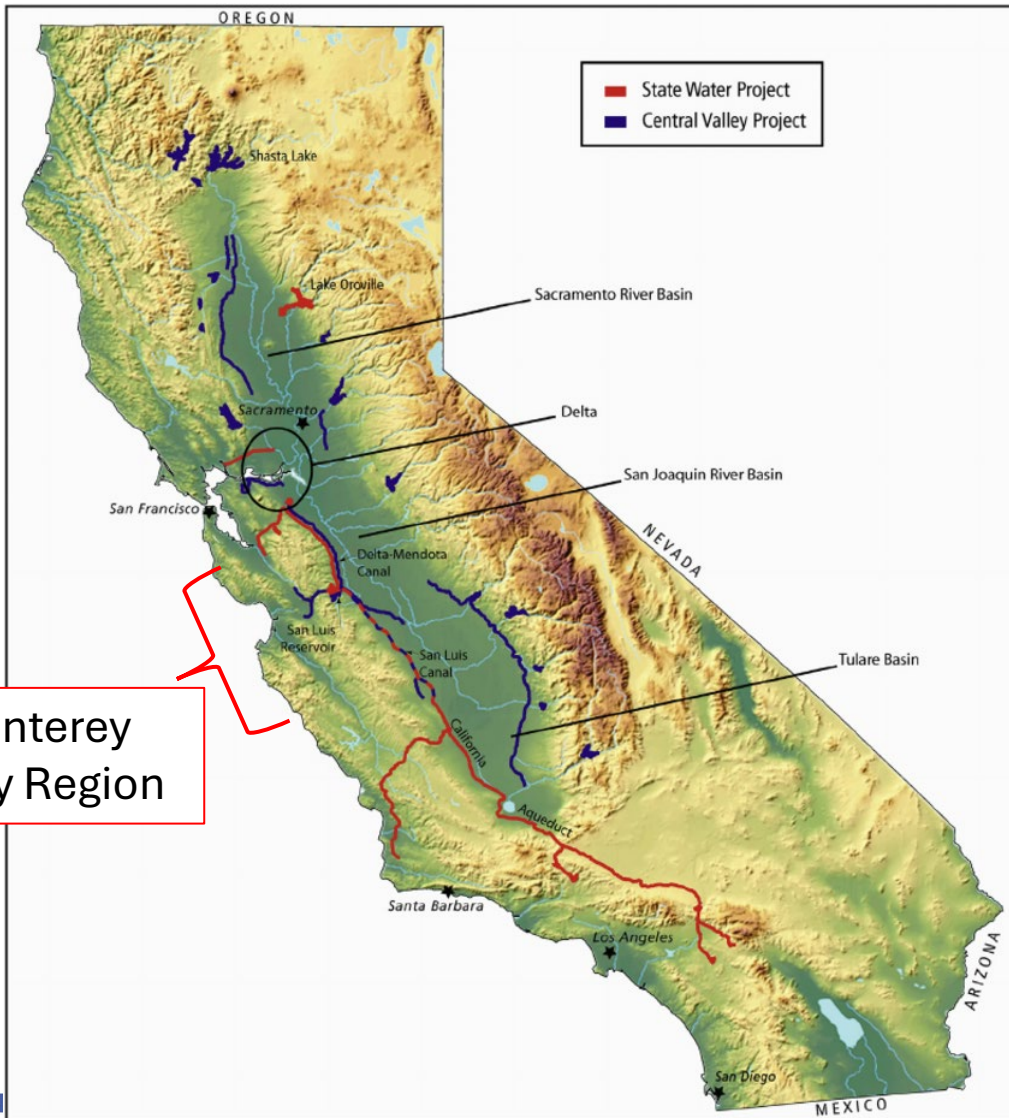
Source:  
Hanak and others, 2011



# 1. Introduction to the Central Coast & Monterey Bay Region

The region is reliant on local water sources:

- Does not receive imported water from State Water Project (SWP) or Central Valley Project (CVP)

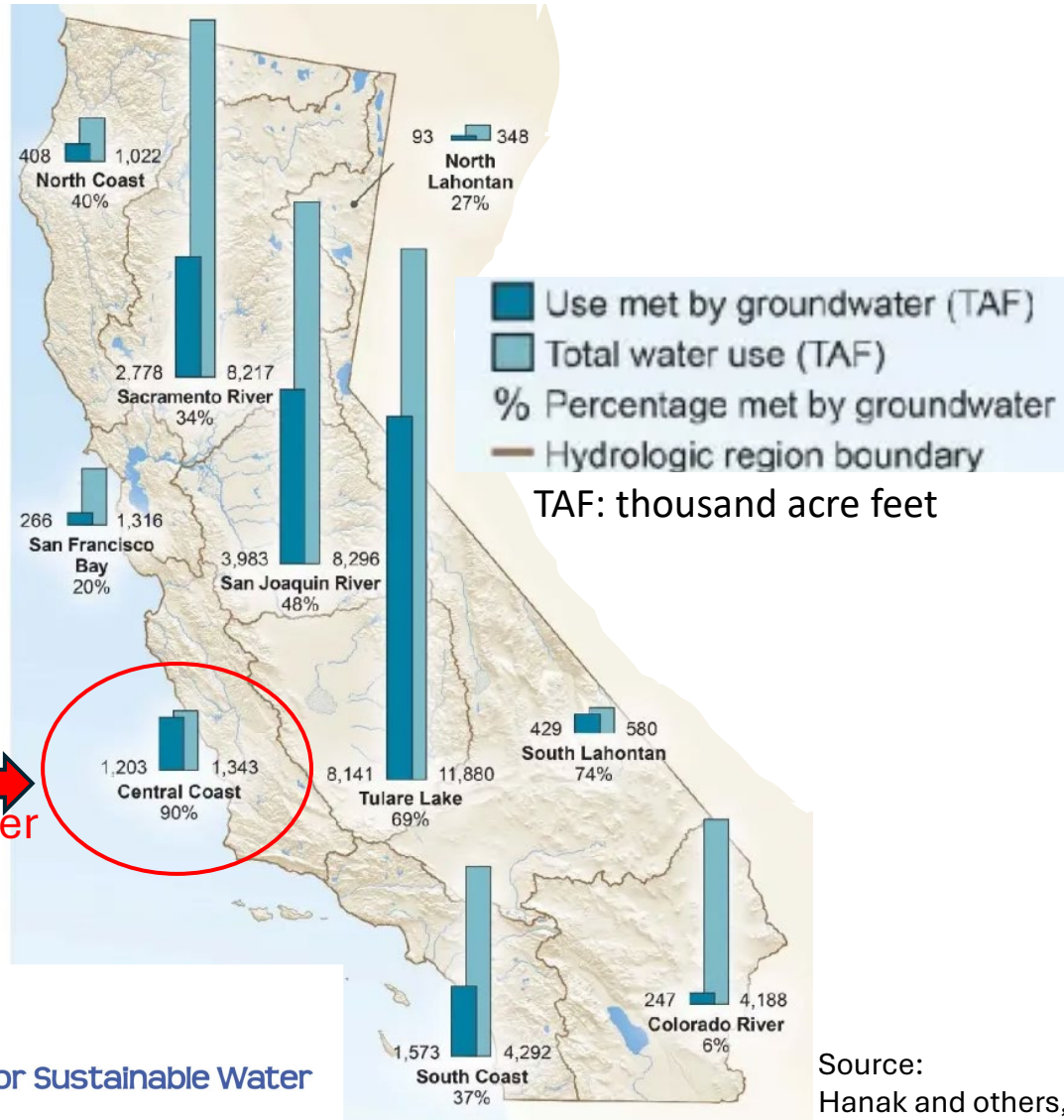




# 1. Introduction to the Central Coast & Monterey Bay Region

90% of Central Coast water use is supplied by groundwater

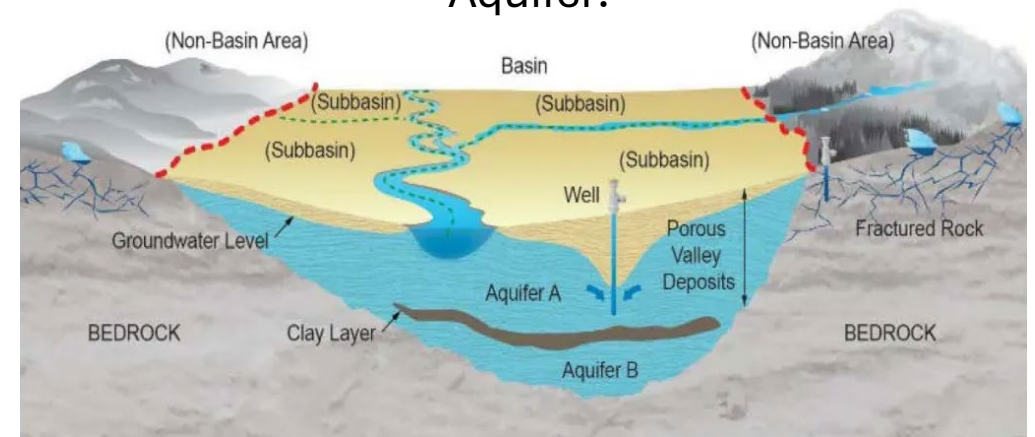
- Such a high % of groundwater use is unique across California



Groundwater well:



Aquifer:



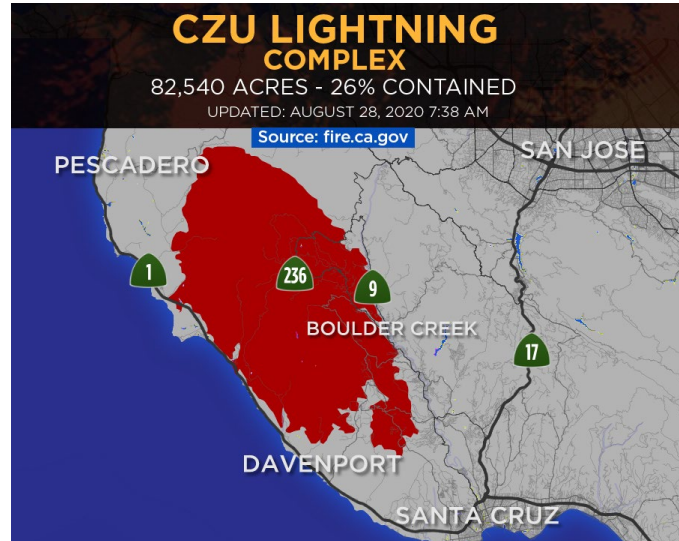
Source:  
Hanak and others, 2011

Source: Maven's Notebook, California's Groundwater (2024)

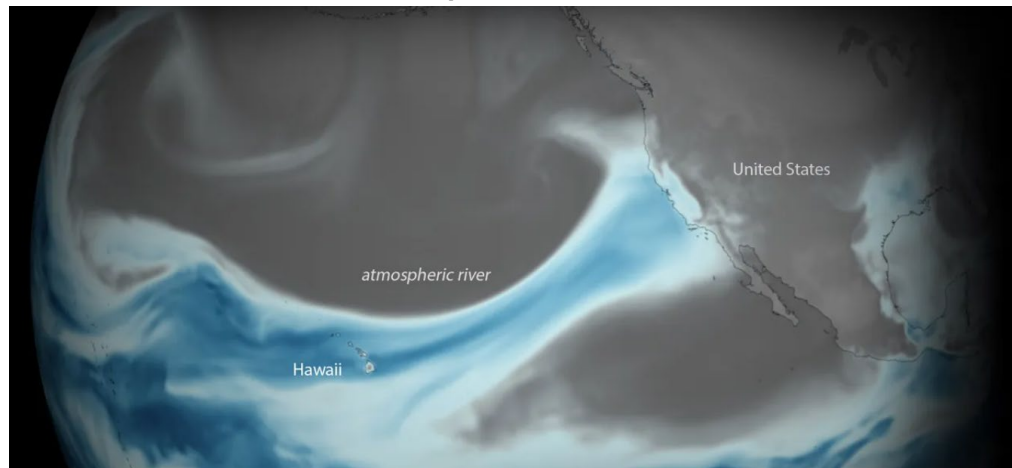
## 2. Impacts of Climate Change

### Region is Characterized Drought, Fire & Rain, Flooding

Wildfires (2020)



Atmospheric Rivers



Flooding in Santa Cruz (2023)



- Long-term trends: region is experiencing a decrease in annual precipitation and increased variability of precipitation
- Increasing “weather whiplash” – swings between very dry & very wet
- Frequent and large wildfires
- Strong winter storms from atmospheric rivers that cause flooding



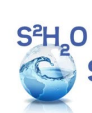
## 2. Impacts of Climate Change

### Coastal Regional with Sea Level Rise & Flooding

- Sea-level rise is projected to increase 1.1–1.9 feet by 2050, and 3.3–6.9 feet (under moderate scenarios) by the end of the century.
- Sea-level rise, combined with coastal wave and storm events, will increase coastal flooding and destruction.
- Example of damage from atmospheric rivers:
  - December 2022 storm:
    - 23 inches of rain in 10 days
    - \$27 million damage



Source: California Climate Adaptation Strategy (2024);  
Santa Cruz Local, 2023.





# 3. What Can Students do to Make the Water Supply More Sustainable to Climate Change?

## 1. Learn More about the issues

City of Santa Cruz offers free, science-based programs for students to learn more about their watersheds.



## 2. Water conservation

City offers free water saving devices:



**Showerhead**  
1.75 GPM



**Kitchen Faucet Aerator**  
1.5 GPM



**Bathroom Faucet Aerator**  
1.5 GPM



**Toilet Leak Detecting  
Tablets**



**Hose Nozzle**  
2.5 GPM



**Showerhead Control  
Valve**

## 3. Change habits with water

- Don't leave the faucet running when you are brushing your teeth or doing the dishes.
- Soak pots and pans rather than running hot water over them.
- Choose taking a shower over taking a bath, and reduce your time in the shower.
- Run only full loads in your clothes washer and dishwasher.
- Check your home often for leaks.
- Water your yard between 5pm and 10am and turn your irrigation off during the winter.
- Check you irrigation timer following a power outage to make sure it is still on schedule.
- Use a broom instead of a hose to clean to clean driveways and sidewalks.
- Turn off the hose when not in use while washing your car.
- Put mulch around your trees and plants.
- Use automatic shutoff nozzles on all outdoor water hoses.

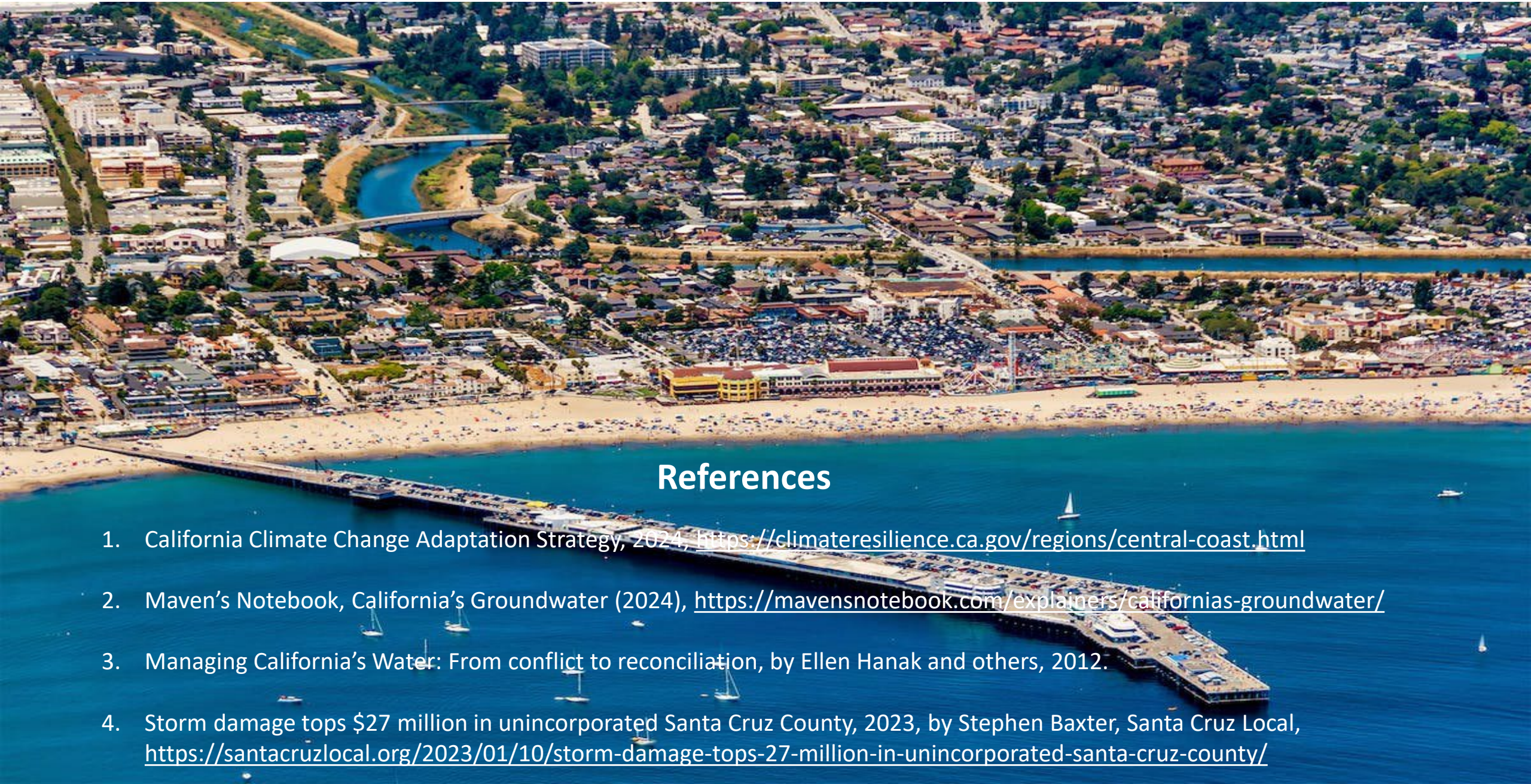


Source: City of Santa Cruz (2024)





# Thank You!



## References

1. California Climate Change Adaptation Strategy, 2024, <https://climateresilience.ca.gov/regions/central-coast.html>
2. Maven's Notebook, California's Groundwater (2024), <https://mavensnotebook.com/explainers/californias-groundwater/>
3. Managing California's Water: From conflict to reconciliation, by Ellen Hanak and others, 2012.
4. Storm damage tops \$27 million in unincorporated Santa Cruz County, 2023, by Stephen Baxter, Santa Cruz Local, <https://santacruzlocal.org/2023/01/10/storm-damage-tops-27-million-in-unincorporated-santa-cruz-county/>