

Educational Challenges

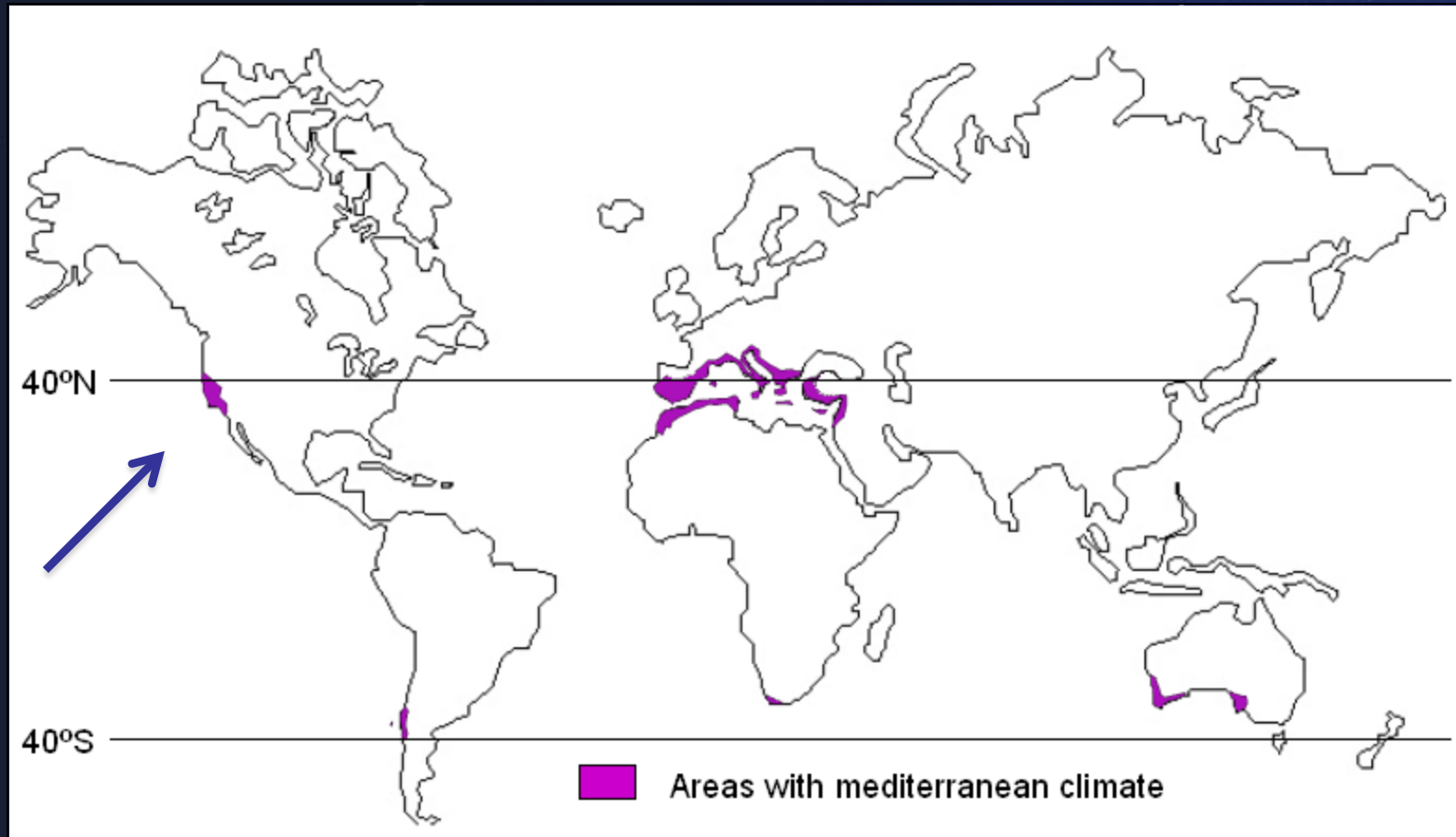
Informal Science Centers

Climate Change and America's Infrastructure:
Engineering, Social and Policy Challenges
January 30, 2013

Eric Havel
Education Manager



Mediterranean Climate Zones



Warm, dry summers and wet, cool winters

Impacts on California

- Decrease in Sierra Nevada snowpack
- Sea level rise along coast and around the SF Bay margins
- Decrease in agricultural productivity of Central Valley
- Local ecosystem changes



Climate change hits home



Adaptation strategies for the San Francisco Bay Area

Vulnerable Areas and Adaptation Strategies

- Public Safety and Health
- Transportation
- Ecosystems & Biodiversity
- Energy
- Water Management
- Sea Level Rise

Climate Programs – Past, Present, Future

- Community Conversations on Climate
 - NOAA Event
 - Keynote Speakers (Jim Hansen, Bill McKibben)
- Citizen Science Projects
 - C3 Collaboration
 - BEACON Sensor Project
- Climate Literacy Programs
 - Teacher PLC
 - IMLS Grant Proposal



Climate Programs – Past, Present, Future

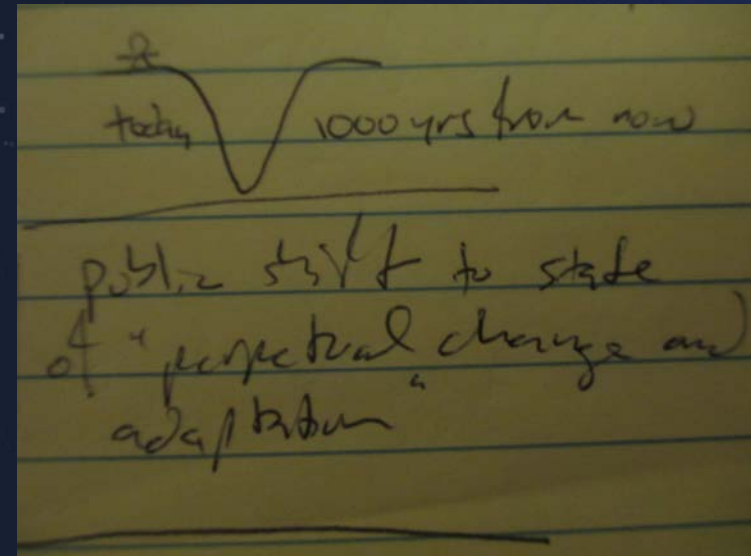
- Bill Nye's Climate Lab Exhibit
- Outdoor Education Facility
- NASA Earth Ambassador Program



The background of the slide is a deep blue space filled with stars. In the top right corner, a large, detailed image of Earth is visible, showing blue oceans and white clouds. In the bottom left corner, a brown, rocky surface resembling Mars is shown. On this surface, there is a sandcastle with two small holes for windows. An orange shovel is stuck in the sand to the left of the castle, and a small yellow and red flag is planted in the sand to the right of the castle.

What are we adapting to?

How well can humans adapt to adapting?

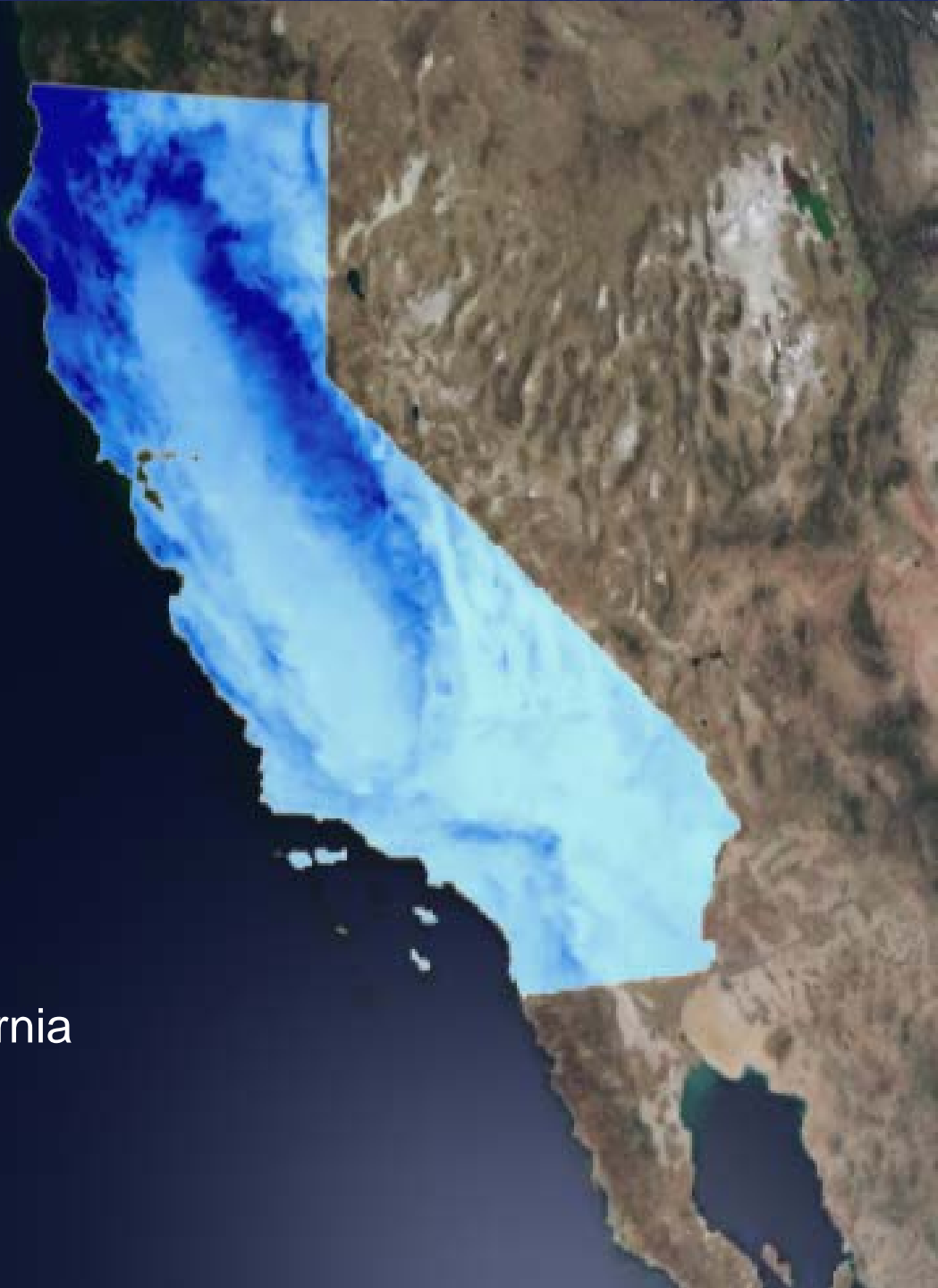




*...and how about
the rest of
Earth's ecosystems?*

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Rainfall is extremely
variable even within California
and is changing...



Chabot Project

Climate Indicator – Western Sword Fern
Polystichum Munitum

Academic Partners –

Professor Todd Dawson, UC Berkeley
Emily Limm, PhD, Save the Redwoods League

Citizen Scientists – measure fern frond numbers and lengths of local populations and compare with others in the redwood ecosystem

Long term Questions – Are sword fern frond lengths changing over time? If so, does this indicate a change in moisture levels (rainfall and/or fog drip) due to climate change?

