Mountain Climate: Variability, Predictability, and Water Supply

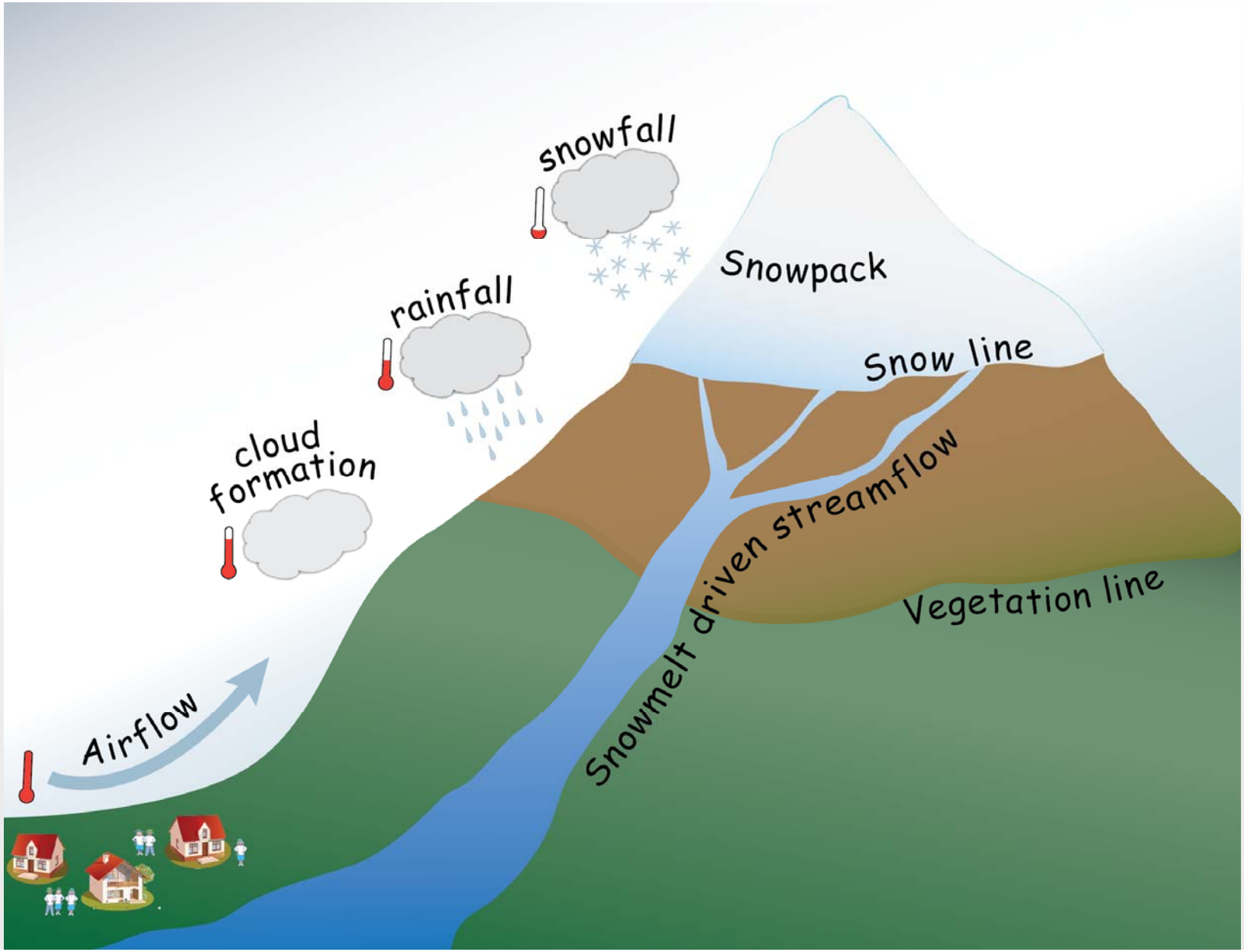
Sarah B. Kapnick, Ph.D.

NOAA Science Days

Media Presentation

March 9, 2016

Characteristics of Mountain Climate



Winter vs. Summer Water

December

July

July Stream Flow

Jackson Hole, WY

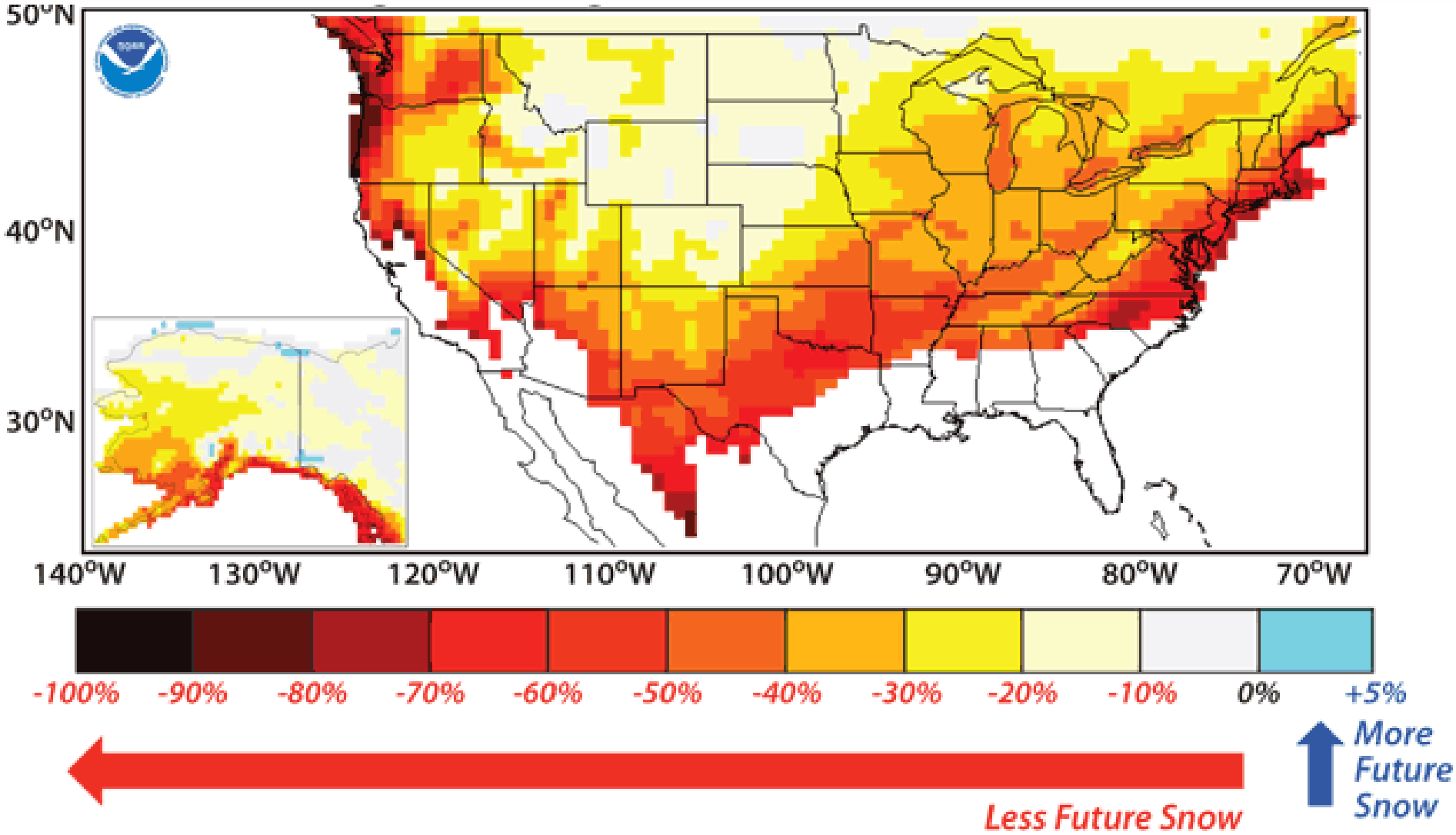
Direct Effects: Impacts on Hydrology & Hazards

Low Precipitation ***High Precipitation***

Indirect Effects: Impacts on Wildlife & People

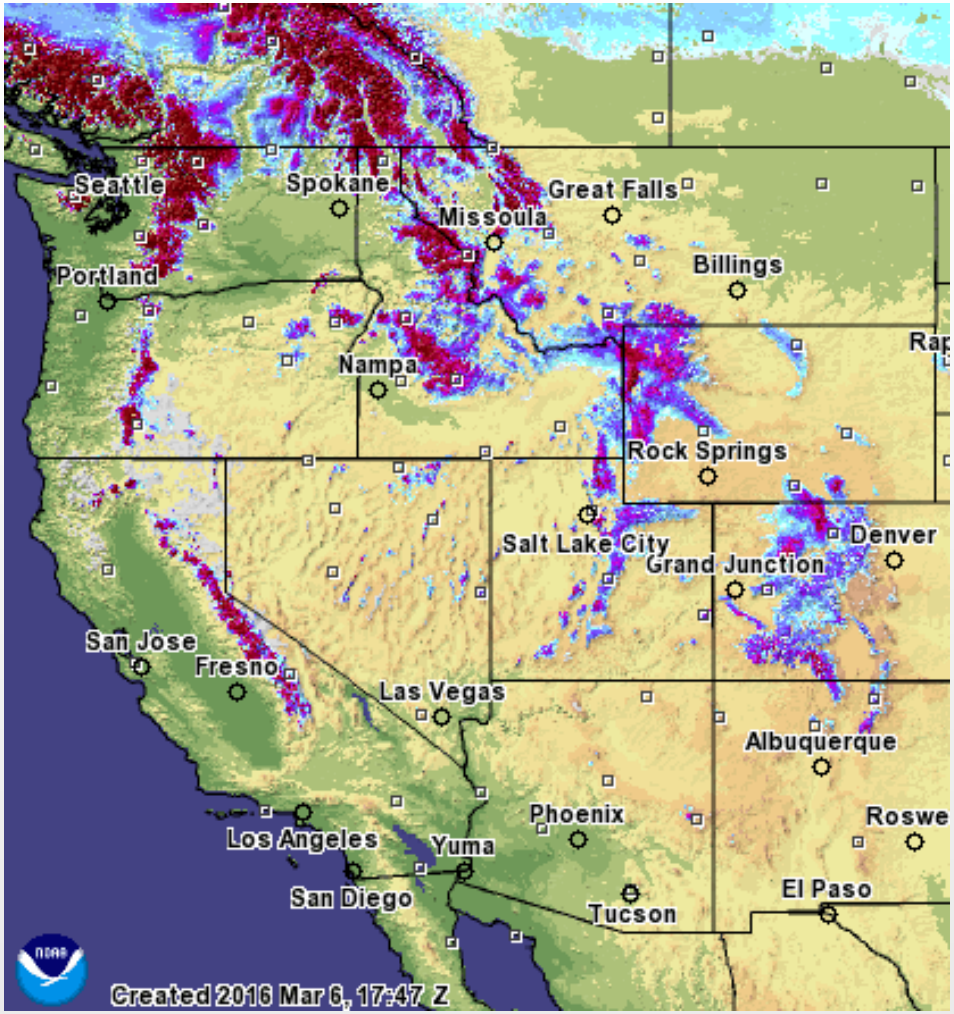
Impact of Low Snow ***Impact of High Snow***

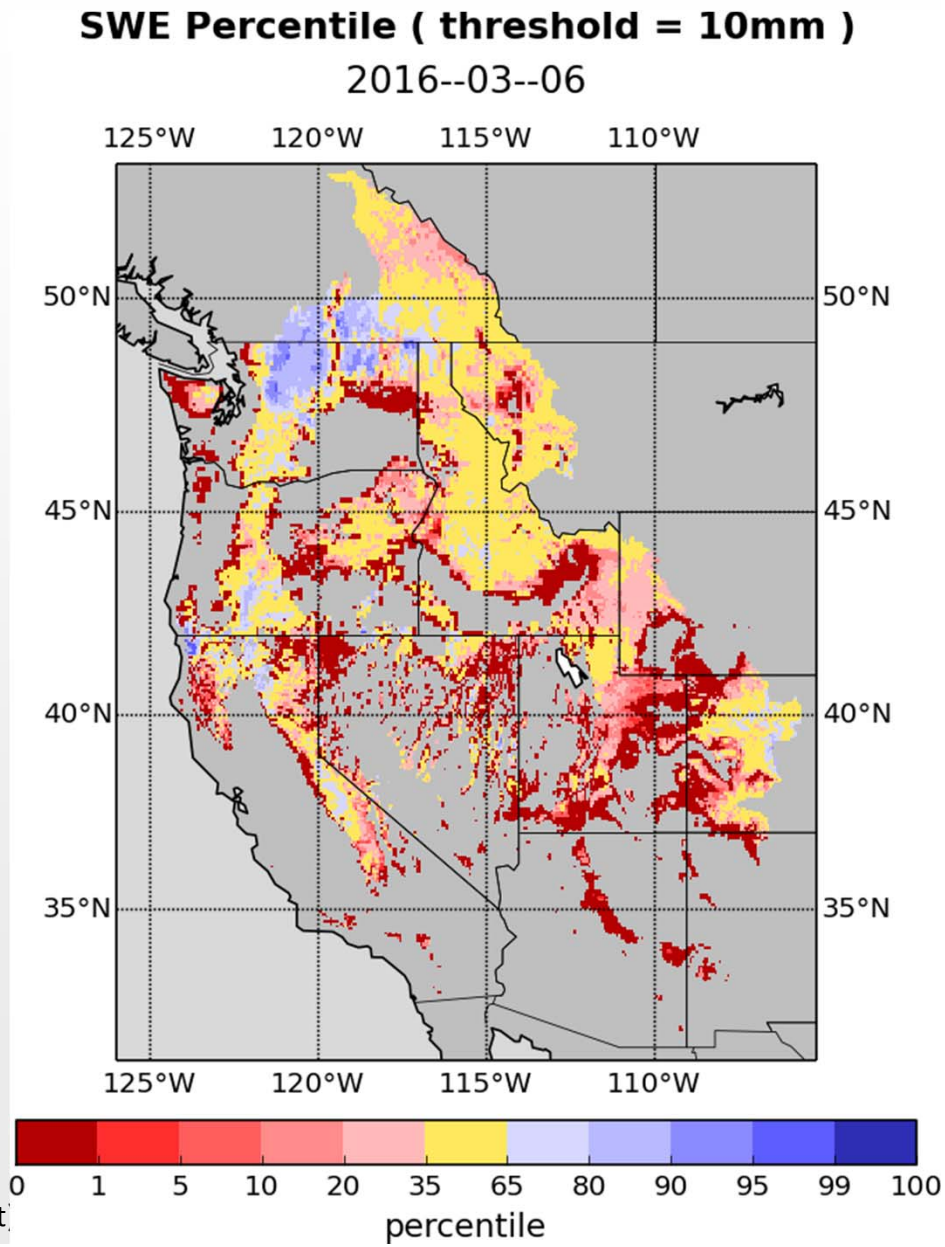
Doubling CO2: What happens?



Data from: Kapnick and Delworth 2013

Mountain Snowpack in the Present El Niño





Sources: http://www.nohrsc.noaa.gov/interactive/html/map.html (left) and http://hydro.washington.edu/forecast/monitor_cali/index.shtml (right)

Science Questions We are Exploring

1. How does **snowpack** change in time?
2. What will the **concentration of precipitation** be?
3. What **causes** this?
4. Is there any?
5. Can snowpack be **sustained** to capture and store mountain precipitation?