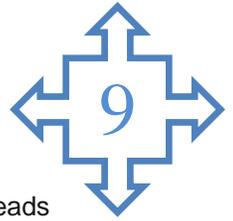


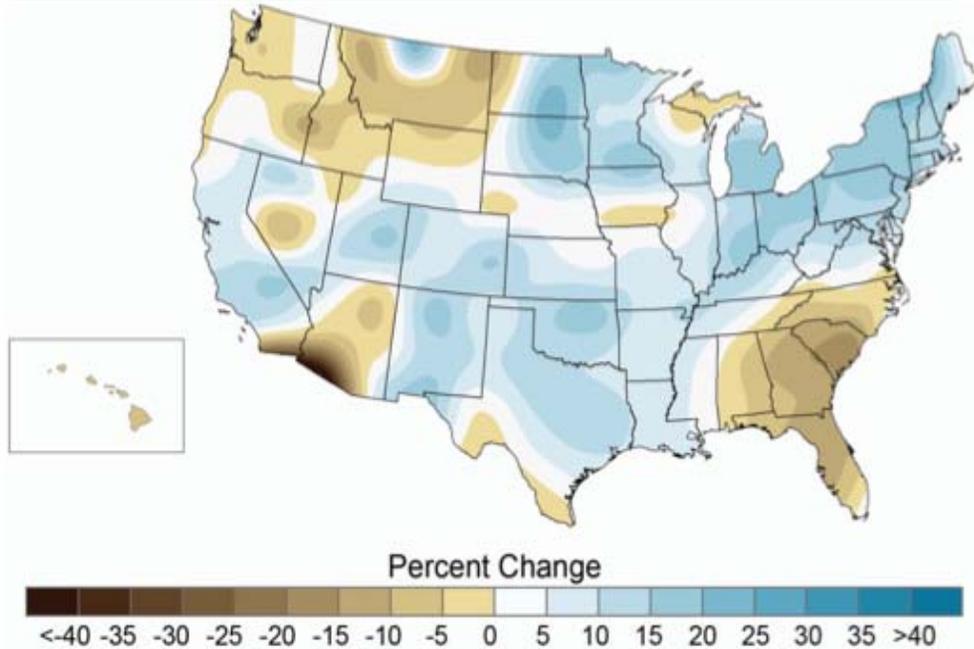
# Thinking About Climate Change

## Analyzing Changing Precipitation Patterns, 1958-2008



With warmer surface temperatures, evaporation from the land and ocean increases, which leads to an increase in average precipitation worldwide. Over the last fifty years, scientists have observed that precipitation has increased an average of about five percent in the United States. They have also observed that this change is not evenly distributed across the U.S. Increased evaporation and shifting storm patterns mean that some areas in the U.S. are experiencing more severe droughts while other areas are receiving increased precipitation.

### Observed change in Annual Average Precipitation 1958-2008



1. The definition of precipitation includes all phases of water that falls to Earth. This would include \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
2. Examine the color key above, what color(s) indicate a drop in average precipitation? \_\_\_\_\_ . What color(s) indicate an increase in average precipitation? \_\_\_\_\_
3. Name two states where average precipitation is increasing the most and decreasing the most.  
Two states that have the **greatest increase** in precipitation are:  
\_\_\_\_\_ (at \_\_\_\_\_ %) and \_\_\_\_\_ (at \_\_\_\_\_ %).  
Two states where the precipitation is **decreasing the most** are:  
\_\_\_\_\_ (at \_\_\_\_\_ %) and \_\_\_\_\_ (at \_\_\_\_\_ %).
4. How will changing precipitation patterns affect agriculture, groundwater, reservoirs, landscaping, and dam capacities? \_\_\_\_\_

Source: Global Climate Change Impacts in the US, 2009, retrieved from <http://downloads.globalchange.gov/usimpacts/pdfs/climate-impacts-report.pdf>, pg 30

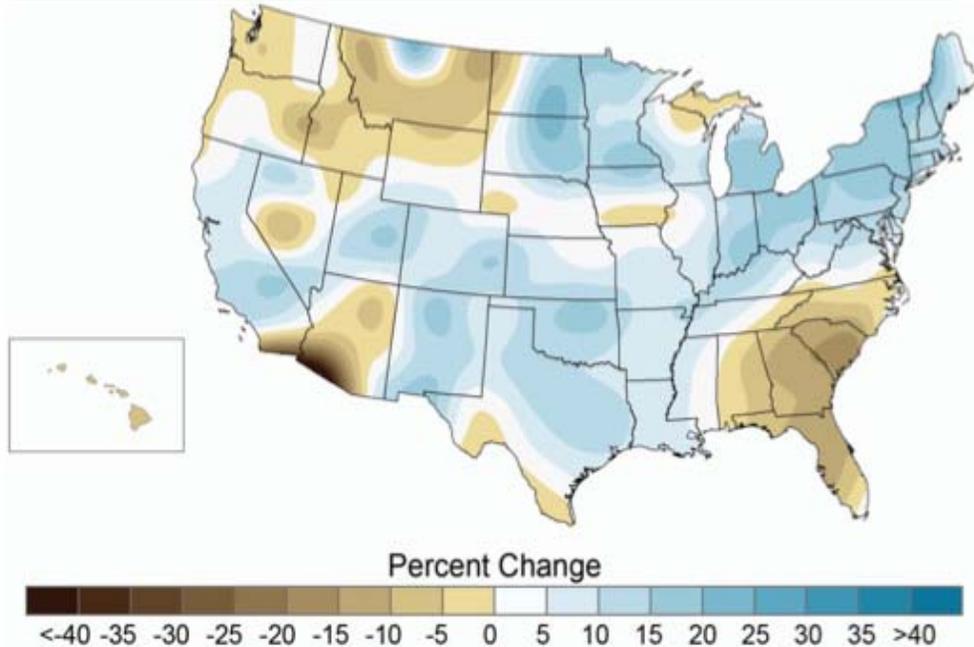
# Thinking About Climate Change

## Analyzing Changing Precipitation Patterns, 1958-2008



With warmer surface temperatures, evaporation from the land and ocean increases, which leads to an increase in globally averaged precipitation. Over the last fifty years, scientists have observed that precipitation has increased an average of about five percent in the United States. They have also observed that this change is not even across the U.S. Increased evaporation and shifting storm patterns mean that some areas in the U.S. are experiencing more severe droughts while other areas are receiving increased precipitation.

### Observed change in Annual Average Precipitation 1958-2008



1. The definition of precipitation includes all phases of water that falls to Earth. This would include **rain, sleet, hail, and snow**.
2. Examining the color key above, what color(s) indicate a drop in precipitation? **Shades of brown**. What color(s) indicate an increase in precipitation? **White and shades of blue**.
3. Name two states where average precipitation is increasing the most and decreasing the most.  
Two states that have the greatest increase in precipitation are: **N/S Dakota (at +20-25%) and northern Montana (at +20-25%)**. Also: **northern New York and Vermont (at +20-25%)**.  
Two states where the precipitation is decreasing the most are: **southern Arizona and California (at more than -40%) and S. Carolina (at -15-20%)**.
4. How will changing precipitation patterns affect agriculture, groundwater, reservoirs, landscaping, and dam capacities? **Many communities in lower precipitation areas that rely on groundwater for agricultural irrigation, drinking water, and landscape needs will need to find alternate sources to increase their water supply. Dam and reservoir capacity will need to be increased in areas that are receiving higher rainfall. Bridges, levees, dams, and reservoirs in these areas may need to be inspected and repaired or upgraded to meet the higher safety requirements that higher rainfall means.**

Source: U.S. Global Research Program. 2009. Global Climate Change Impacts in the United States, 2009 Report, pg. 30. Retrieved from <http://downloads.globalchange.gov/usimpacts/pdfs/climate-impacts-report.pdf>