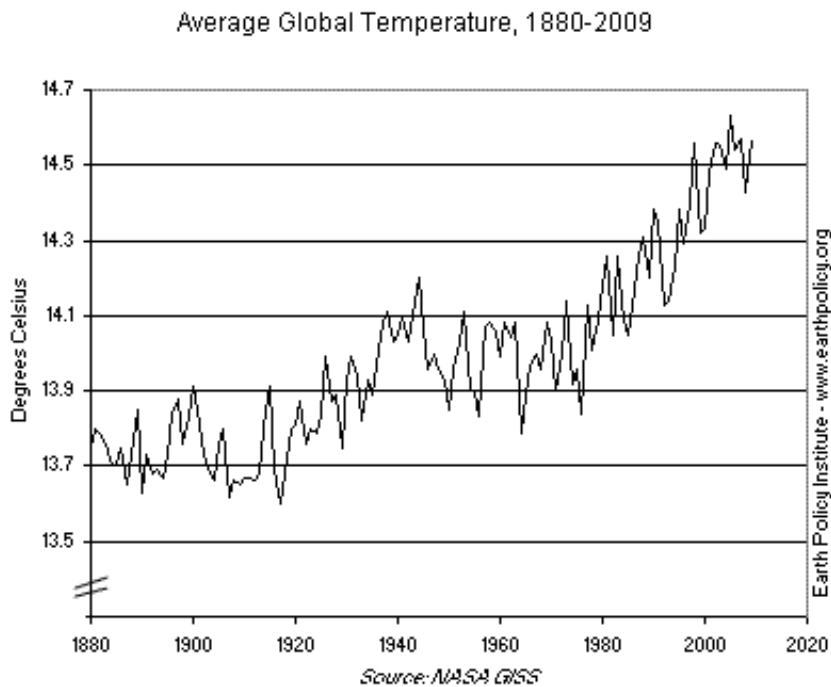


ES 25: Document-Based Question: Is The Global Climate Changing?

Your Task: You will examine various modern documents to determine if Global Climate Change is happening. You will then synthesize your findings in an outline for a 5-paragraph response.

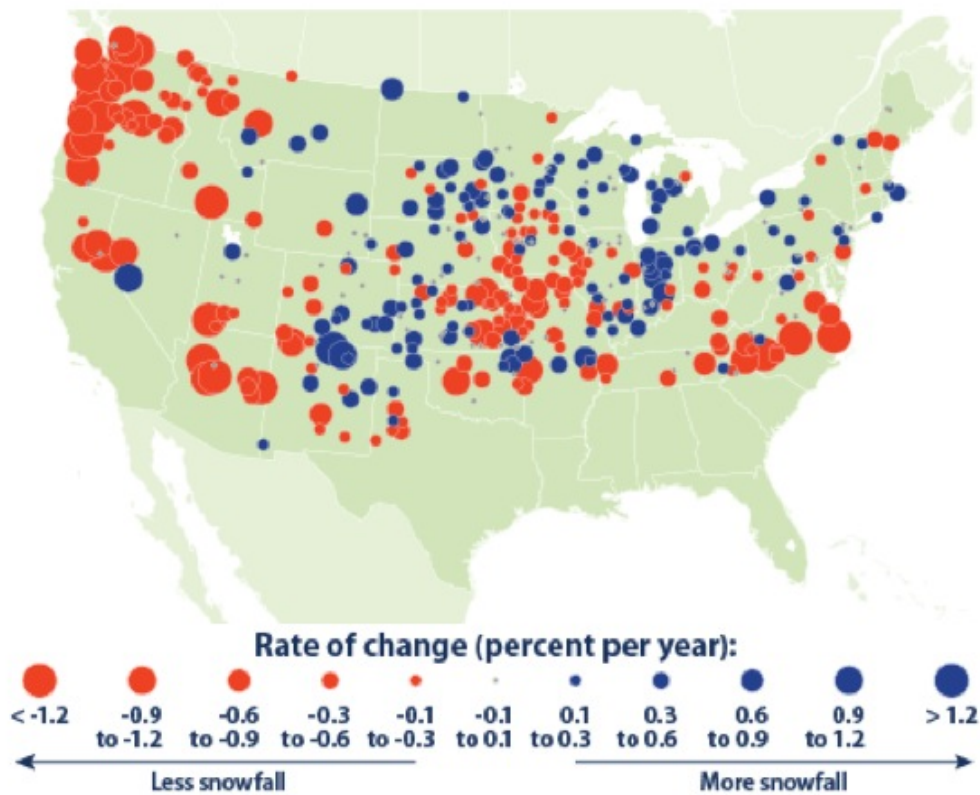
Source 1:



1. What information does this graph show?
2. What is the general trend of the data?≠
3. How does this data support the idea that global climate change is occurring?

Source 2:

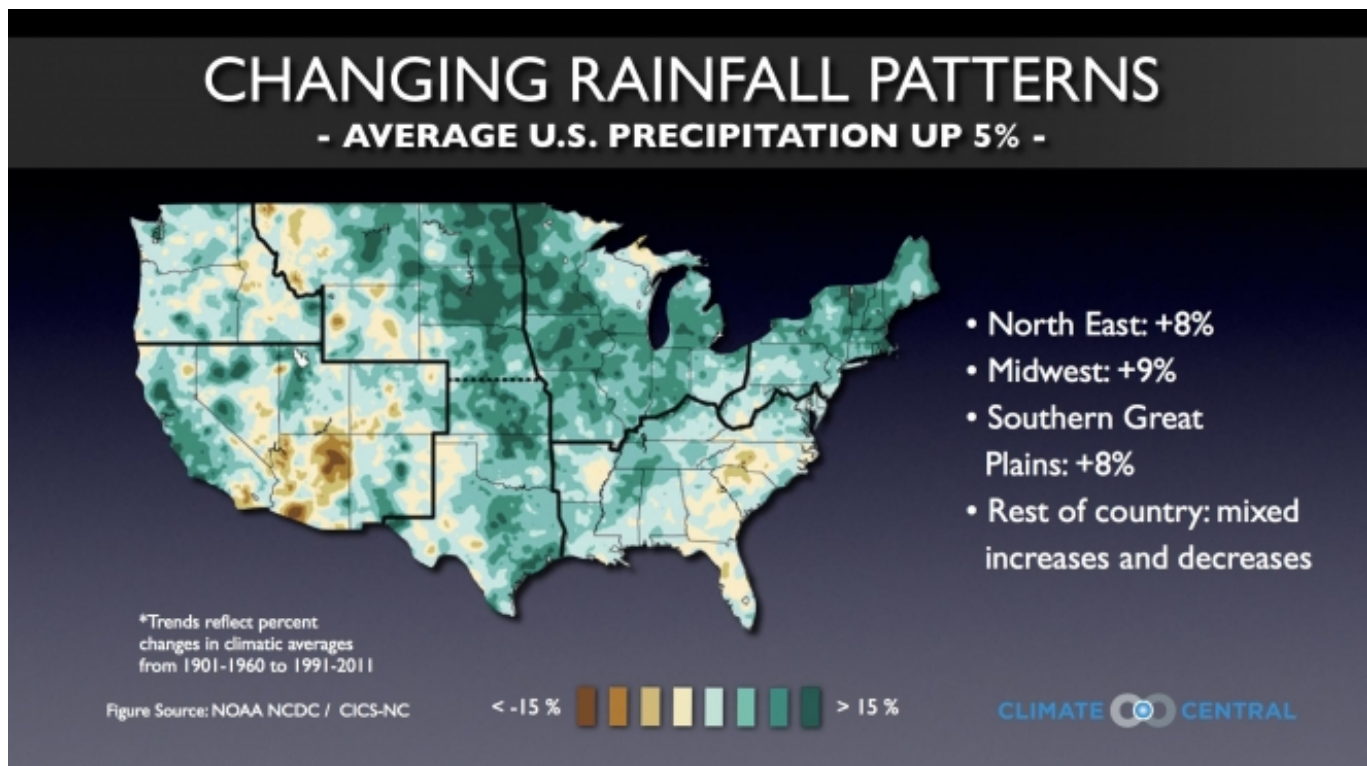
Change in Total Snowfall, 1930–2007



Data source: Kunkel et al., 2009

1. What does the color of the circles indicate?
2. What does the size of the circles indicate?
3. What trend does this diagram show?
4. How does the information shown in this diagram support global climate change?

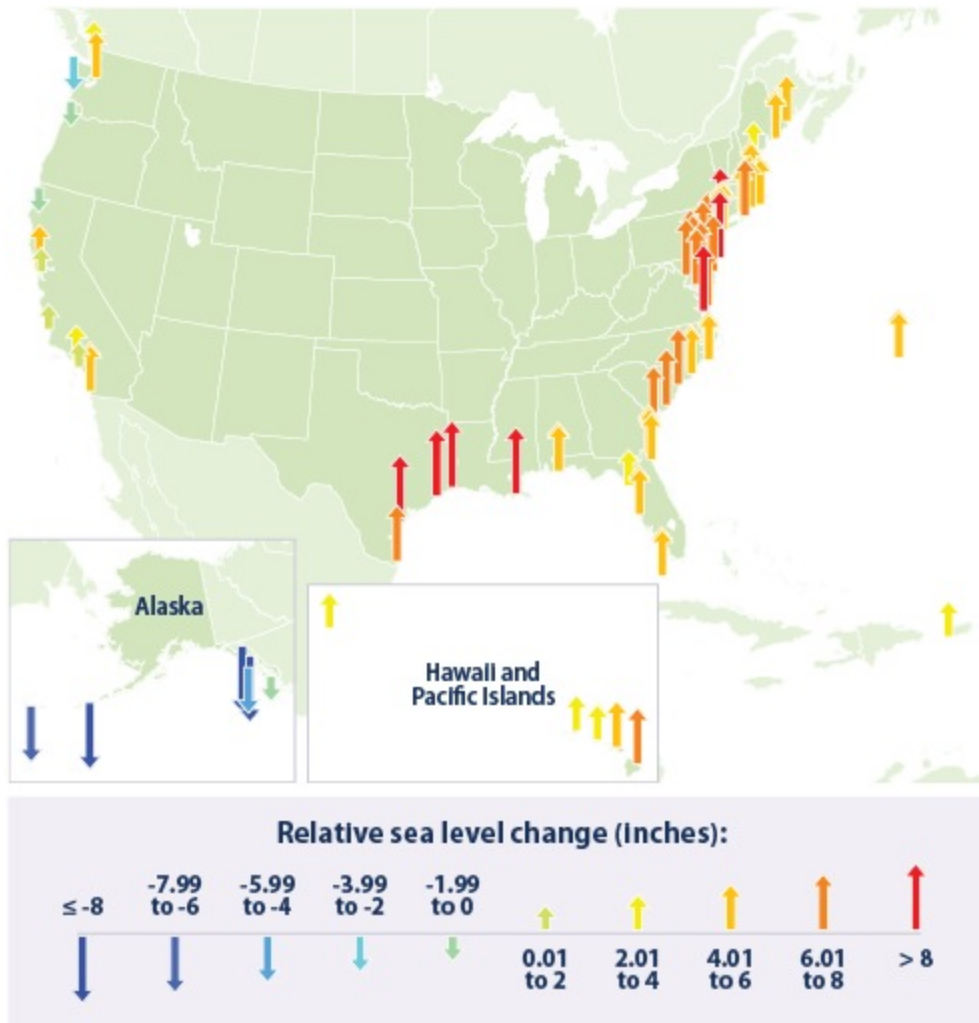
Source 3:



1. What information does this diagram depict? Be specific (mention dates).
2. Which areas of the United States have become drier?
3. Which areas of the United States have become wetter?
4. Does the information shown in this diagram support the claim that global climate change leads to drought, only? Explain your reasoning using data from the diagram.

Source 4:

Figure 2. Relative Sea Level Change Along U.S. Coasts, 1960–2012



1. Which states have seen a rise in sea level that is greater than 8 inches?
2. Which states have seen a drop in sea level that is greater than 8 inches?
3. Based on the information above, what can you conclude about sea level changes along the coast of the United States?

Source 5:

<http://www.climatecentral.org/news/us-shows-rapid-rise-of-temps-since-the-first-earth-day-in-1970-15893>

On your screen, explore the interactive map of the United States.

1. What overall trend does this map show?
2. Which 4 states have had the *least* amount of warming?

3. Click once on New York state.
 - a. Describe how the temperature in New York State has changed from 1970 to 2012.
 - b. Does this graph support global climate change? Explain why or why not.

Source 6:

Note: A glacier is ice that forms over land. When glaciers melt, they increase sea level. Sea ice (ice that forms over water) does NOT increase sea level when it melts.

<http://www.youtube.com/watch?v=GKWri15GjJg>

1. What has been happening to the Arctic sea ice over time?
2. Describe one way that this trend may impact wildlife.

Source 7:

<http://www.youtube.com/watch?v=6hFxG-8l0Go>

1. What is happening in this video clip and how does it relate to global climate change?
2. List one way that this trend will affect humans.

Source 8:

<http://www.climatehotmap.org>

On the map, unselect the "Oceans" and "Temperature" categories.

1. Click on the Blue icon located in China. Describe how climate change has affected the Uyghur people who live there.
2. Click on the Green icon located in Antarctica (near South America)
 - a. How is climate change affecting the penguins?
3. Click on the Brown icon located in southern Africa.
 - a. What is happening to the people in Western Highveld, South Africa?
4. Click on the blue icon located in NY.
 - a. Based on what you read about Syracuse, NY, how would you respond to the following statement: "Global Climate Change always leads to warmer winters and hotter summers around the world"?
5. Summarize: what impacts have changes in global climate had on humans and other organisms?

Source 9:

“Typhoons such as Yolanda (Haiyan) and its impacts represent a sobering reminder to the international community that we cannot afford to procrastinate on climate action. Warsaw [the city where climate talks are happening in November 2013]...should muster the political will to address climate change.

What my country is going through as a result of this extreme climate event is madness. The climate crisis is madness.”

-Filipino diplomat Yeb Sano, addressing the international delegates at the opening session of the annual U.N. summit on climate change in Warsaw, Nov. 2013.

1. According to Yeb Sano, what is the link between Typhoon Haiyan and global climate change?
2. What is Yeb Sano urging the global community to do?

Source 10:

“...the reality is that the science [linking global climate change] and tropical cyclones has become muddier in recent years....

[Scientists’ uncertainty] has to do with conflicting studies as well as poor historical data [about] tropical cyclones — especially in the less studied Pacific — which makes it hard to judge whether storms really have been getting worse as the planet has warmed. Even in places where [scientists] are much more certain that tropical cyclones have been getting stronger and more frequent in recent decades...scientists disagree on exactly why that’s happening.

...It remains extremely difficult to attribute specific weather events to climate change, and such attribution studies take time....But if it’s virtually impossible to blame Haiyan on current climate change, that doesn’t mean that future climate change — including the warming we’ve already baked into the system — won’t make future Haiyans more likely. Climate scientists are the opposites of weathermen — the further out they’re asked to forecast, the more confidence they tend to have in their predictions. Models point to stronger, if not necessarily more frequent tropical cyclones as the globe continues to warm, though [this pattern] may not [show up] until [much] later in the 21st century.

-Bryan Walsh, author of “Climate Change Didn’t Cause Supertyphoon Haiyan. But the Storm Is Still a Reason to Fight Warming,” Time Magazine, 11 Nov. 2013.

<http://science.time.com/2013/11/11/climate-change-didnt-cause-supertyphoon-haiyan-but-the-storm-is-still-a-reason-to-fight-warming/#ixzz2l0WaBbgC>

1. What is Walsh’s opinion of the link between global climate change and strong storms like Typhoon Haiyan?
2. Compare this author’s opinion to Yeb Sano’s above.

Source 11:



Don't answer that.

1. What basic misunderstanding about weather and climate does this cartoon reveal?

Final Outlined Response

Is the global climate changing? Respond to this question in an outline for a 5-paragraph essay (you won't actually write the essay, you'll just plan it!). You should provide 3 specific lines of evidence that support your response.

Structure your response as follows:

Paragraph 1: Introduction

- What is global climate change?
- **Thesis:** Do you believe it is occurring and why (briefly state your reasons)

Paragraph 2: Line of evidence #1:

- Supporting detail #1 (w/source):
- Supporting detail #2 (w/source):

Paragraph 3: Line of evidence #2:

- Supporting detail #1 (w/source):
- Supporting detail #2 (w/source):

Paragraph 4: Line of evidence #3:

- Supporting detail #1 (w/source):
- Supporting detail #2 (w/source):

Paragraph 5: Conclusion

- Restate your main points succinctly