

# Climate Change

The background features a dark blue gradient with faint, light-colored graphics. On the left side, there is a compass rose with the letters 'N', 'E', 'S', and 'W' visible. On the right side, there is a faint line graph showing a fluctuating trend over time.

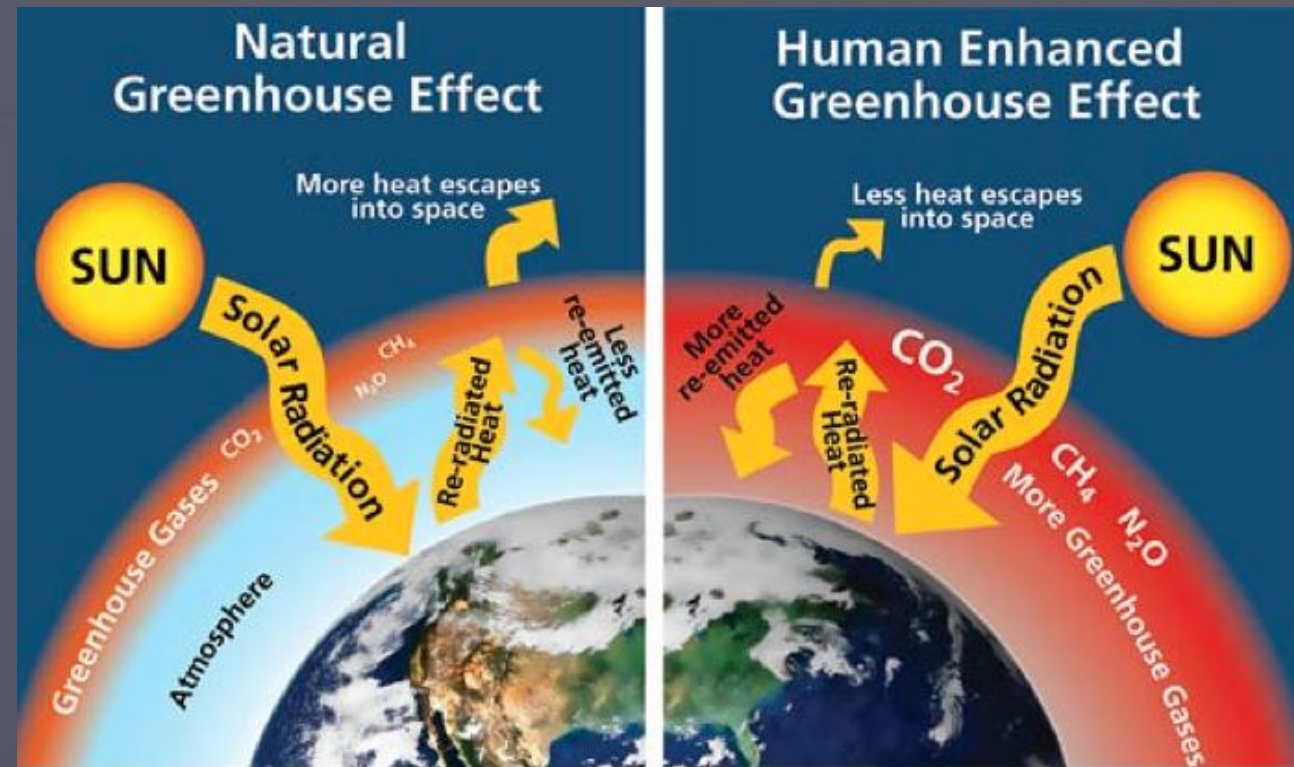
# Defining Climate Change

- A long-term change in the Earth's climate, or of a region on Earth
- Climate change includes global warming and everything else that increasing greenhouse gas amounts will affect
  - Melting Glaciers
  - More Severe Storms
  - More Frequent Droughts



# Defining Global Warming

- The increase in the average temperature of Earth's air and oceans
  - Refers to surface temperature increases
  - Global Warming is a contributor to Climate Change
    - Years of Global Warming lead to Climate Change





Your results are back. It's climate change. Just how many greenhouse gases have you been consuming?

Describe how the cartoon illustrates what you have learned about global warming and climate change



# Causes, Effects, and Solutions Activity



**Global Studies**  
 Thinking about Climate Change Name: \_\_\_\_\_  
 Section: \_\_\_\_\_  
 Leveled Assessment: \_\_\_\_/4 Score: \_\_\_\_/5

Directions: Use the National Geographic Encyclopedia entry for Climate Change, as well as other reputable sources (Internet and text) to fill out the chart below dealing with the causes, effects, and solutions of climate change.

### Section 1: Causes of Climate Change

Directions: Use the National Geographic Encyclopedia to come up with a list of four Human Causes, and four Natural Causes of Climate Change. This section will be completed in groups.

Causes of Climate Change	
Human Causes	Natural Causes
1.	1.
2.	2.
3.	3.
4.	4.

### Section 2: Effects of Climate Change

Directions: Use the National Geographic Encyclopedia and your own ideas to come up with possible effects of Climate Change. Come up with three Economic, three Social, three Political, and three eNvironmental effects. This section will be completed in groups.

Effects of Climate Change E.S.P.N Chart	
Economic	Social
1.	1.
2.	2.
3.	3.
Political	eNvironmental
1.	1.
2.	2.
3.	3.

### Section 3: Propose a Solution

Directions: First make a list of five things that can be done at a local scale, five things that can be done at a national scale, and five things that can be done at a global scale to combat climate change. This section will be completed individually.

Proposed Solutions		
Local Scale	National Scale	Global Scale
1.	1.	1.
2.	2.	2.
3.	3.	3.
4.	4.	4.
5.	5.	5.

### Thought Questions:

- Write a paragraph explain what you think is the most effective thing you could do to help limit the effects of climate change. Make a clear assertion of what you think you can do, explain your reasoning and why you think it will help, and provide some type of evidence (statistics, examples, etc...) to support your reasoning.

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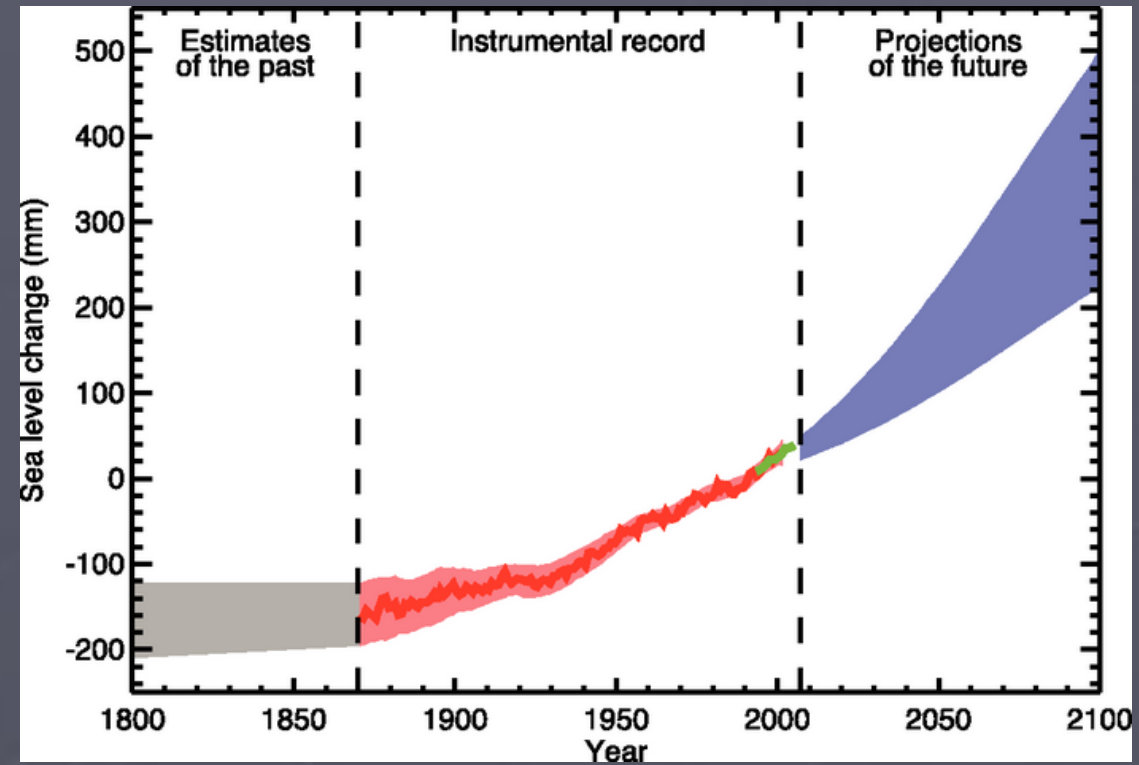
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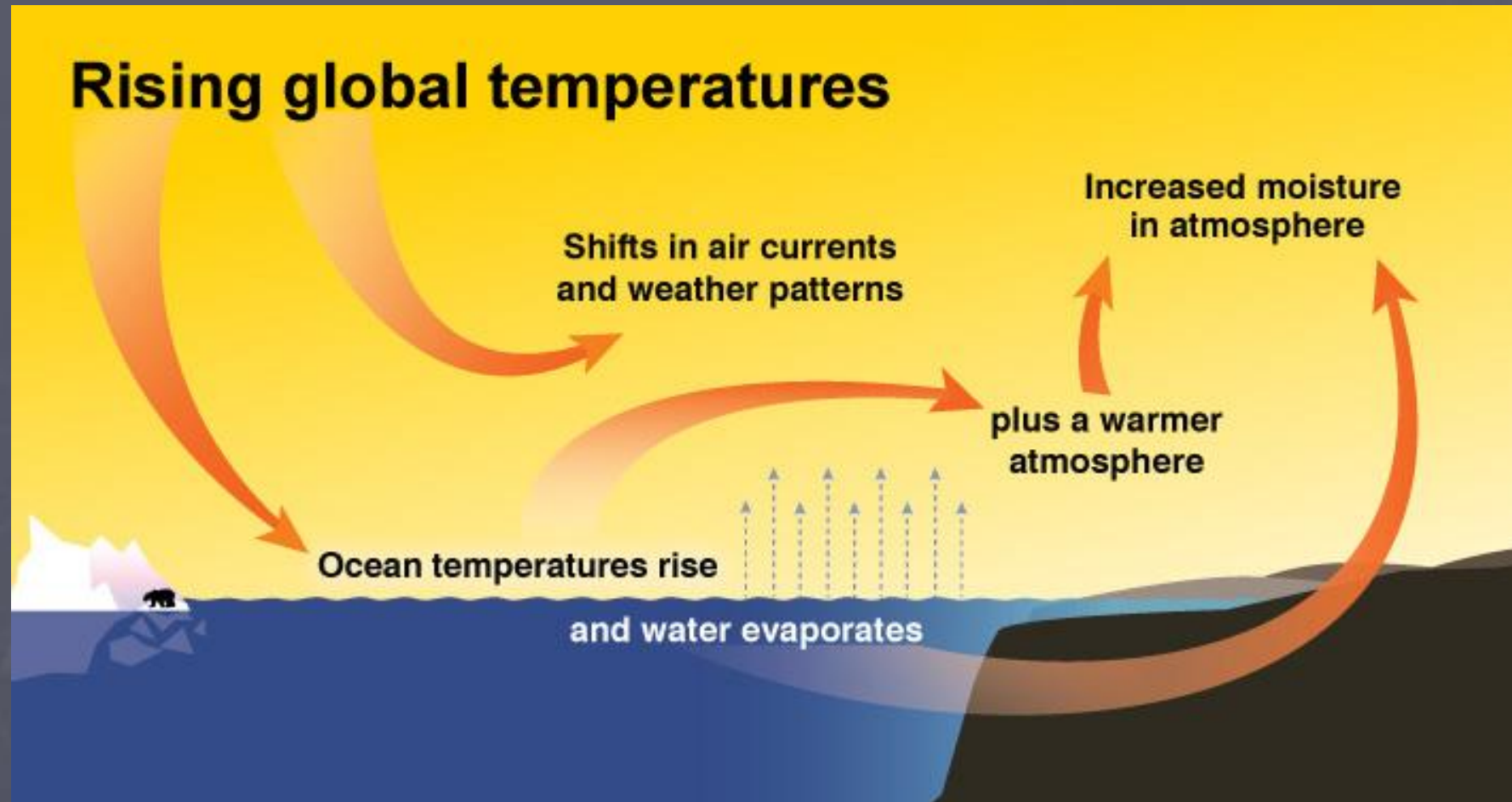
- Draft a letter to your state representative or senator asking them address one of the issues related to climate change. Write it as a formal letter and address it to a particular representative or senator. Make sure you address what the issue is, what you would like them to do about it, and why you feel the issue needs to be addressed.

# Effects of Climate Change on Sea Level

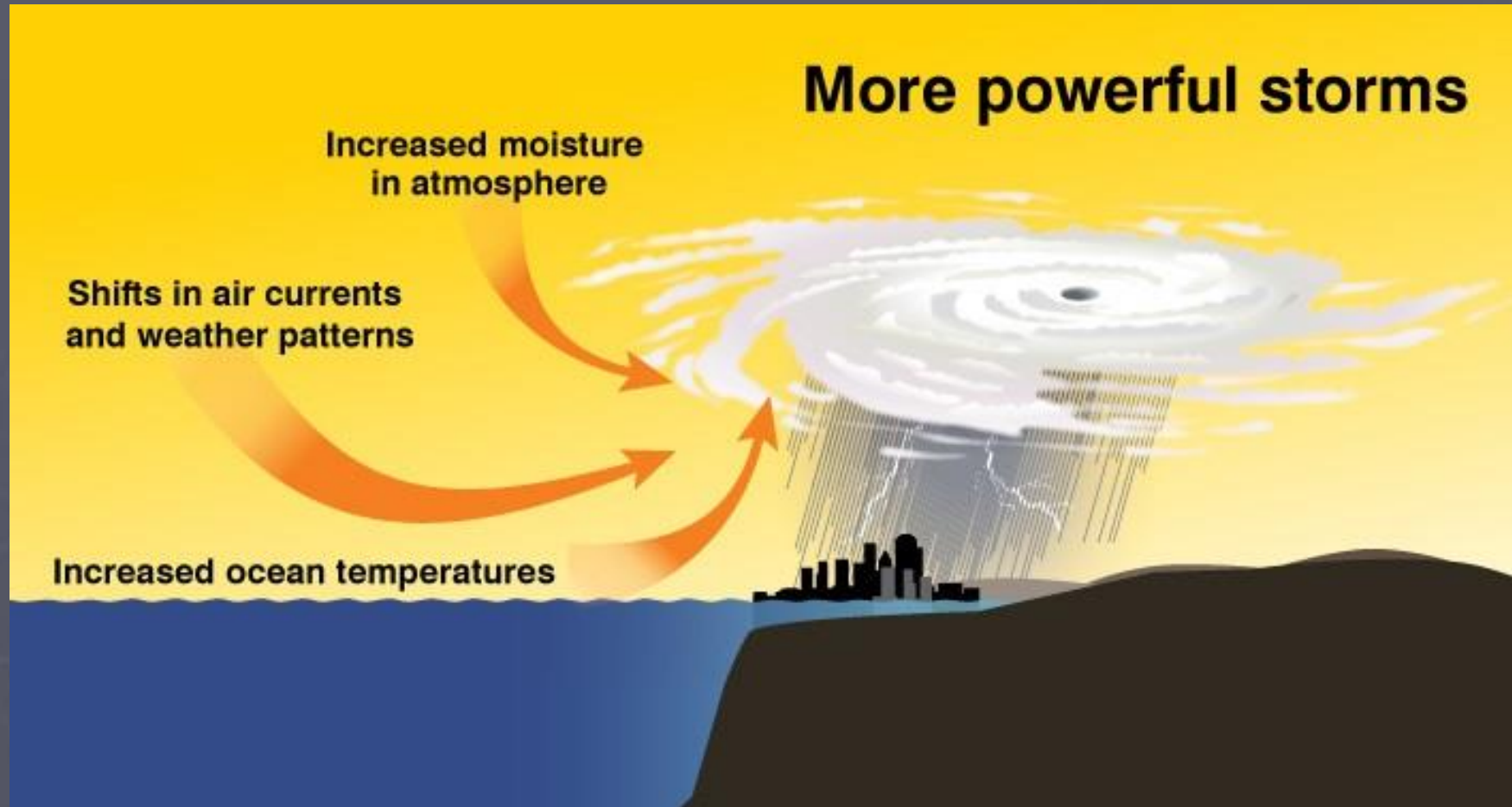
- Records and research show that sea level has been steadily rising at a rate of 0.04 to 0.1 inches per year since 1900
- Since 1992, new methods of satellite altimetry (the measurement of elevation or altitude) indicate a rate of rise of 0.12 inches per year
  - This is a significantly larger rate than the sea level rise averaged over the last several thousand years



# Natural Effects: Warmer Temperatures

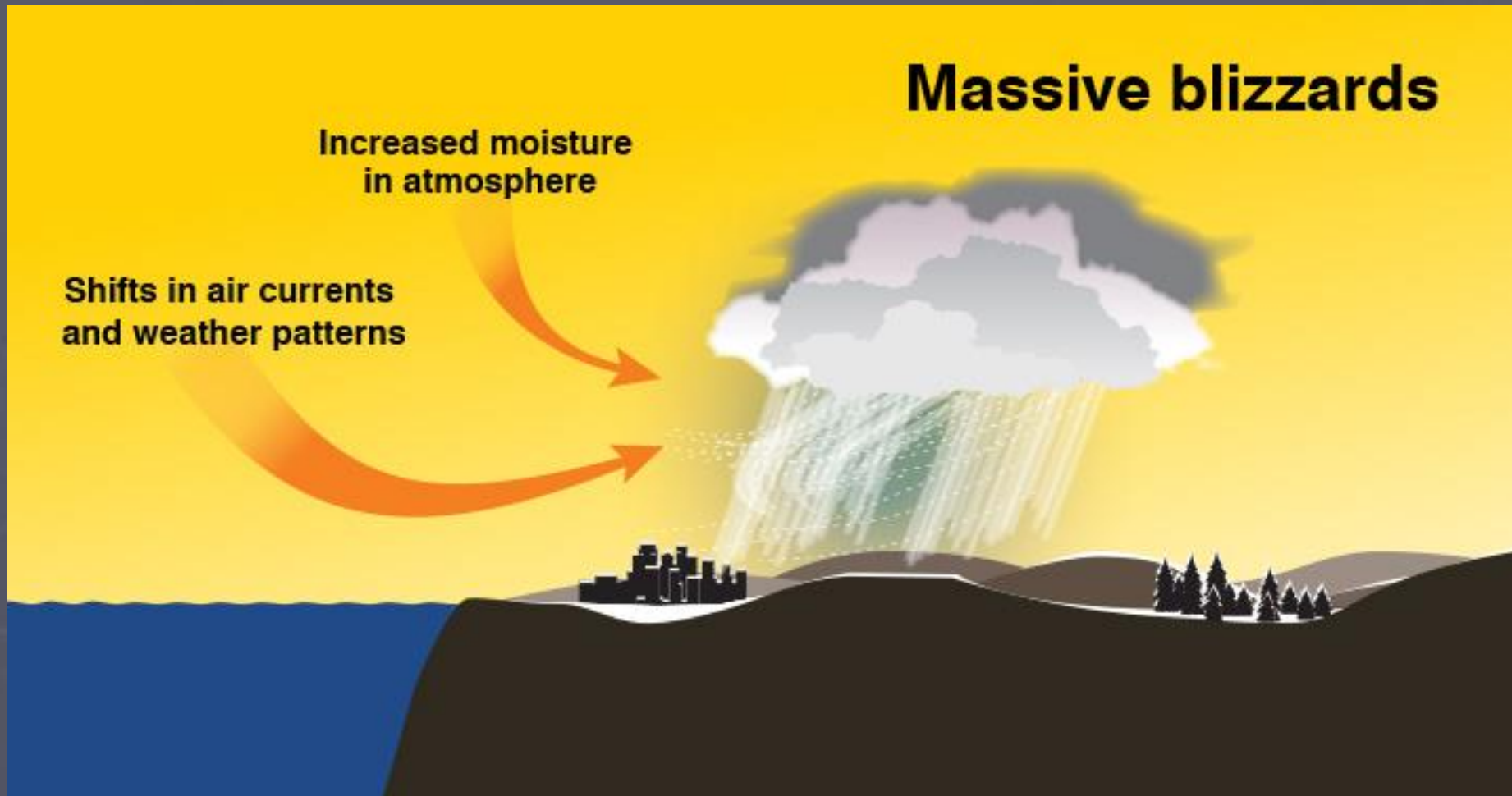


# Natural Effects: More Powerful Storms



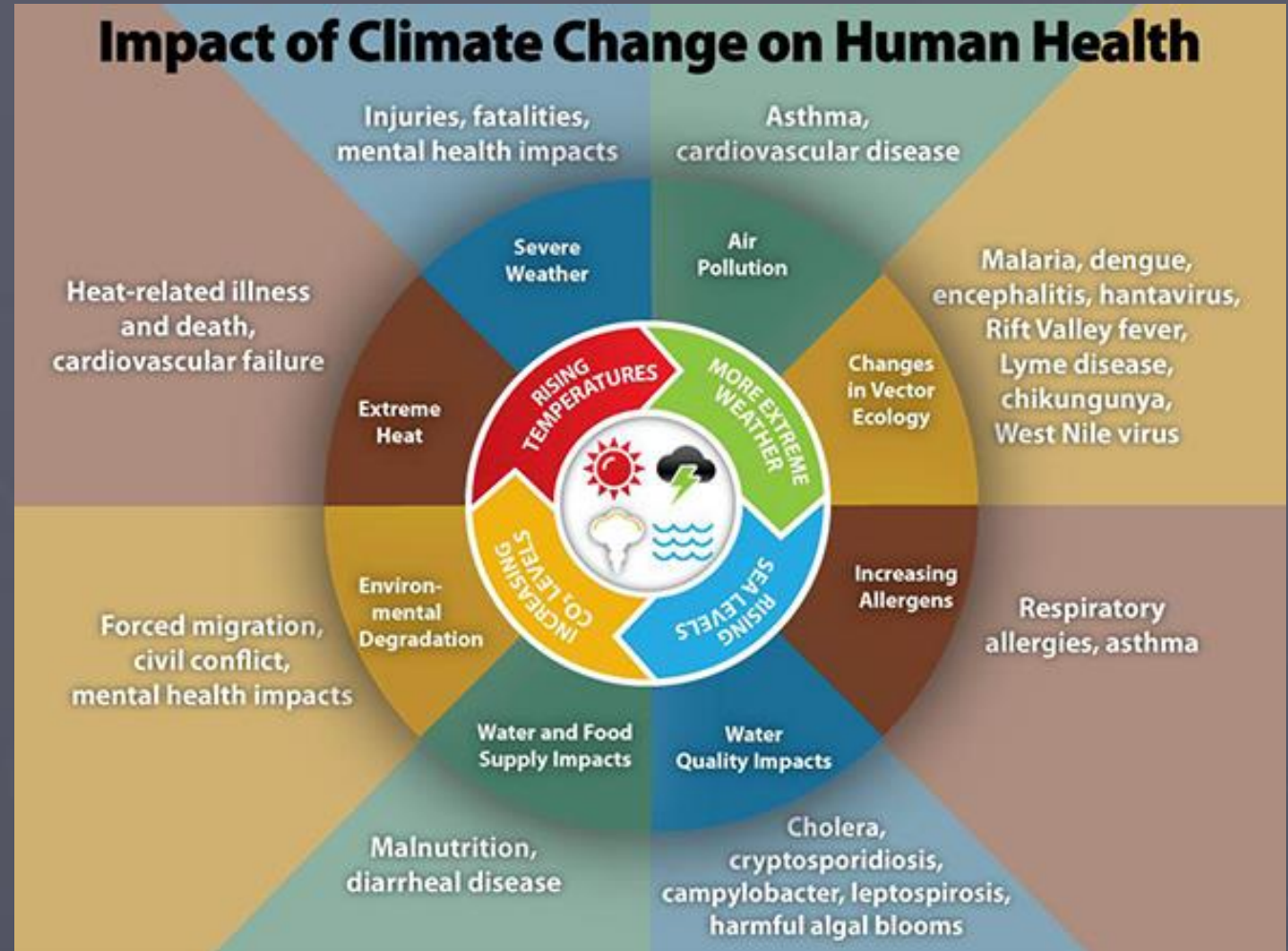


# Natural Effects: Massive Blizzards



# Human Effects: Health

- Humans are able to adapt to their environment fairly well, but changes in the climate can have many adverse effects on us directly and indirectly



# Sources

- "What's the difference between global warming and climate change?", NOAA, Climate.gov
- "Is Sea Level Rising?", NOAA
- "Observations: Oceanic Climate Change and Sea Level." *IPCC Fourth Assessment Report: Climate Change 2007*. Intergovernmental Panel on Climate Change, 2007. Web. 02 Dec. 2016.
- "Climate Effects on Health." *Centers for Disease Control and Prevention*. Centers for Disease Control and Prevention, 26 July 2016. Web. 02 Dec. 2016.
- "Climate Change: Weather on Steroids." *Climate and Energy*. Environmental Defense Fund, n.d. Web. 02 Dec. 2016.
- "The Greenhouse Effect and Climate Change." *Kids Corne*. Center for Climate and Energy Solutions, n.d. Web. 02 Dec. 2016.

# Credit

- Lesson Adapted from National Geographic
  - Larson, Elaine, “Climate Change and Rising Seas: How does Melting Ice Cause Sea Levels to Rise?” <http://nationalgeographic.org/activity/climate-change-and-rising-seas/>