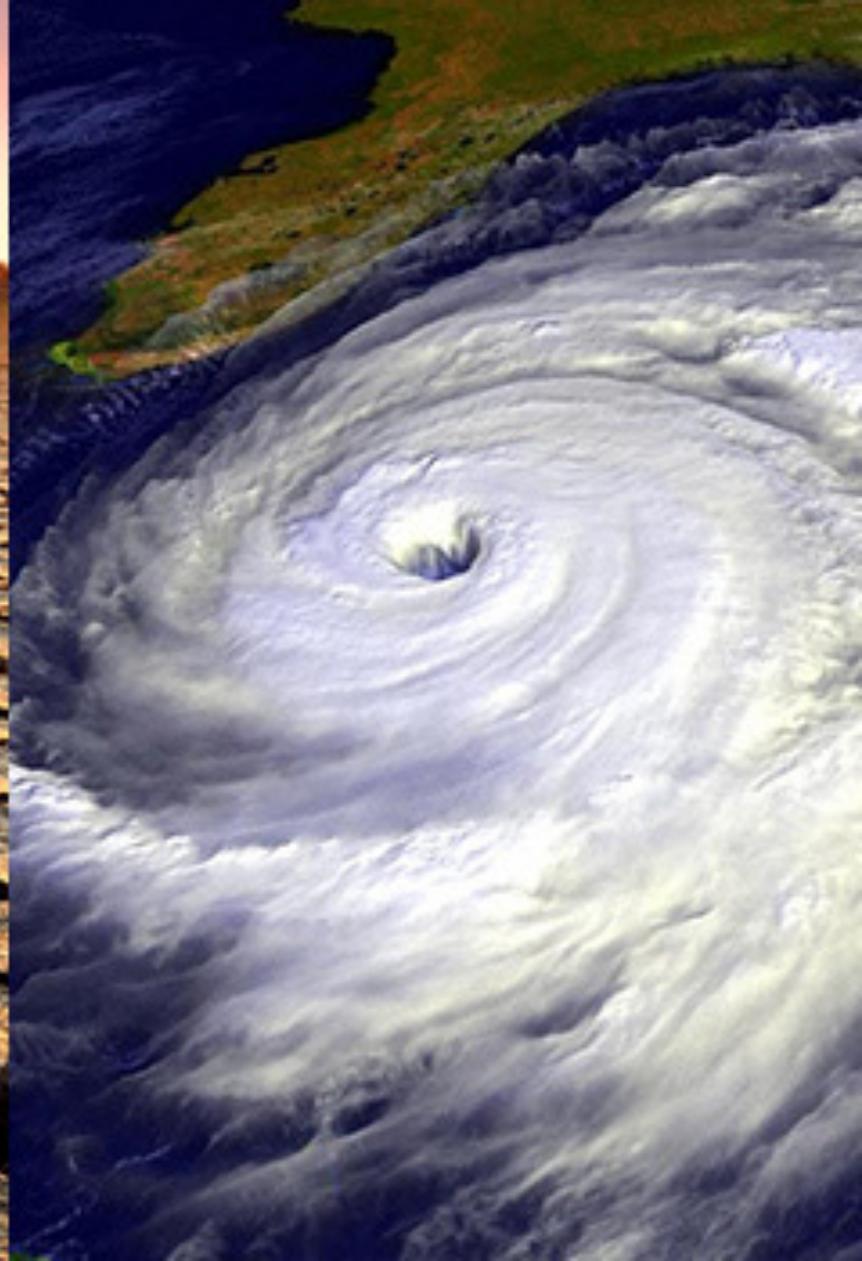


Unit 2: Climate Change and Global Warming



GLOBAL CLIMATE CHANGE

- Identifiable change in the climate of Earth as a whole that lasts for an extended period of time (decades or longer)
 - When due to natural processes, it is usually referred to as global climate variability
 - Usually refers to changes forced by human activities that change the atmosphere

What causes Earth's climate to change?

- Changes in the atmosphere
- Natural processes
 - Volcanoes
 - Tectonic plate movement
 - Changes in the sun
 - Shifts in Earth's orbit
- Human activities – any activity that releases “greenhouse gases” into the atmosphere

Causes of Climate Change

1. Human causes
 - 1.1 Industrial process
 - 1.2 Agriculture
 - 1.3 Carbon emission from transport
 - 1.4 Use of fuel generate energy
 - 1.5 Driving a car
 - 1.6 Air travel
 - 1.7 Deforestation

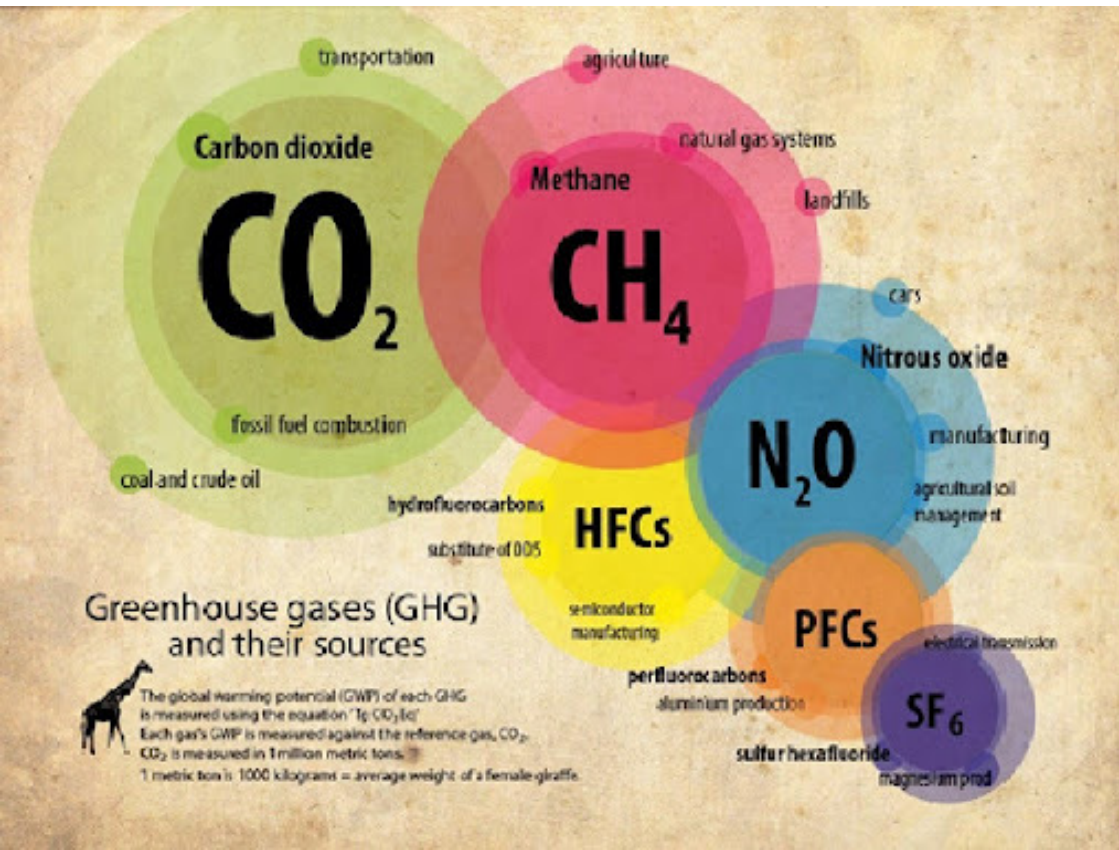
Causes of Climate Change

2. Natural causes

Causes	Effects
2.1 Volcanic eruptions	SO ₂ , water vapor and dust
2.2 Ocean current	El Nino occurs every 2-6 years

Causes of Climate Change

3. Cause and Impact of Greenhouse Gases



Human Activities cause Global Warming

Global warming happens as a result of human activities. We are producing carbon dioxide (or greenhouse gases) because we use energy for cooking, transport, industrial and so on.

We need energy to function in the world.

A satellite view of Earth showing the Americas and surrounding oceans. The text "The Greenhouse Effect" is overlaid in a large, bold, yellow-to-orange gradient font with a white outline.

The Greenhouse Effect

What is it?

What are greenhouse gases?

- Any gases that cause the “greenhouse effect!”

methane

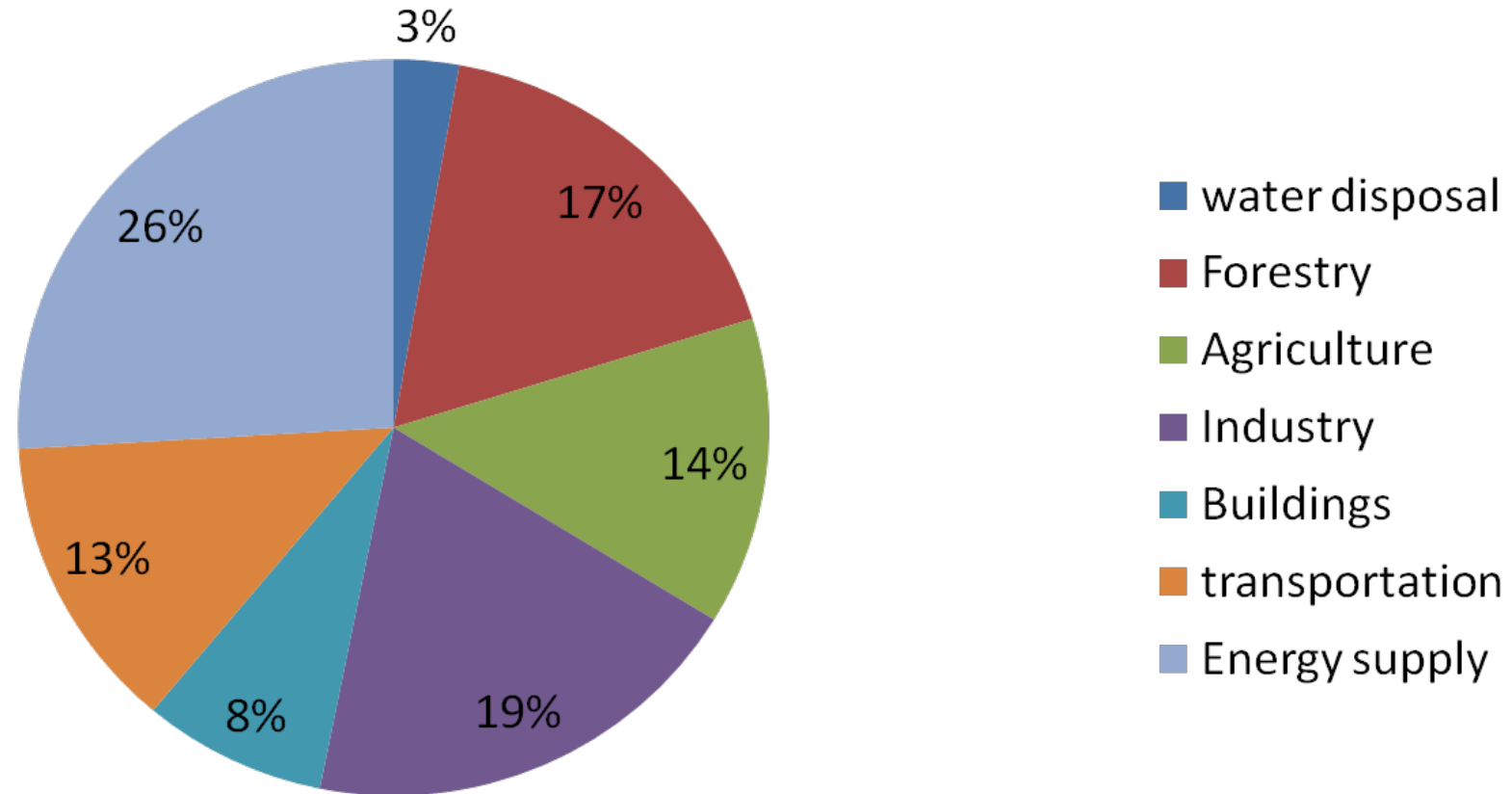
water vapor

nitrous oxide

carbon dioxide

Greenhouse gas emission by sector

Greenhouse gas emission by sector



Source: Silver, J. (2008). **Global warming and climate change**. America: RR Donnelley.

Signs of global warming

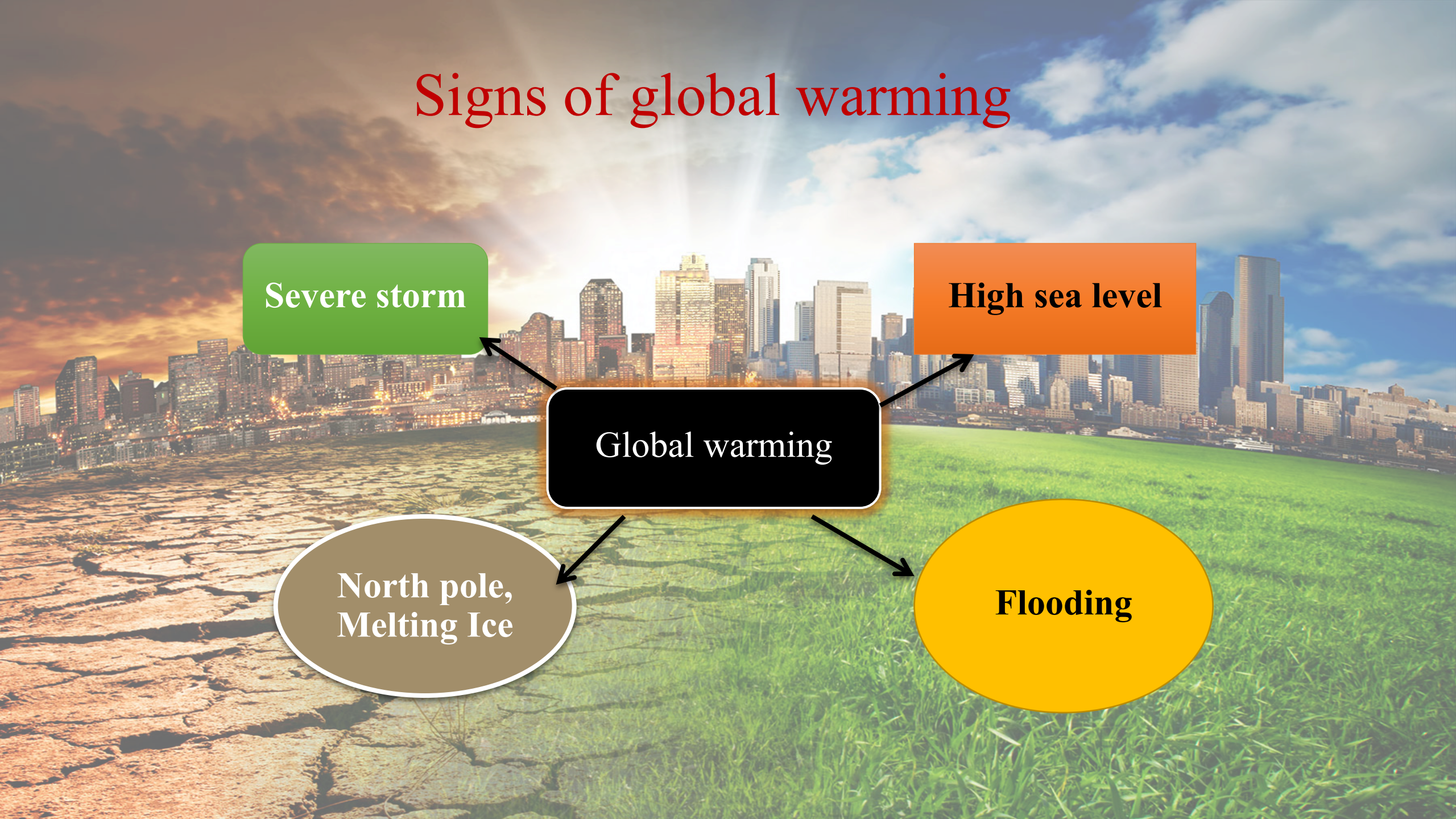
Severe storm

High sea level

Global warming

**North pole,
Melting Ice**

Flooding



Consequences of global warming

2. Health

2.1 Allergy, asthma, heart disease and lung cancer

- Air pollution can cause allergies and other diseases. When we inhale, we breathe in diesel, pollution and smog.



Consequences of global warming

2.2 Malaria

- Global warming can cause the environment to be conducive for mosquitoes to breed (WHO, 2011).
- Malaria in countries like Kenya, Rwanda and Tanzania.



Impact of extreme weather change

- El Niño and La Niña
- Floods
- Tsunamis
- Snow and avalanches
- Volcanoes
- Drought
- Strong storm

Possible Future Effects

- Warming and sea level rise will continue and will probably occur more quickly than what we've already seen.
- Even if greenhouse gases are stabilized, this will probably continue to occur for centuries.
- Some effects may be permanent.

Possible Future Effects

- **Effects on Ecosystems**

- Coral systems and other unique ecosystems cannot handle higher temperatures well.
- Wildfires will increase.
- Up to 30% of species will be at increased risk for extinction due to the rapid changes in their ecosystems.

Possible Future Effects

- Effects in North America

- Warming in western mountains: several effects
- Increased rain: will actually help some crops
- Heat waves will increase in number, length, and intensity
- Coastal communities will be affected by increased flooding and storms

Conclusion

1. Causes of global climate change
2. Signs of global climate change
3. Impact of global climate change
4. Future effects of global climate change
5. Solutions for global climate change