

Global Climate — Activity #84



TEKS:

Science

6.1 B

6.2 D, E

6.3 A, D

6.9 A, B

7.1B

7.2 D, E

7.3 A, D

7.9 A

8.1 B

8.2 D

8.3 A, D

8.10 A, B, C

8.11 C

Language Arts

6.10 A, B

6.26 A, B, C

7.10 A, D

7.22 A, B

8.10 A, B, C, D

8.22 A, B

8.23 A, B, C

8.24 A, B

8.25 A, B, C, D

Resources:

www.harc.edu/News/PressReleases/NewTexasClimateChangeResearch/tabid/1233/Default.aspx

www.texasclimate.org/

www.nextgenerationearth.org/content/view/full/56

www.epa.gov/climatechange

Texas Overview:

When is being No. 1 not good? When you are the No. 1 state in the nation for carbon production. Unfortunately, Texas has this designation. Carbon Dioxide is one of the many contributors to global climate change. The gas is contributing to the increasing temperatures in Texas, as well as across the rest of the globe.

First, let's look at what affects the climate in Texas. The Rocky Mountains, Gulf of Mexico and the middle of the North American Continent all contribute to the weather patterns and unique ecosystems found in Texas. The state is so large, you see a big difference in average temperatures as you travel from north, where it is cooler, to south, where temperatures are much warmer. Precipitation also varies across the state. The eastern part of the state receives rainfall from prevailing currents in the Gulf of Mexico. But as you travel west, things get much drier and arid. These, as well as other local geographical features, contribute to the number of ecosystems found in the state.

Texas experiences affects from many weather events — tornados, severe droughts, hurricanes, thunderstorms, hail storms and blizzards. Heavy rainfall in a short time periods can lead to flooding, while severe droughts can lead to wildfires.

What does global climate change (rising average temperatures) mean for Texas?

1. Increase in air temperature: An increase in air temperature could affect growing cycles in plants and crops. Longer seasons could change natural migration patterns and prompt some species to move farther north in order to reach cooler temperatures. All these things will affect the biodiversity of the state.
2. Increase in ground level ozone: An increase in ground level ozone could lead to more respiratory health problems such as asthma. Ozone actually has a season based on warm air temperatures. Temperature increases foster ozone production. A longer, warmer summer season allows more days of ozone production.
3. Increase in sea level: The change in Texas may be greater because of subsidence along the Gulf Coast, which is due to the pumping of underground resources such as oil and water. Sea level changes affect the dissolved oxygen, salinity and temperature of the ocean.

Species that are sensitive to slight changes are called indicator species and will be the first to be affected. As the problem compounds, many other species will be at risk. Erosion also will increase as coastal area plants die from salinity changes in the water

4. Decrease in precipitation: Most of the water in Texas comes from precipitation and then is absorbed into aquifers through different recharge zones. Decreases in precipitation will affect the flow of the major rivers in Texas and impact the water supply for the state.
5. Increase in rodents and insects: Parasites generally are killed during winter months when the temperatures are lower. But longer warm seasons will keep that from happening. As a result, there could be an increase in rodents and insects including disease-carrying insects such as mosquitoes.
6. Crop change: Crops grown in Texas will be affected by the change in weather patterns. Some crops will be adversely affected, especially if precipitation decreases. But others may benefit from a longer growing season, which would result in increased production.

It doesn't matter if you are in Texas or any other state, global climate change is a complicated issue. Exactly what will happen is yet to be seen.