

Name:

Date:

Investigating Climate Change Data

Guiding Questions:

- What are the expected changes in climate for your region?
- What research questions stem from field observations & preliminary research of climate change predictions?

Definitions:

- **Global Climate Models** generate projections of precipitation, temperature, pressure, cloud cover, humidity, etc, for a timeline extending 100 years into the future.
- **Emission Scenarios** characterize the heat-trapping emissions that we expect to find in the atmosphere in the future. Many different emission scenarios have been developed (~40), but we will focus our attention on examples of low, medium and high CO₂ emission scenarios (B1, A1B, A2, respectively).

Step 1. Find your latitude and longitude.

1. From the Data Tools page on the Student Climate Data website (<http://studentclimatedata.unh.edu/data-tools.shtml>), click on ‘Carbon Mapper.’
2. Close the introductory pop-up window.
3. Navigate to your study location on the map by clicking and dragging and/or using the zoom tool.
 - a. Record the latitude and longitude of your study location below. (This is displayed where it says ‘Location’ in the bottom-right corner of the map)

Latitude: _____ Longitude: _____

Step 2. Explore predicted climate change at your location

1. Return to the Data Tools page. From here, use the tools described below to address the question: **What are the expected changes in climate for your region?** Record your observations and results in data tables provided.
 - a. *Temperature & Precipitation Animation visual tool*
 - i. Click ‘Animations’ and follow the links under ‘Climate Animations’ to view the Mean Annual Temperature and Precipitation animations. By observing these animations gain a sense of the climate changes expected in your region in the future.
 - b. *Current and Future Climate Maps visual tool*
 - i. Click ‘Climate Maps’ and follow the appropriate map link.
 - ii. Use Ctrl + or – (PC) or command + or – (mac) to shrink or expand the size of the maps.
 - iii. Record Mean Annual Temperature and Precipitation currently and in the future based on the high emission scenario.



Record climate change data

Data Source(s): _____

Record the climate change data for your location.

Table 1. Predicted Climate Change

Climate Variable	Current	Future (high emission scenario- a2)
Mean Annual Temperature		
Annual Precipitation		

c. Single Site Climate Data visual tool

- i. Click 'Single Site Climate Data.' When the page loads, click 'Explore and Download Data' within the Climate Time-Line section of the page.
- ii. Follow the instructions on the site to enter your latitude/longitude and retrieve the climate data for your location. You will select a data product---1st Mean Annual Temperature & 2nd Annual Precipitation---and submit the query to obtain predictions for the future temperature of the designated latitude and longitude.
- iii. Record data from the graph, or click on 'Table of 30 year Averages' to get the individual values for each scenario.

Record the climate change data for your location.

Table 2. Predicted Climate Change

Climate Variable	Current	Future (high emission scenario-a2)
Mean Annual Temperature		
Mean Precipitation		

