

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 CO<sub>2</sub> 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. The latitude and longitude are displayed where it says ‘Location’ in the bottom-right corner of the map.
4. Record your **location**, and the **latitude/longitude** values in your science notebook.

### 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?**
  - a. *Temperature & Precipitation Animation visual tool*
    - i. Click ‘Animations’ and follow the links under ‘Climate Animations.’
  - 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.
  - 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 in graphical format, or from the Table of 30 Year Averages.



### Step 3. Record climate change data

1. In your science notebook, record the **Data Tools** that you used, as well as what specific **aspects of climate change** (climate variable, time period, emission scenario, etc.) you chose to investigate.
2. In your science notebook, create a **data table** that includes your climate variable(s), the current and future projections, and any other information that is useful to your investigation.
3. Also record any other notes, observations, sketches, graphs and questions you might have.
4. Write a thorough response to the guiding questions based on your investigation of climate change in your region. Make sure to develop a **research question** relating to your field plot, and in particular the abundant tree species, and climate change.

