# Student Handout
# Climatograms: Abiotic Factors in the Biome

**Background Information**

What is the difference between a prairie and other biomes? Why do prairies occur where they occur? In this activity you will compare the climate on the prairie with climates from other biomes in the United States to determine what makes a prairie a prairie.

**Procedure**

To do this, you will plot a climatogram. This is a graph that shows the climate of a region. It contains two kinds of data – average monthly precipitation and average monthly temperature. Since there are two types of data, you will be making two separate graphs on the same piece of graph paper. This is called a double-y graph because there are two Y-axes. The axis on the left is labeled for temperature. Make a line graph showing the temperature data using the left Y-axis. The axis on the right is for precipitation. You will make a bar graph showing precipitation using the right Y-axis.

**Step 1. Plot the data below on the graph templates provided. Use the axes as explained in the paragraph above.**

| Month | Temperature (C) | Precipitation (centimeters) |
|---|---|---|
| January | -13.3 | 1.4 |
| February | -10.5 | 1.1 |
| March | -3.5 | 1.8 |
| April | 6 | 2.9 |
| May | 12.4 | 4.7 |
| June | 17.5 | 7.7 |
| July | 21 | 5.2 |
| August | 19.9 | 3.8 |
| September | 13.7 | 2.9 |
| October | 7 | 2 |
| November | -2.5 | 1.4 |
| December | -9.5 | 1.4 |

**Table 1:** Average Monthly Temperature and Precipitation for Williston North Dakota, 100 miles north of Theodore Roosevelt National Park. North Dakota climate data from: http://www.soilsci.ndsu.nodak.edu/Enz/enz/almanacs/WillMorpt.PDF

| Month | Temperature (C) | Precipitation (cm) |
|---|---|---|
| January | 3.5 | 8.5 |
| February | 4.6 | 8.4 |
| March | 8.9 | 9.5 |
| April | 14.4 | 7.9 |
| May | 19.2 | 9.1 |
| June | 23.4 | 9.6 |
| July | 25 | 11.7 |
| August | 24.4 | 10.8 |
| September | 21.1 | 9.3 |
| October | 14.7 | 7.6 |
| November | 9.0 | 6.8 |
| December | 4.4 | 8.4 |

**Table 2:** Average Monthly temperature and precipitation for a temperate broadleaf deciduous forest, Greensboro, NC.

| Month | Temperature (C) | Precipitation (cm) |
|---|---|---|
| January | -1 | 2.5 |
| February | 2 | 3 |
| March | 7 | 1.8 |
| April | 8 | 1 |
| May | 12 | 1 |
| June | 15 | .8 |
| July | 20 | .5 |
| August | 18 | .5 |
| September | 15 | .4 |
| October | 10 | .6 |
| November | 5 | 1.8 |
| December | 1 | 2.2 |

**Table 3:** Average monthly temperature and precipitation for a mid-latitude desert, Reno Nevada.