BIOL 2406 – Climatographs

*Weather* describes the meteorological changes that take place in a region over relative short periods of time. Predictions about temperature, precipitation, and relatively humidity are an example of weather conditions that are given daily during the local news report. *Climate* describes historical weather patterns and is often used to characterize the average meteorological changes over large regions. In order to better understand the climate of a region, ecologists often use *climatographs*. Climatographs typically show the relationship between mean monthly temperature and precipitation. In figure 1, mean monthly temperature is plotted against mean monthly precipitation for each month of the year. The plotted points are connected sequentially to form an irregular polygon. Notice the position and the shape of the regions on the graph. What general statements can you make about a region from looking at its polygon on this type of climatograph?

![Figure 1. Regional climatographs.](image)

An alternate method plots seasonal changes in temperature and precipitation. This method produces climatographs that diagram the availability of water to plants. Figure 2, is an
example. A temperature of 10°C is considered roughly equivalent to 20 mm of monthly precipitation in terms of evapotranspiration. Therefore, where temperature and precipitation curves intersect the amount of water lost through evapotranspiration is about equal to the amount gained from precipitation. As long as the curve for precipitation is below the curve for temperature, a water deficit exists.

![Avg Temperature & Precipitation DFW 1971 - 2000](image)

Figure 2. Climatograph of DFW emphasizing water availability.

**Climate Data Exercise**

Search the internet for data on the climate of the Dallas/Ft. Worth area. You need to find average monthly temperature and precipitation for a certain year. There are a number of governmental agencies and public sites that offer this kind of data. Once you find it complete the information below. The data needs to be in °C and mm.

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Year</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precipitation</td>
<td>Year</td>
<td>Jan</td>
<td>Feb</td>
<td>Mar</td>
<td>Apr</td>
<td>May</td>
<td>Jun</td>
<td>Jul</td>
<td>Aug</td>
<td>Sep</td>
<td>Oct</td>
<td>Nov</td>
<td>Dec</td>
<td>Annual</td>
</tr>
</tbody>
</table>
Data compiled by: ________________________________
Site/Location: ________________________________
Temperature Units: ______________ Precipitation Units: ______________
Conversion Equations:
°C = (°F – 32) * 0.55
mm = in * 25.4