Writing Assignment #1

Hint #1 – The title of your essay should not be Writing Assignment #1

You probably have heard a climatic event called El Niño. When El Niño or La Niña condition is onset, our everyday weather is affected. In this first writing assignment, you will write a short paper about El Niño and La Niña. Your paper will focus on explaining what El Nino and La Nina are, how they are driven by sea surface temperature change, and the impact they have on weather in North America. Please be sure to review these instructions very carefully. Refer to the "101 Lab Writing Guide" for all formatting requirements.

There are five parts to this assignment: Introduction, 3 body sections, and a conclusion. We will focus on the 3 body sections first and complete the intro and conclusion last. Each section of your paper must have a subtitle.

1) **El Nino vs. La Nina:** In the first body paragraph, provide a general description of what El Niño and La Niña are. Use your textbook as a primary reference. Do this description first so that the next description of sea surface temperature "difference from average" becomes easier. Using the image below (Figure 1), make sure to describe the sea surface temperature anomaly (comparison of sea surface temperature under an El Niño/La Niña condition to the normal condition).

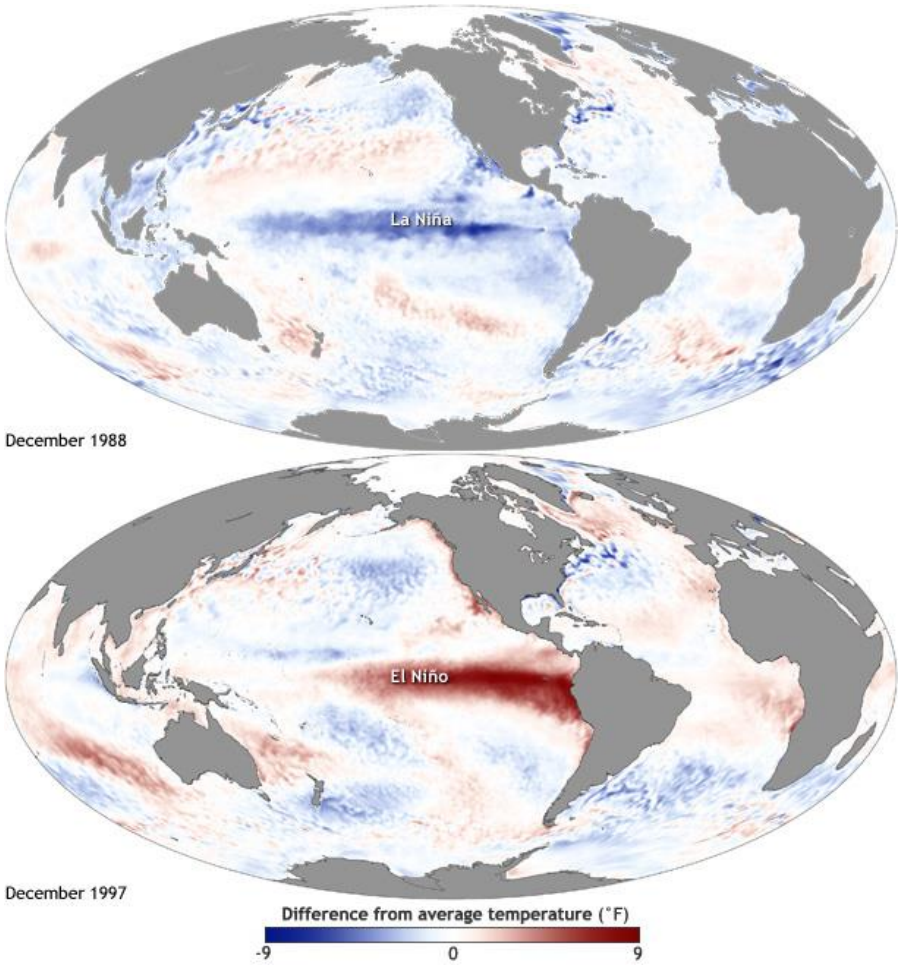

Figure 1: Sea surface temperature differences from an average condition under an El Niño/La Niña event
Source: https://www.climate.gov/news-features/blogs/enso/what-el-niño–southern-oscillation-enso-nutshell

2) **Sea Surface Temperatures:** The sea-surface temperature changes during El Niño/La Niña events are associated with changes in atmospheric circulations (Figure 2). Compared to the normal conditions, identify regions where major circulation *change* occurs (hint: look at where the greatest cloud buildup occurs). What is happening there? How have the circulation dynamics changed? What is the relationship between sea surface temperature change and the location of rising and sinking air? Identify where increased rising air is occurring,

and also where increased sinking air is occurring. What is the association with the shift of warmer/colder sea-surface temperatures and rising branch of air and sinking branch of air? What typically happens with the regions of rising branch of air and sinking branch of air? It may be very helpful to first characterize the normal conditions and then describe how conditions change during El Nino and La Nina.

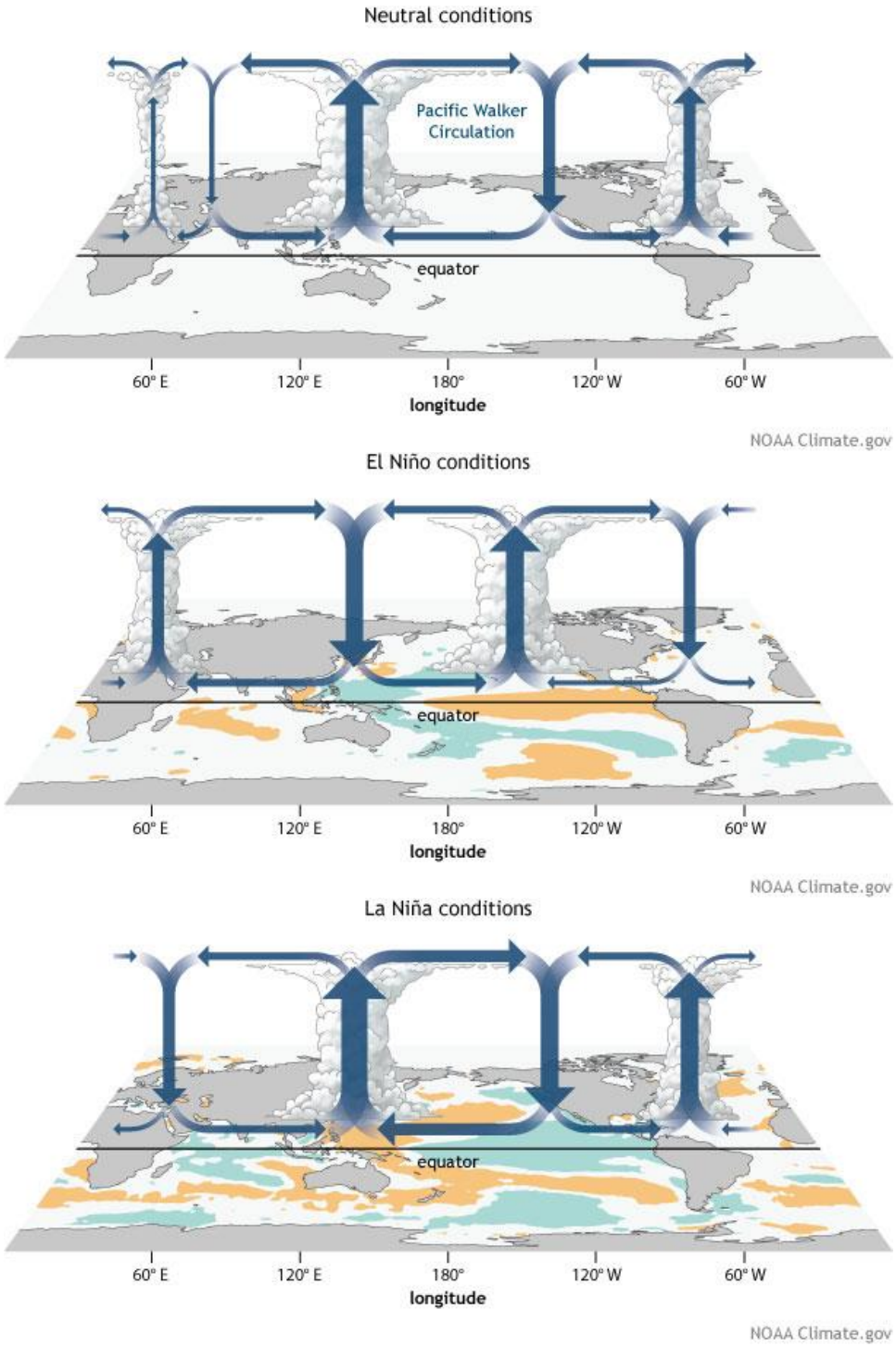

Figure 2: Changes in atmospheric circulation during El Niño and La Niña events
Source: https://www.climate.gov/news-features/blogs/enso/walker-circulation-ensos-atmospheric-buddy

3) **Impact on Weather:** In the final body paragraph, use the image below (Figure 3) and describe what changes in temperature and precipitation ***typically*** occur with an El Niño (and La Niña) event in various regions in North America. Again, use your textbook as a primary reference if necessary. Try to describe what regions are experiencing warmer or cooler conditions along with which locations are experiencing wetter or drier conditions.

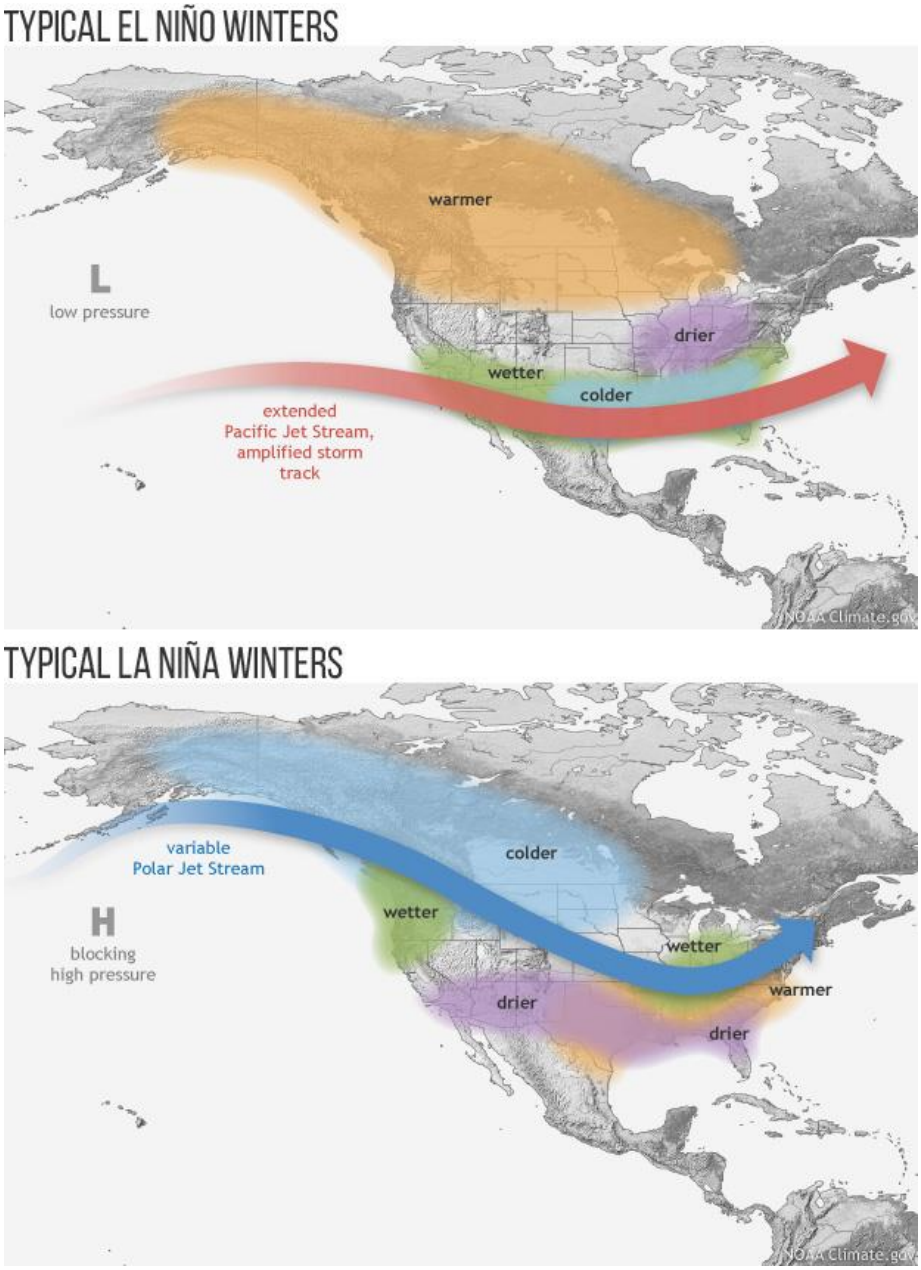

Figure 3: Temperature and precipitation differences
from average conditions under an El Niño/La Niña event
Source: https://www.climate.gov/news-features/featured-images/how-el-niño-and-la-niña-affect-winter-jet-stream-and-us-climate

4) **Introduction and Conclusion**: Once you have completed the 3 body paragraphs, it will be much easier to introduce them. You are now familiar with the information that comprises the main body of the essay. For the introduction, simply make a statement about the essay's topic. What is the purpose of this essay? Then write a short statement about each of the three body paragraphs to describe what will be discussed there. For the conclusion you want to focus on summarizing what was discussed by reducing each paragraph to its essential take-away message. Do not repeat yourself, but do focus on summarizing the content. This last section will be much more of a summary than what you would normally consider a conclusion.

MAKE SURE YOU LOOK AT THE RUBRIC TO UNDERSTAND HOW THIS WILL BE GRADED.