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METR 112
Homework #1

1) Please explain what the simple difference is between: (a) weather, (b) climate, and (c) climate change. (6)

Ans : “ Climate is what you expect; weather is what you get. “

Weather is state of the atmosphere at the specific time. When we say today is hot and the temperature is 23 degree or today is cold and the temperature is 10 degree then we referring to whether. Weather is essential to make short term decision, for example, take an umbrella, today is raining. Climate is “statistical description of the weather” for example average of temperature. Climate is better for long term decision for example winter is good to build Ice skating ring because weather we know in winter weather would be cold all the time. Climate change is a change in climate for example when climate change from summer to fall and fall to winter. Most of the location has a significant change in temperature due to climate change.

2) What are four other weather variables, other than air temperature, that would be important when studying climate change? (4)

Ans -

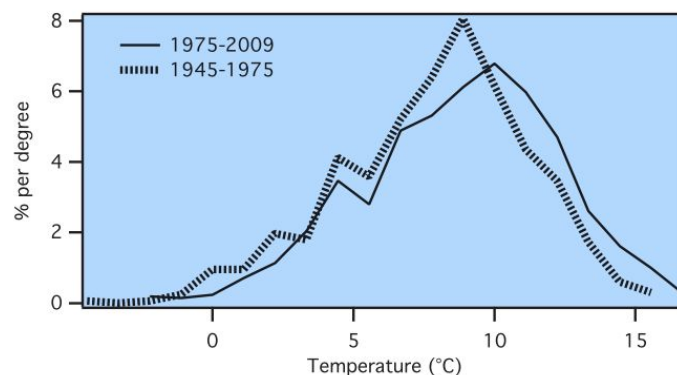
1. Air pressure
2. Wind Speed
3. Wind Direction
4. Wind Gust
5. Rainfall
6. Snowfall
7. Dewpoint temperature

3) What is the best way to determine whether or not a scientific claim is valid? What is the problem with relying on your own personal experiences for determining whether you think a scientific claim is valid in climate science? (6)

Ans : You can simply see in your own experience for example if someone claim weather is stable then you see every sample climate change happen which proves the claim is valid. In the other hand for the scientific claim, you can see how smoke has a negative impact on health, therefore. “If you are a believer in unfettered freedom, you might choose to simply reject this claim out of hand because it implies that governments should regulate smoking in public places to protect public health. ”. When you rely on your value then problem is that values are not correctly scientifically proven and also problem with firsthand experience that values change person to person.

4) Please summarize Figure 1.2 from Dessler (textbook) in your own words in no more than 3 sentences. (3)

Ans :



Frequency of occurrence of daily low temperature in August in Fairbanks, AK for two periods, 1945–1975 and 1975–2009 (data obtained from the National Climatic Data Center; <http://cdo.ncdc.noaa.gov>).

Figure 1.2 shows minimum temperature in August at Fairbanks, AK for two times first 1945-1975 and second 1975-2009. The daily minimum temperature changed from 7.6 degrees C to 8.5 degrees C.

Figure show there is more frequent warm temperature but thats not happen in case of cold temperature. This could happen because of global warming.

5) Describe the differences between the two temperature scales of Celsius and Fahrenheit. (4)

Ans: Celsius and Fahrenheit are two unit to measure temperature. Celsius used by scientist and also worldwide and on the other hand Fahrenheit used in United State and few another country. There is a correlation in that for example freezing and boiling temperatures of water in the Celsius scale are 0°C and 100°C, respectively. In the Fahrenheit scale, these temperatures are 32 °F and 212 °F.

6) What is the area from 30 °S to 30 °N called? 30 °N to 60 °N? 60 °N to the North Pole? Where does the U.S. fall under? (5)

Ans : The region from 30°N to 30°S called tropics and it covers half the surface area of the planet. The region from 60 °N to the North Pole called mid-latitudes and it covers one-third area of the planet. The region from 30°N to 30°S called polar regions and it covers a one-sixth area of the planet. The United State fall between 30 ° N to 0 ° N which is “tropics”.

7) On an map, major lines that run from the North Pole to the South Pole are called ___equator___, and lines that run parallel from east to west are called ___Latitude___. (2)

8) Self-reflection exercise (minimum length=200 words): (10)

Climate change debate becoming an important part of human survival. This debate happening from last 20 years where human cutting a lot of trees and burning a lot of fuels which causing a change in temperature. There is no doubt that climate change is real. According to government research data, 90% of species are died due to global warming. I was influenced by my girlfriend (opinion leader) when she was taking environmental classes at UC Berkeley. She told me many facts which show how climate change going to destroy earth slowly-slowly. I believed my girlfriend because her professor was doing research on global warming. I think humankind should start thinking about climate change especially our politician. Our politician is making a decision on based on short term benefits, for example, cutting forest and tree to build more building. I personally changing myself to use an eco friendly product. There are many new companies coming with eco-friendly environment ideas, for example, Tesla car is 100% environmentally safe and solar energy also 100% environmentally safe. I think the government should encourage more small businesses to build eco-friendly infrastructure and also give more subsidies to consumers. We should not think only about current generation but also for our future generation. We should start a mission to save this planet for next generations.