

The Grey Change

The Bay Area is home to beautiful mild weather all year round. A light sprinkle of rain in the winter, beautiful spring days, and perfectly warm summers, what more could you ask for? Nothing, nothing at all. Dreadfully, the weather in sunny northern California will not always be so cordial.

99.84% of California is experiencing a drought right now (Tech Times). Did you know that climate change costs the United States on average 100 billion dollars each year (Tech Times)? Worst of all, 37% of Americans believe that global warming is a hoax and 64% don't believe that climate change will seriously affect their way of life (Tech Times). If people don't believe that climate change is happening in the Bay Area, then helping to counteract it will become that much harder.

You have probably heard the term 'global warming' more often than 'climate change'. Climate change is the more politically correct term for the change of the earth as we know it, while the term 'global warming' refers only to the increase in Earth's temperature. U.S. average temperature has increased by 1.3°F to 1.9°F since record keeping began in 1895 (National Climate Assessment). In other words, if we don't stop creating greenhouse gases then our planet will just keep heating up and eventually become uninhabitable. Climate change is a very serious circumstance. There are certain places on Earth where climate change will affect the human population more than others.

The main cause of global warming comes from the burning of fossil fuels such as coal, oil, and natural gas. Burning these things releases toxic greenhouse gases into the

atmosphere. These gases create a blanket like atmosphere over the Earth which retains heat. Another main factor of global warming is deforestation. An article by the New England Aquarium suggests that, “when forests are cut down or burned, they can no longer store carbon, and the carbon is released to the atmosphere. The result is global warming. Today, current levels of carbon dioxide in the atmosphere are higher than at any time during the last 800,000 years” (“The Basics: A Brief Introduction to Climate Change”). How much warmer the atmosphere will reach depends solely on how effectively people can reduce activities that cause these rising temperatures.

The Silicon Valley, also known as the Bay Area of California, has already been experiencing a major climate change for the past five years. California as a whole has been in an extensive drought for the better part of the last decade. Climate change is an inevitable matter that dates far back in time, and will exist far in the future both in the Bay Area and on Planet Earth as a whole.

Since the beginning of the Industrial Revolution in the early 1700s, carbon emissions has become more widely known and talked about. Climate change has been on the radar of humans for the past few hundred years. In the history of climate change, getting all countries to agree upon how to counteract it has been quite the challenge. 1998 was the warmest year in the past 1,000 years, with the 90s being the warmest decade as a whole (Twentieth Century Warmest of the Past Ten Centuries).

Human activities have made quite the impact on global climate change in several ways. Productions from humans include carbon dioxide, methane, nitrous oxide, and halocarbons; all of which contribute to the greenhouse gas effect surrounding our

planet. An estimated 150,000 lives are taken annually by climate change. Although there have been countless reasons for climate change, humans are the predominant reason for the rapidly changing climate.

The Bay Area is more than subject to climate change based on its location. Coastal areas will be subject to sea level rise resulting from widespread melting of polar regions, combined with thermal expansion of our seas, which could significantly impact the most populous regions of California (Climate Change Adaptation for the San Francisco Bay Area). "Assuming 55 inches of sea level rise an estimated 270,000 people in the Bay Area are at risk of flooding This could also risk the long-term sustainability of wetland restoration projects located in Suisun, San Pablo and South San Francisco Bay's" (Climate Change Adaptation). Not only would sea level rise impact the housing situation of people in the Bay Area, but it would cost billions of dollars to relocate those people and rebuild the things that will be under water. With the sea level rise, the famous Golden Gate Bridge would also stoop three or four feet further under water. Also, the temperatures in the Bay Area are likely to increase. We would likely see more days with temperatures above 81 degrees, which is higher than what most are accustomed to. While this may not seem that horrible, not many people own air conditioners. So, there would need to be a huge investment in those to keep all the citizens happy. In all, the Bay Area will be affected greatly by the changing climate due to its heavy population living in coastal areas.

The future of climate change is unbeknown to humans at the moment. However, there have been countless predictions on what climate change will bring to the world if

we don't make a real effort to stop it. Greenhouse gas concentrations in the atmosphere will continue to increase unless the billions of tons of our annual emissions decrease substantially (Future Climate Change). Eventually the gas emissions will lead to an increase of Earth's temperature, raised sea level, and increased acidity of oceans. Not to mention a shift in ecosystem characteristics and a reduced ice and snow cover.

Ultimately climate change will influence the patterns of precipitation and increase overall threats to human health (Future Climate Change). For the next two decades, a warming of about 0.2°C per decade is projected (Projections of Future Changes in Climate). This would push people to move out of already hot climates. In turn, this would cause an overpopulation and migration of the millions of people living near the equator, where it is warmest. Recent studies by the UNFCCC secretariat showed that an incremental level of annual investment and financial flows of about USD 50 billion is needed for adaptation in 2030 (Parry). U.S. average temperature has increased by 1.3°F to 1.9°F since record keeping began in 1895. Because the planet is warming up so drastically, there will soon be no more arctic ice floating about in the oceans. This will not only affect animals that use that ice for feeding and growth, but it will also affect the sea level. The sea has already risen significantly: From 1901 to 2010, global mean sea level rose by 0.62 feet (5 Terrifying Facts). When so much ice melts, the level of the sea increases, and will eventually force people living on the coasts of continents to relocate. Global climate change will pose increases in cases of asthma, allergies, cancer, cardiovascular disease, stroke, foodborne disease, heat-related death, neurological

disease, waterborne disease, weather-related death, and mental health disorders ("National Climate Assessment.").

It is estimated that by 2080 northern California's Bay Area will experience weather like San Diego, while the Bay Area's weather will soon take over Seattle's wetter weather ("Climate Change: Future Bay Area Weather Will Be More like San Diego's"). While some people are looking forward to living in a warmer environment, some are upset about the weather changes. The Bay Area as a whole will need to do some adjusting to the weather. In the long run there will be a negative impact on our food supply, water resources, infrastructure, ecosystems, and even our own health.

Planet Earth is a forever changing phenomenon and so is the climate that exists on it. The climate in the Bay Area is especially important because it is home to millions of people. Climate change has been an issue for hundreds of years and will continue to be an issue in the future. The future of the Bay Area is gloomy if a serious change in carbon emissions is not made. It has been noted by numerous scientists that, "even if the world stopped emitting all greenhouse gases today, scientists say, the climate would continue to change, perhaps for centuries, before it stabilized" ("Report: Bay Area's Biggest Climate Change Risks."). There are multiple solutions to climate change including moving closer to where you work. If you live closer to your job then you won't have to use gasoline to drive to work or even carpool. You could also consume less that comes in plastic, for example plastic water bottles. Lastly, you could go vegetarian! As I mentioned earlier, meat production uses an immense amount of water, so if just one person stops eating meat the water supply would begin to replenish itself. One thing I

know is that climate change *is* real and the longer we wait to do something about it, the worse it will become. So why wait? Let's change our environment today. Let's make this Earth a place that hundreds of generations can live on for. It's going to be a lot of work to make a serious change, but together we can do it.

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