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Collaborative Research Assignment

Climate change: Is global warming a hoax? Is it being exaggerated?

Why is Climate Change a Controversy?

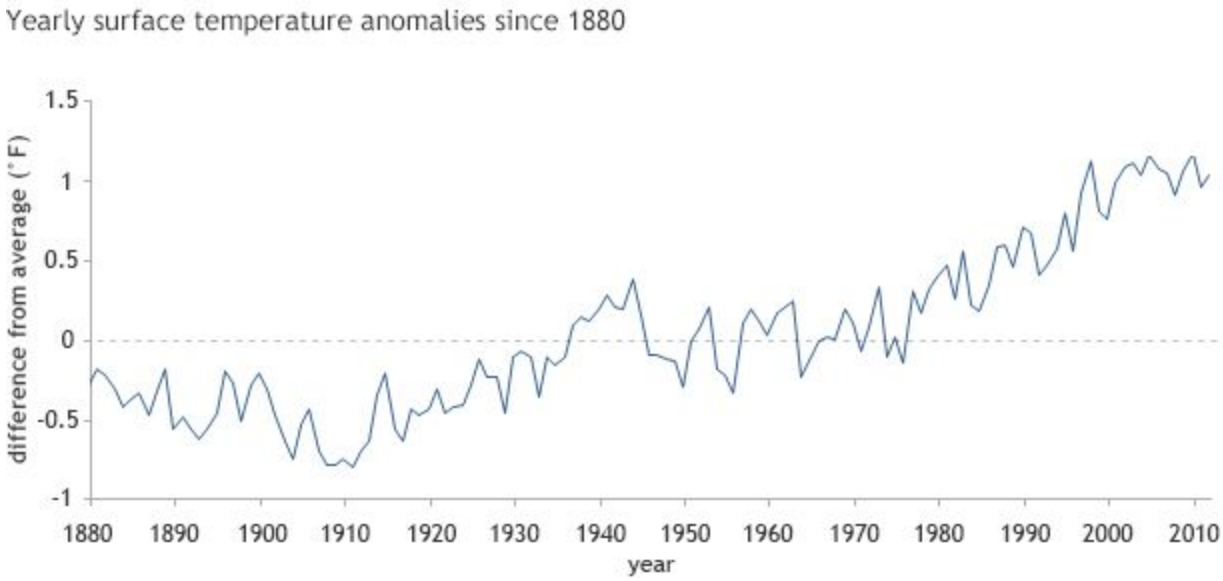
There has been much speculation about climate change. What is climate change? According to National Geographic, climate change is the long-term alteration of temperature and normal weather patterns in place. Ecosystems and habitats have been altered by drastic changes in the weather. For example, climate change reduces an ecosystem's ability to improve water quality and regulate water flows. Despite the clear examples of the devastation that climate change has caused, there are still skeptics who do not believe that climate change is affecting everyone. There are people who actively work to undermine climate change and the efforts to implement a policy that would reverse the effects of global warming. There are many reasons why people would work to discredit climate change. Nevertheless, climate change is a critical issue which should be given attention and solutions should be implemented to save the planet.

Many people see climate change as a hoax. But why? In "Climategate" and The Scientific Ethos Reiner Grundmann investigates sources of contention for the climate change movement. According to Grundmann, "E-mails from the Climate Research Unit at the University of East Anglia revealed scientists in an unfavorable light" (Grundmann,67). Specifically, Grundmann points out that the leaked emails created "a consensus was being orchestrated through the manipulation of data"(Grundmann, 68). The consensus was that global warming is not a primary issue. The scientists involved in these emails used scientifically unethical ways such as not presenting all data and manipulating the ones they could in order to gain a desired

result. Activities like this would undermine the climate change movement. With this being said, the scientific community plays a big role in exposing false information. But it is also up to everyday people to be able to filter through the sources of where information is being provided and determine if it is accurate or not.

Global Temperatures Are Rising

Global warming is definitely not a hoax; it is proven in studies showing that the overall temperature of planet Earth has risen. There are many contributing factors leading to an overall rise in temperatures ranging from emissions of harmful gases into the atmosphere or destruction of our ozone layer. It is shown that most of these factors are caused by humans. "According to an ongoing temperature analysis conducted by scientists at NASA's Goddard Institute for Space Studies (GISS), the average global temperature on Earth has increased by about 0.8° Celsius (1.4° Fahrenheit) since 1880" (earthobservatory.nasa.gov). A major factor that is leading to higher global temperatures is CO2 emissions into the atmosphere. This is from all of the machinery and cars that are being used. Although people need to use them since they are a part of everyday life, there are preventative ways that can help reduce the amount of CO2 emissions. The bad parts about a rise in overall global temperatures are even if the Earth's average has risen up by less than a full degree, it is still negatively impacting the world to an extensive degree because organisms and creatures are all created in ways that are adapted to the environment we live in now. If it was five degrees colder, there would be an ice age. If the Earth goes a few degrees warmer, everything will be underwater because all the glaciers and ice would have melted. People do not see how they are impacting the Earth because we are selfish beings, but awareness has to be spread to help protect the Earth.



YearlySurfaceTempAnom1880-2010.jpg

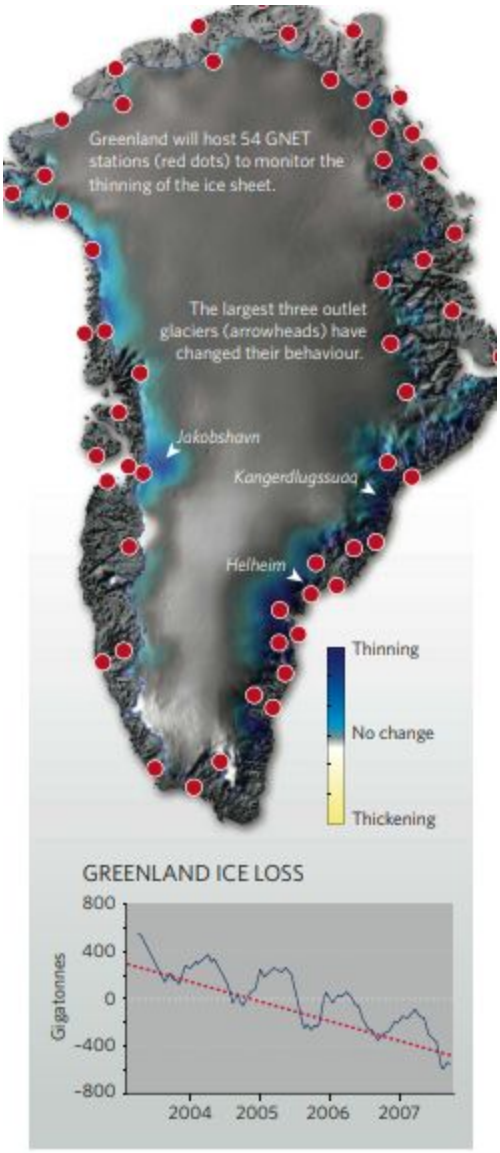
The image above shows how the Earth's temperatures have changed from 1880 to 2010. It is shown that the average temperature of the Earth has risen about 1.4 degrees Fahrenheit in that span of 30 years. Although that may not seem like a drastic change, it is definitely impacting ecosystems and animals and many survival rates are decreasing.

The Acceleration of Glacial Melting Rates

One of the most leading evidence for global warming is the acceleration of glacial melting rates. Greenland is one area where this change is demonstrated. In 2012, the annual ice loss is reported to be four times more than that of 2003. Not only was the rate found shocking but also the location of where the glaciers were found. "Much of this new accelerated ice melt came from southwest Greenland, a part of the island that hadn't been known to be losing ice that rapidly" (¶ 3). Greenland is not the only area affected. Ian Howat, a glaciologist at Ohio State

University in Columbus, observed that “Climate change elsewhere in the Arctic has been swifter than anticipated”(Witze, ¶ 5). Climate change is evident in the fact that the rates of glaciers melting have been increasing rapidly and affecting areas where melting rates were not severe in prior years. This means that without a doubt, global warming is affecting various areas around the globe and should not be taken lightly.

Another area where glacial melting rates have rapidly increased is Antarctica. Antarctica is known to be one of the coldest places on Earth. It alone holds 90% of ice found on the planet and it is another victim to global warming. Underwood Glacier, Bond Glacier, Vanderford Glacier, and Totten Glacier are just four examples of glaciers found in East Antarctica to have been affected by global warming. Annual ice loss shows the height of these four glaciers to have lowered by 9 feet since 2008. It can be said that the effects of global warming also greatly affect Antarctica as can be supported by the drastic change in glacial heights. If the effects of global warming continue, they would not only affect glacial melting rates but other factors including the rise in sea levels.



Witze, Alexandra. "Climate Change: Losing Greenland." Nature, vol. 452, no. 7189, Apr. 2008, p. 1. EBSCOhost, doi:10.1038/452798a.

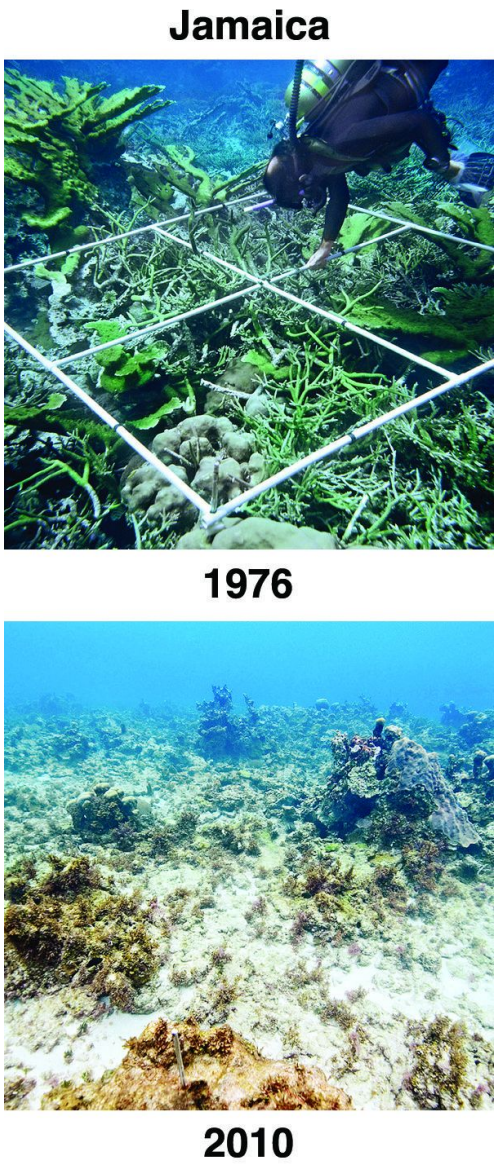
This is an image showing Greenland Ice Loss in Gigatonnes from 2004 to 2007

Effects of Global Warming on the Rise in Sea Levels & Acidity of Oceans

The third leading factor of global warming is the rise in sea levels and acidity of oceans. As we continue to pour greenhouse gases into the atmosphere, the oceans will become the scapegoat of our actions. According to National Geographic, seas have absorbed more than 90

percent of heat from these gases. Surprisingly, 2018 sets a new record for ocean heating. “ Average sea levels have grown past 8 inches since 1880, with approximately 3 inches over the last 25 years. Unfortunately, every year the sea rises another 0.13 inches”(National Geographic "Sea level rise, explained" 2019). The change in sea levels is linked to three primary factors, all induced by ongoing climate change: thermal expansion, melting glaciers, and loss of Greenland and Antarctic ice sheets.

According to a study that was conducted by Katsumi Matsumoto and Ben Mcneil, the global ocean has absorbed nearly half of all the fossil fuel CO2 emitted into the atmosphere (Matsumoto et al. 2012). Ocean acidification is a huge concern because it affects marine organisms. For corals, imported shellfish, and other calcareous organisms in the ocean, a drop in carbonate (CO3) increases the energy costs of calcification at a cost of growth and reproduction. It also reduces the equilibrium of their calcium carbonate (CaCO3). Acidification is also expected to impact non-calcifying organisms in the ocean. Based on past research, the health of many fish and their physiological functions were greatly affected by acidification (Devine et al. 2012). The pH also influences the chemical evolution of different elements such as iron ,which is an important micronutrient for phytoplankton. In essence, ocean acidification may have a serious impact on the larger food web.



www.pinterest.com/pin/316660036100997 40/?lp=true.

Image showing the gradual change of ocean acidity in an ocean in Jamaica

The Fight Against Global Warming & Its Effects

Global warming is one of the top concerns in today's world. It affects everything and everyone on the planet. While some people may be uncertain of the existence of global warming

and its effects, it is very real. As inhibitors of Earth, we have a duty to preserve it from the effects of global warming.

One major influencer that advocates for people to pay more attention to how we are treating this Earth is Leonardo DiCaprio. DiCaprio may not be seen as an expert on global warming but is seen as a scholarly source because of his formation of a Foundation called the "Leonardo DiCaprio Foundation". In DiCaprio's Grammy speech, he said: "Climate change is real, it is happening right now, it is the most urgent threat facing our entire species, and we need to work collectively together and stop procrastinating". After winning an Oscar for the movie "The Revenant", DiCaprio stated in his speech that it was so difficult to find a spot to film the movie because they needed a snowy arctic environment, and because of global warming, that type of environment was hard to find. Luckily, with his fame, DiCaprio is a good advocate because of his ability to not only be able to spread his message but also successfully inspire people to change their ways since he is a model figure to many. Along with Leonardo DiCaprio, many other important figures such as Akon, Jared Leto, Jane Fonda, and Emma Thompson.

https://www.climaterealityproject.org/blog/telling-story-five-times-leonardo-dicaprio-spoke-out-climate-change

Leonardo DiCaprio Speaking at the Academy Awards

The Final Word

To conclude, climate change is a real issue. Global temperatures are rising, glaciers are melting, and sea levels are rising along with ocean acidity. Many times politicians and lawmakers are worried about climate change efforts disrupting the economy. Codes of conduct need to be followed to effectively tackle climate change and climate change should not be politicized. Bad or short-sighted behavior from scientists would only undermine the movement and give more fuel to the cantankerous political environment which is oftentimes counter-productive and serves special interests.

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