

STAND UP

Against Climate Change

Stuart A. Kallen



Teen Activism
LIBRARY



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CHAPTER ONE

The Issue Is Climate Change

In January 2021 climate scientists at the University of Leeds in England released an alarming report. Research revealed that the ice on earth was melting much faster than current climate models predicted. The Leeds study looked at ice that was once considered a permanent part of the earth's environment. The ice includes massive sheets covering the Arctic Ocean, around two hundred thousand mountain glaciers, and vast expanses of frozen water more than 1 mile (1.6 km) thick at the North and South Poles.

Researchers examined ice melts from 1994 to 2017. They found that during the 1990s the earth was losing an average of 760 billion tons (689 billion metric tons) of ice per year. By 2017 that number had grown to more than 1.2 trillion tons (1.09 trillion metric tons). That amount of ice is roughly equivalent to a sheet of frozen water 328 feet (100 m) thick covering the entire state of Michigan. While the numbers are almost impossible to grasp, the conclusion of the study is not difficult to understand. According to ice sheet researcher Robin Bell, "Ice on our planet is melting. We have turned up the temperature, and just like you can watch an ice cube in your glass melt on a hot summer day, our actions are melting our planet's ice."⁶

The actions Bell refers to include driving gas-powered vehicles, using coal to generate electric power, and burning

natural gas to produce everything from food to steel and cement. In other words, the ice is melting due to modern society's consumption of fossil fuels.

Planet-Warming Problems

Coal, oil, and natural gas have contributed to the rapid advancement of human society and culture since the nineteenth century. Fossil fuels directly or indirectly power much of the world's transportation, refrigeration, heating, lighting, water purification, and medical and telecommunications equipment. But all those modern conveniences come at a cost; fossil fuel consumption is causing the planet to get hotter. This is due to the greenhouse effect: when fossil fuels are burned, they produce gases that trap the sun's heat in the atmosphere.

When coal, oil, and natural gas are burned, they produce carbon dioxide (CO₂). This gas is responsible for about 80 percent of planet-warming pollution. Methane, emitted by livestock and through fossil fuel production, accounts for around 10 percent of climate pollution. Nitrous oxide, used to treat wastewater and produce fertilizer, is responsible for roughly another 7 percent of all planet-warming gases. Since 1900 these gases in the atmosphere have caused average global temperature to increase by about 2°F (1.1°C). While two degrees does not sound like much, the rising temperatures have upset the balance of nature. The rising heat is behind the extreme droughts and massive wildfires that have disrupted life from the American West to Australia. In the Midwest, climate change is increasing the number and intensity of destructive rainstorms and floods. The oceans, which absorb around 90 percent of the heat trapped in the atmosphere, are also warming. Ocean surface temperatures have increased by an average of 1°F (0.56°C) over the past century. This has fueled bigger and deadlier hurricanes and tropical cyclones from Florida to the Philippines.

The problems caused by climate change are expected to increase as the planet continues to warm. The five hottest years on

record have all occurred since 2015. Average summer temperatures in 2020 were the highest ever recorded around the globe, according to the US science agency National Oceanic and Atmospheric Administration. At least fifty cities worldwide set records for extreme heat as temperatures rose to record levels on every continent. And by 2040 the number of heat waves is expected to quadruple worldwide unless carbon emissions are drastically reduced, according to a study by the journal *Environmental Research Letters*.

Warning the World

In the 1980s, when environmental activists first started talking about climate change, the issue was referred to as global warming or the greenhouse effect. The problem first made international headlines in 1988 when climate scientist James Hansen appeared before the US Senate Committee on Energy and Natural Resources. Hansen bluntly warned senators that there was a 99 percent certainty that humanity was causing the climate to change



This sign in the Kenai Peninsula, Alaska, indicates how far the glacier that appears in the distance has retreated since the year 1978. This massive glacial retreat is typical as the earth's climate warms.

by burning fossil fuels: “It’s time to stop waffling so much and say that the greenhouse effect is here and affecting our climate now.”⁷

Before Hansen’s Senate testimony, fewer than 40 percent of Americans had ever heard of climate change. Most who had heard about global warming thought it was a problem for future generations. But in 1988, after Hansen’s words made headlines around the globe, 58 percent of Americans said they had heard about global warming.

After Hansen’s testimony, research on climate science increased significantly. Climatologists ran thousands of increasingly sophisticated experiments to prove how and why the climate was changing. In 2020 the National Aeronautics and Space Administration (NASA) revisited seventeen research projects conducted over a thirty-year period. The predictions in fourteen of the studies proved to be very accurate when compared to actual changes in the atmosphere. The studies neither overestimated nor underestimated the actual observed warming of surface and ocean temperatures. As director of NASA’s Goddard Institute for Space Studies Gavin Schmidt said in 2020, “The results of this study of past climate models bolster scientists’ confidence that both [the older studies] as well as today’s more advanced climate models are skillfully projecting global warming.”⁸

Science and Politics

Despite the scientific consensus, climate change became a polarizing issue over the years. Even in 2021 millions of Americans either doubted that climate change is serious or denied that the problem exists at all. This has left activists to fight more than climate change; they also must push back against climate change deniers. To understand why, it is helpful to look at how the science of climate change was politicized.

Almost immediately after Hansen testified before the Senate, major emitters of global warming pollution sought to cast doubt on the severity of climate change. Multinational oil companies, coal producers, steelmakers, and other polluters hired research-

When the Ice Melts

Most of the ice on earth is located on land in Greenland, the Arctic Circle, and Antarctica. When the ice melts, the water runs into the oceans, raising sea levels around the globe. According to the United Nations' Intergovernmental Panel on Climate Change, if ice continues to melt at its current rapid rate, sea levels will rise by as much as 3 feet (1 m) by 2100. This would make dozens of coastal cities uninhabitable, including New York City, Miami, Venice, Italy, Bangkok, Thailand, and Hong Kong.

Rising sea levels are already causing floods and other problems in many places. And as the ice melts, the earth warms faster because ice plays a very important role in regulating the climate. When the sun's rays hit the earth, 70 percent of the heat is absorbed by the land, oceans, plants, and objects like buildings and roads. Around 30 percent of the sun's energy strikes ice and snow at the poles and elsewhere. This reflects the heat of the sun back into space. With the ice at the poles melting faster than ever, the Arctic is warming twice as fast as the rest of the planet.

ers to cast doubt on the work of climate scientists. This small but vocal group of researchers conducted industry-financed studies that either denied temperatures were rising or falsely blamed global warming on sunspots or long-term weather patterns that had nothing to do with human activity.

While climate deniers published industry-funded studies, wealthy conservatives and major corporations spent millions of dollars to found policy institutes, or think tanks, whose main purpose was to cast doubt on climate science. Think tanks like the Competitive Enterprise Institute and the Heartland Institute, which continue to operate, produce climate-denial editorials in the media and provide spokespersons to voice their opinions on news programs and talk shows. As one unnamed historian stated, this type of debate was “transforming the issue from one of scientific concern to one of political controversy.”⁹


In addition to funding climate-denial think tanks, corporations have funded the political campaigns of antiscience politicians. In 2019 there were 150 Republican members of Congress who denied the scientific consensus that climate change is a threat to humanity. Together these climate deniers received more than \$68

million in direct contributions from the fossil fuel industry, according to the Center for Responsive Politics, which tracks political donations.

The efforts of the deniers succeeded in turning climate change into a political wedge issue. In 2020 polling from the Yale Program on Climate Change Communications showed that 18 percent of Americans were doubtful or dismissive of climate change science, while 8 percent were disengaged or uninterested in the problem.

Climate Conventions

While Americans might be divided on the issue of climate change, the international community has responded. In 1988 the United Nations and the World Meteorological Organization founded the Intergovernmental Panel on Climate Change (IPCC) to provide unbiased scientific information about human-induced climate change. The IPCC is composed of twenty-five hundred experts from more than sixty countries who work in widely divergent fields such as climatology, ecology, economics, medicine, and oceanography. In 1990 the IPCC released its first climate report, which concluded, “We are certain emissions resulting from human activi-



As automobiles burn fossil fuels, they emit carbon dioxide, which traps the sun's heat in Earth's atmosphere, causing rising temperatures.

ties are substantially increasing the atmospheric concentrations of the greenhouse gases: carbon dioxide, methane . . . and nitrous oxide. These increases will enhance the greenhouse effect, resulting on average in an additional warming of the Earth's surface."¹⁰

The IPCC released another report with similar conclusions in January 1992. The following June the United Nations Conference on Environmental Development held a twelve-day convention in Rio de Janeiro known as the Earth Summit. The Earth Summit was attended by heads of state from 102 countries. About seventeen thousand others from environmental groups and nongovernmental organizations also attended the summit.

Delegates at the Earth Summit produced the United Nations Framework Convention on Climate Change (UNFCCC), a treaty that was signed within months by government leaders in 154 countries, including the United States. The UNFCCC stated that industrial nations should take immediate steps to reduce climate-changing pollution. However, the framework was completely voluntary. Signatories did not have to set specific goals for reduction, there was no time frame set for reducing emissions, and no penalties were proposed for those that violated the recommendations.

The Convention on Climate Change continued to hold annual conferences throughout the world. New goals to reduce climate pollution are set every year as the amount of CO₂ in the atmosphere continues to increase and the climate rapidly warms. One of the most substantial actions undertaken by the convention is known as the Paris Agreement. This international accord was signed by 197 countries. Signatories promise to substantially reduce greenhouse gas emissions to limit global warming. To do so, carbon pollution must be decreased by 45 percent by 2030 and reduced to zero by 2050. This would limit global warming to 2.7°F (1.5°C) by the end of the century.

Shifting Priorities

The United States signed on to the Paris Agreement in 2015 when Barack Obama was president. But the political back-and-forth

Fighting for Environmental Justice

When Joe Biden was elected president in 2020, he pledged to address the problems of climate change and environmental justice. The latter became part of his agenda thanks to the efforts of young activists who sought greater awareness of the effects of climate change on communities of color. Robert Bullard, leader of the Black Environmental Justice Network, explains, “It used to be that these mostly white, mainstream environmental groups would be . . . making the decisions and then call us to say what was decided. . . . We said, ‘Never again. We are not going to leave it to other folks to speak for us.’”

The work of climate justice groups like the Sunrise Movement could be seen in Biden’s choice to lead the US Department of the Interior, which manages 500 million acres (202 million ha) of land in the United States. Biden initially wanted to appoint a longtime Washington insider to head the department. However, after activists lobbied Biden, he nominated Debra Haaland, a US representative from New Mexico, to lead the department. After Haaland was confirmed in March 2021 she became the first Native American to lead the US Department of the Interior. She has promised to fiercely defend the planet from further warming.

Quoted in Evan Halper and Anna M. Phillips, “Environmental Justice Groups Seize Moment,” *Los Angeles Times*, January 31, 2021. <https://enewspaper.latimes.com>.

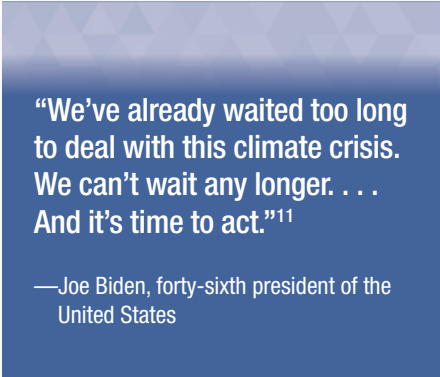
over the agreement demonstrates the political problems faced by climate activists. When Donald Trump ran for president in 2016, he repeatedly called climate change a hoax. After he won the election, Trump eliminated or weakened more than 130 regulations aimed at reducing the effects of climate change, according to Columbia University’s Sabin Center for Climate Change Law. The Trump administration also enacted policies that accelerated the production of fossil fuels and withdrew the United States from the Paris Agreement at the earliest possible date, which was November 4, 2020.

The day before the United States left the Paris Agreement, the country held a presidential election, which Trump ultimately lost to Joe Biden. When Biden was sworn in as president in January 2021, one of his first official acts was to sign an executive order to reenter the agreement. And during the first week of his

administration, Biden moved quickly to provide a massive federal response to climate change.

On January 27, 2021, Biden signed executive orders to pause production of oil and gas on federal lands and in federal waters. Environmental activists view this as an important step in reducing carbon pollution since about one-quarter of the country's carbon emissions come from coal, oil, and gas produced on lands managed by the US government. Biden also called for the creation of a Civilian Climate Corps that would put young Americans to work restoring public lands and waters, planting trees, improving access to parks, and tackling issues related to climate change.

Biden pledged that he would replace all vehicles owned by the federal government with electric vehicles. This is a massive undertaking; the federal fleet includes 50,000 passenger vans, 225,000 postal service vehicles, and over 200,000 passenger vehicles. Together they burn almost 400 million gallons (1.5 billion L) of gasoline annually. As Biden stated when announcing these measures, "We've already waited too long to deal with this climate crisis. We can't wait any longer. We see it with our own eyes, we feel it, we know it in our bones. And it's time to act."¹¹



"We've already waited too long to deal with this climate crisis. We can't wait any longer. . . . And it's time to act."¹¹

—Joe Biden, forty-sixth president of the United States

Making Politicians Keep Their Promises

Many climate activists were happy about Biden's initial steps to address climate change. At the same time, they understood that there was much work to be done. One problem was the way Biden pursued the new policies. When a president signs an executive order, it guides administration policies in many important ways. However, executive orders can be repealed by the next president. In fact, many of Biden's actions were aimed at reversing Trump's executive orders on environmental policy.

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WHERE TO GO FOR IDEAS AND INSPIRATION

Books

Jamie Bastedo, *Protectors of the Planet: Environmental Trailblazers from 7 to 97*. Markham, ON: Red Deer, 2020.

Stuart Kallen, *Teen Guide to Student Activism*. San Diego: ReferencePoint, 2019.

Jamie Margolin, *Youth to Power: Your Voice and How to Use It*. New York: Hachette, 2020.

KaeLyn Rich, *Girls Resist! A Guide to Activism, Leadership, and Starting a Revolution*. Philadelphia: Quirk, 2018.

Greta Thunberg, *No One Is Too Small to Make a Difference*. New York: Penguin, 2019.

Organizations and Other Websites

American Civil Liberties Union (ACLU)

www.aclu.org

The ACLU works to defend individual rights guaranteed in the Constitution. The organization's website features numerous articles with legal information about student rights, free speech, racial justice, privacy rights, and LGBTQ rights.

Climate Reality Project

www.climate realityproject.org

The Climate Reality Project was founded by former vice president Al Gore to mobilize more than nineteen thousand Climate Reality Leaders, who push for practical clean energy policies across the United States and elsewhere.

Earth Guardians

www.earthguardians.org

Earth Guardians is a student organization made up of activists, artists, and musicians dedicated to empowering young people to take over as leaders of the environmental movement. The group's

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