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July 15th, 2022

Dear Regina,

Welcome to BioMarketing Insight's monthly newsletter.

We hear people talk about global warming, climate change, going green and companies focusing on ESG, environmental, social and governance responsibility. We also hear about preventing global temperature from increasing to 1.5°C, what does this all mean?

This month I will cover "One Degree Celsius, Why Is Climate Change So Detrimental?". To read this article, go to the Table of Content and click on the link.

If you missed last month newsletter on "Using AI to Detect Breast Cancer", click on this [link](#) to read the article.

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difficult time, click on the "[Inspiration](#)" link to give yourself a few minutes to relax and enjoy the music from the Berklee School of Music in their song "What the World Needs Now," other inspirations and ending with Celine Dion and Josh Groban with "The Prayer".

Please read on for other current news in the Table of Content below. I'll be taking a break for the month of August and the next newsletter will be **September 15, 2022**

We encourage you to share this newsletter with your colleagues by using the social media icons below, or by simply forwarding this newsletter or use the link below. Should you or your colleagues want to join my mailing list, click on "join my email list" link below.

Please email [me](#), Regina Au, if you have any questions, comments, or suggestions.



Sincerely,
Regina Au
CEO, New Product Planning/Strategic Planning
[BioMarketing Insight](#)



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Developing a Product? Commercializing a Product?

If you are developing a product and have not conducted the business due diligence to determine commercial viability or success, contact [me](#) for an appointment. For successful commercial adoption of your product or looking to grow your business, contact [me](#) for an appointment.

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See Photos of the AAPI Heritage Festival - Saturday, May 7th, 2022

Asian American Pacific Islander (AAPI) Heritage month is a celebration of a diverse group of ethnic heritage within the Asian community who bring a wealth of enriched culture to our society. This celebration will endeavor to build awareness and educate our community on the various cultures and contributions these different Asian ethnic groups have brought to enrich our American Story.

History you may not know:

1. 20,000 Chinese men served in the military during WWII where 40% of the men served without American citizenship due to the "Chinese Exclusion Act". They were later honored in September 2021 with the Congressional Gold Medal for their acts of patriotism, loyalty, and courage for the US.
2. 110,000 Japanese American and Japanese were relocated to prison camps during the bombing of Pearl Harbor in 1941. In 1943, Japanese Americans were finally allowed to volunteer for the all-Japanese American 442nd Regiment that fought against the Japanese. These men were awarded the Congressional Gold Medal in

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Theme: [Contributions Asian American Pacific Islands Have Made to American History](#)

A walk-through [exhibit](#) highlighting the contributions AAPI have made to American History was on display.

The Festival was a huge success with a full agenda of speakers, including State Senator Cindy Friedman and fireside chats with [Shirley Leung](#) from The Boston Globe. We also had a full agenda of performers throughout the festival. We had [Tibetan dancers](#), [Cambodian dancer](#), [Japanese dancers](#), [Lion dance](#), Kung Fu demonstration and many [solo performers](#) playing traditional ethnic instruments. Click [here](#) for the full agenda.

In addition, we had exhibitors from the various ethnic groups displaying items representing their history and culture that complemented the contributions that AAPI have made to American History.

This is AAPI Heritage month, be sure to enjoy all the activities in your area celebrating the diverse group of ethnic heritage within the AAPI community who bring a wealth of enriched culture to our society and American History. It may surprise you the tremendous amount of people who have contributed to our society and American History.

I would like to leave you with this **one thought** "while everyone is unique in their own way, it is important to celebrate our differences and our commonalities. Every person has a vital contribution to make to society - all races, all ethnicities, all religions and all genders together form one human race.

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General Guidelines to Launch and Build a Clinical Trial Using Microbiome Products in an Era of Personalized Medicine.

I am pleased to announce that I was a speaker at the Westchester Biotech Project for Consortium on Translational Research in the Microbiome on November 11th, 2021. The Topic: General Guidelines to launch and build a clinical trial using microbiome products in an era of personalized medicine. My presentation was on " How to Launch and Market a Successful Microbiome Product: Five Major Considerations". For more information on this event, click [here](#). This webinar it will be available next month, so check back here.

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Fresh Thinking in the Next Normal

I am pleased to announce that I was a speaker at the Institute of Management Consultants event on "What Will the "Next Normal" Be for Productivity, Motivation and Retention of Employees? Four Things Employers Need to Consider." on July 20th, 2021 at 2 pm. For more information and to register click [here](#).

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Inspirations

Enjoy the song "What the World Needs Now" virtually with the students from the Berklee School of Music.



We Will Get Through It Together

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Let's End with Celine Dion & Josh Groban Singing "The Prayer"

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One Biotech Executive's View on the COVID-19 Vaccine

I am pleased to announce that my article on the COVID-19 Vaccine was published in Lioness Magazine. To read my article click on the link [here](#).

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One Degree Celsius, Why Is Climate Change So Detrimental?

Source: NASA Climate change

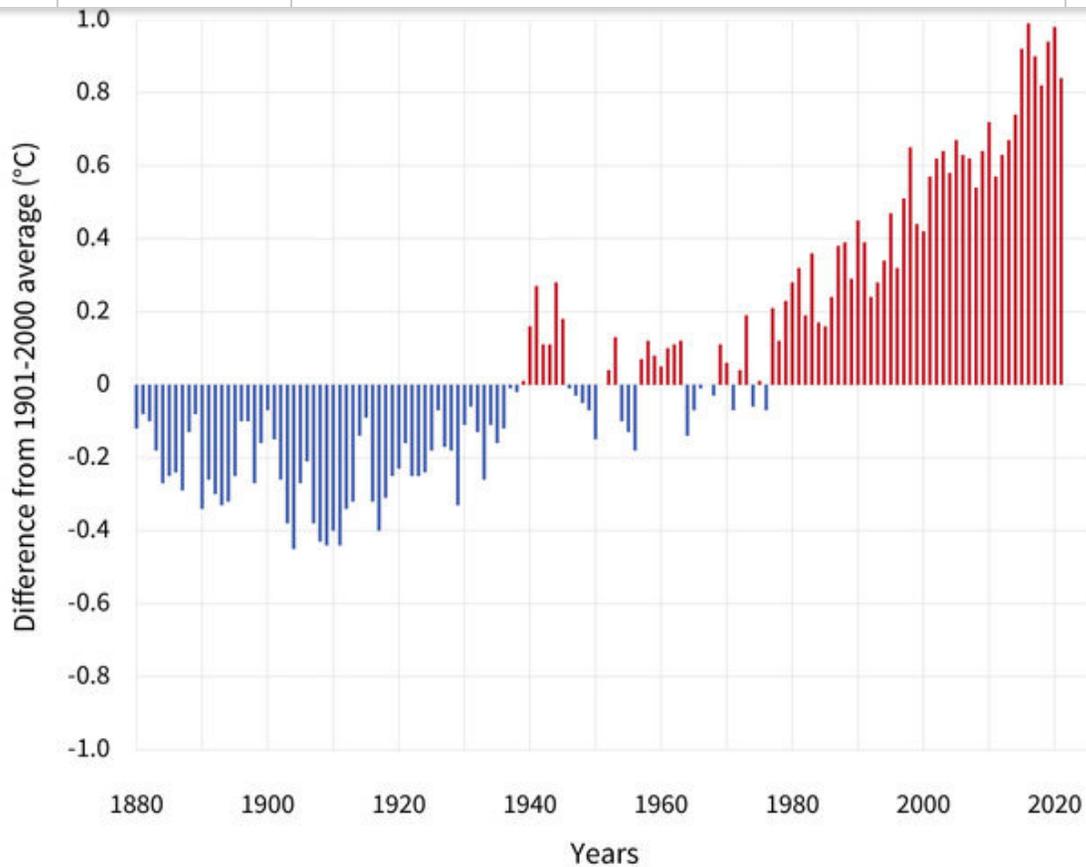
What is Climate Change?

[Climate change](#) represents an urgent and potentially irreversible threat to human societies and the planet. Majority of countries around the world recognized this threat and adopted the [Paris Agreement](#) in December 2015 with the central aim of including efforts to limit global temperature rise to 1.5°C.

Climate change didn't happen overnight. The [Kyoto Protocol](#), a landmark environmental treaty that was adopted in 1997 at the Conference of Paris (COP 3) in Japan, represents the first time nations agreed to legally mandated, country-specific emissions reduction targets. The protocol, which didn't go into effect until 2005, set binding emissions reduction targets for developed countries only, on the premise that they were responsible for most of the earth's high levels of [greenhouse gas emissions](#).

The Kyoto Protocol cover emissions of the [six main greenhouse gases](#), namely:

- Carbon dioxide (CO₂);
- Methane (CH₄);
- Nitrous oxide (N₂O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Sulphur hexafluoride (SF₆)

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Yearly surface temperature compared to the 20th-century average from 1880–2021. Blue bars indicate cooler-than-average years; red bars show warmer-than-average years. NOAA Climate.gov graph, based on [data](#) from the National Centers for Environmental Information.

[2021](#) was the sixth-warmest year on record based on the National Oceanic and Atmospheric Administration's (NOAA) temperature data. Averaged across land and ocean, the 2021 surface temperature was **1.51 °F (0.84 °Celsius)** warmer than the twentieth-century average of 57.0 °F (13.9 °C), and 1.87 °F (1.04 °C), warmer than the pre-industrial period (1880-1900).

[Earth's temperature](#) has risen by 0.14° Fahrenheit (0.08° Celsius) per decade since 1880, but the rate of warming since 1981 is more than twice that: 0.32° F (0.18° C) per decade. The nine years from 2013 through 2021 rank among the 10 warmest years on record.

Why is Preventing Temperature Reaching 1.5°C so Important?

Mother nature or our ecosystem is so intertwined with everything; plants, animals, land, sea and climate coexisting in harmony where one fed off and depended on each other. Any change in any one thing throws the whole balance of the ecosystem off. Depending on the

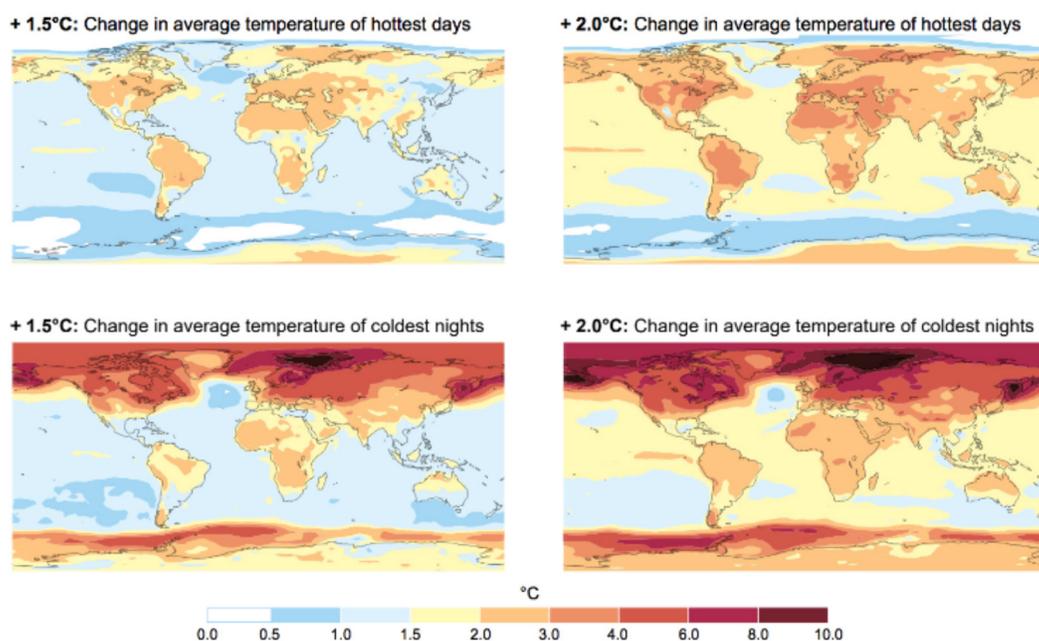
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geographic area. But when this change happens, it also affects everything around it that may depend on that plant or animal.

But as man industrialized, habitat for animals and plants started and continue to decrease and produced a dramatic increase in greenhouse gas emissions and pollution which leads to an increase in temperature sometimes called "the greenhouse effect".

Should the earth's temperature reach 1.5°C from the current temperature of 0.84°C, this will have a detrimental effect on everyone. If the earth's temperature reach 2.0°C, it will be catastrophic for everyone.

This is what will happen if the earth's temperature reaches [1.5°C](#) and [2.0°C](#):



Temperature change is not uniform across the globe. Projected changes are shown for the average temperature of the annual hottest day (top) and the annual coldest night (bottom) with 1.5 degrees Celsius of global warming (left) and 2 degrees Celsius of global warming (right) compared to pre-industrial levels. Credit: IPCC report

1) Warmest Temperature Extremes

The warmest extreme temperatures will be in Central and Eastern North America, Central and Southern Europe, the Mediterranean (including Southern Europe, Northern Africa and the near-East), as well as Western and Central Asia and Southern Africa.

According to the Intergovernmental Panel on Climate Change ([IPCC](#)) report, extreme

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Cold — In Earth's high latitudes, the coldest nights will be about 4.5 degrees Celsius (8.1 degrees Fahrenheit) warmer at 1.5 degrees of warming, compared to about 6 degrees Celsius (10.8 degrees Fahrenheit) warmer at 2 degrees of warming. Arctic land regions will see cold extremes warm by as much as 5.5 degrees Celsius (9.9 degrees Fahrenheit) at 1.5 degrees Celsius warming or less, while at warming of 1.5 to 2 degrees Celsius, cold extremes will be up to 8 degrees Celsius (14.4 degrees Fahrenheit) warmer. Cold spells will also be shorter.

2) Heat Waves

Most land regions will see more hot days, especially in the tropics. At 1.5 degrees Celsius warming, about 14 percent of Earth's population will be exposed to severe heatwaves at least once every five years, while at 2 degrees warming that number jumps to 37 percent. Extreme heatwaves will become widespread at 1.5 degrees Celsius warming.

Preventing warming to 1.5 degrees Celsius would reduce 420 million people frequently exposed to extreme heatwaves, and reduce about 65 million people exposed to exceptional heatwaves.

At Earth's mid-latitudes, at 1.5 degrees Celsius warming, the hottest days will be up to 3 degrees Celsius (5.4 degrees Fahrenheit) hotter and at 2 degrees Celsius warming, days will be up to 4 degrees Celsius (7.2 degrees Fahrenheit) warmer. The warmest extreme temperatures will be in Central and Eastern North America, Central and Southern Europe, the Mediterranean (including Southern Europe, Northern Africa and the near-East), Western and Central Asia and Southern Africa. Longer warm spells will affect many densely populated regions. Temperatures above 1.5 degrees Celsius will result in twice as many megacities compared to today are likely to become heat stressed, potentially exposing 350 million more people by 2050.

At 2 degrees Celsius warming, the deadly heat waves India and Pakistan saw in 2015 may occur annually.

3) Drought or Water Availability

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Image credit: NASA/JPL-Caltech

The IPCC report finds that by preventing warming to 1.5 degrees Celsius will significantly reduce the probability of drought and risks related to water availability in some regions, particularly in the Mediterranean (including Southern Europe, Northern Africa and the Near-East), and in Southern Africa, South America and Australia.

By preventing global warming reaching 1.5 degrees Celsius, up to 50% of the people around the planet may experience water stress caused by climate change, depending on future socioeconomic conditions. The degree will vary from region to region. People in river basins, especially in the Middle and Near East, will be particularly vulnerable.

4) Extreme Precipitation

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Flooding in Marblehead, Massachusetts, caused by Hurricane Sandy. The IPCC special report says heavy rainfall from tropical cyclones is projected to be higher as Earth continues to warm. Credit: The Birkes [CC BY 2.0 (<https://creativecommons.org/licenses/by/2.0>)]

At 2 degrees Celsius warming, some places will see an increase in heavy rainfall events compared to at 1.5 degrees warming, especially in the Northern Hemisphere high latitudes (Alaska/Western Canada, Eastern Canada/Greenland/Iceland, Northern Europe, Northern Asia); mountainous regions like the Tibetan Plateau; Southeast Asia; and Eastern North America, with higher flooding risks.

More of Earth's land areas will also be affected by flooding and increased runoff. Heavy rainfall from tropical cyclones is projected to be higher.

More areas will see increases in the frequency, intensity and/or amount of heavy precipitation.

5) Impacts on Biodiversity and Ecosystems

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Pollinating insects, such as bees, hoverflies and blowflies that support and maintain terrestrial productivity, including agriculture for human food consumption, have significantly greater geographic ranges at 1.5 degrees Celsius warming than at warming of 2 degrees. Credit: Courtesy Hamish Irvine via Flickr/Creative Commons

Loss of Species and Extinction — A 105,000 species of insects, plants and vertebrates were studied. At 1.5 degrees Celsius warming, 6 percent of the insects, 8 percent of the plants and 4 percent of the vertebrates will see their climatically determined geographic range reduced by more than half. At 2 degrees Celsius warming, those numbers jump to 18 percent, 16 percent and 8 percent, respectively.

The consequences of such range changes could be considerable. For example insects, pollinating insects, such as bees, hoverflies and blowflies that support and maintain terrestrial productivity, including agriculture for human food consumption, have significantly greater geographic ranges at 1.5 degrees Celsius warming than at warming of 2 degrees.

Fires, Extreme Weather, Invasive Species — It was found that the risks from forest fires, extreme weather events and invasive species are higher at 2 degrees warming than at 1.5 degrees warming.

6) Forest Impacts

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Mangroves in Cambodia. The IPCC special report says that many marine and coastal ecosystems will see increased risks of irreversible loss at 2 degrees Celsius warming. Loss of mangrove trees increases at both the 1.5- and 2-degree temperature thresholds, reducing their ability to serve as natural barriers that provide coastal protection from storms, rising seas and waves. Credit: Leon petrosyan [CC BY-SA 3.0 (<https://creativecommons.org/licenses/by-sa/3.0/>)]

Biome Shifts — The entire ecosystems will transform, with about 13 percent of land areas projected to see about 50 percent of their ecosystems shift from one type of biome to another at 2 degrees Celsius warming compared to 1.5 degrees warming.

Above 1.5 degrees Celsius of warming, the Mediterranean biome, desert and arid vegetation is projected to expand.

Tundra and boreal forests at Earth's high latitudes are particularly at risk of degradation and loss, with biome shifts likely in the Arctic and in alpine regions. Limiting warming up to 1.5 degrees Celsius is expected to prevent 1.5 to 2.5 million square kilometers (579,000 to 965,000 square miles) of frozen permafrost soils from thawing over centuries, reducing their irreversible loss of stored carbon.

Warming of 1.5 to 2 degrees Celsius will lead to a reduction of rainforest biomass and will increase deforestation and wildfires. Trees at the southern boundaries of boreal forests will die.

7) Ocean Impacts

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Global sea levels are rising at an accelerated incrementally rate over time rather than increasing at a steady rate, as previously thought, according to a 2018 study based on 25 years of NASA and European satellite data. If ocean levels continues to rise at this pace, sea level will rise 26 inches (65 centimeters) by 2100--enough to cause significant problems for coastal cities. Credit: NASA's Goddard Space Flight Center/Kathryn Mersmann

The IPCC Special Report states that at an increased level of warming between 1.5 and 2 degrees Celsius, will create instabilities in the Antarctic ice sheet and/or the irreversible loss of the Greenland ice sheet that could lead to multi-meter (greater than 6 feet) sea level rise over a time scale of hundreds to thousands of years.

Even if the temperature increase is limited to 1.5 degrees Celsius, sea level will continue to rise, as heat is already stored in the oceans from human-produced warming that caused them to rise.

This increase is projected to be 0.33 feet (0.1 meters) lower at 1.5 degrees Celsius warming than at 2 degrees. If warming reaches 2 degrees Celsius, more than 70 percent of Earth's coastlines will see sea-level rise greater than 0.66 feet (0.2 meters), resulting in increased coastal flooding, beach erosion, salinization of water supplies and other impacts on humans and ecological systems.

At the 1.5-degree Celsius threshold about 10.4 million fewer people would be exposed to these risks by 2100 compared to 2.0-degree Celsius, provided humans don't adapt. Risks are projected to be the highest in South and Southeast Asia, but sea level rise will significantly impact areas all around the world to varying degrees.

8) Marine Life

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Image credit: NASA/JPL-Caltech

Ocean oxygen levels will decrease, leading to more “dead zones” — areas where normal ocean waters are replaced by waters with low oxygen levels that won’t support most aquatic life.

At 1.5 degrees Celsius warming, the geographic ranges of many marine species will shift to higher latitudes, new ecosystems will appear, and there will be more damage to marine ecosystems, according to the report. This relocation of species will have mostly negative impacts for humans, but some areas will see short-term gains, such as fisheries in Northern Hemisphere high latitudes. These risks are higher at 2 degrees Celsius warming. Fisheries and aquaculture will be less productive.

9) Coral Reef Impacts

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Bleached branching coral (foreground) and normal branching coral (background) in the Keppel Islands, Great Barrier Reef. Credit: Creative Commons Attribution 3.0

The IPCC special report says that ocean warming, acidification and more intense storms will cause coral reefs to decline by 70 to 90 percent at 1.5 degrees Celsius warming, and become almost non-existent at 2 degrees warming.

Their loss would sharply decrease biodiversity in these regions and directly impact about a half billion people worldwide who depend on coral reefs for food, livelihoods, coastal protection, tourism, and other ecosystem services. Ocean food webs — interconnected systems such as pteropods, bivalves, krill and fin fish that transfer solar energy and nutrients from phytoplankton to higher animal species — will see increasingly higher risks of impact at 1.5- and 2-degrees Celsius warming, respectively, with bivalves such as mussels at the highest risk.

Many marine and coastal ecosystems will see increased risks of irreversible loss at 2 degrees Celsius warming. Loss of mangrove trees increases at both temperature thresholds, reducing their ability to serve as natural barriers that provide coastal protection from storms, rising seas and waves.

10) Impacts on Humans

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Image credit: Basil D. Soufi / Wikimedia Commons

The risk of heat-related illness and death will be lower at 1.5 degrees Celsius warming than at 2 degrees. Cities will experience the worst impacts of heatwaves due to the urban heat island effect, which keeps them warmer than surrounding rural areas.

The elderly, children, women, those with chronic diseases and people taking certain medications will be at highest risk.

Vector-Borne Diseases — More people will die from vector-borne diseases like malaria and dengue fever, with risks increasing further at 2 degrees warming.

11) Food Shortages

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Image credit: Natalie Maynor under a Creative Commons license from Flickr.com

[Food Security](#) — Food availability is expected to be reduced at 2 degrees Celsius warming compared to 1.5 degrees, with the largest risks emerging in the African Sahel, the Mediterranean, Central Europe, the Amazon, and Western and Southern Africa.

Yields for such crops as maize, rice, wheat and other cereal crops will be smaller at 2 degrees warming than at 1.5 degrees, especially in sub-Saharan Africa, Southeast Asia and Central and South America. For example, global maize crop yields will be about 5 percent lower at 2 degrees warming.

Rice and wheat will become less nutritious. Projected food availability will be less at 2 degrees Celsius warming than at 1.5 degrees in Southern Africa, the Mediterranean, the Sahel, Central Europe and the Amazon. Seven to 10 percent of rangeland livestock will be lost at about 2 degrees Celsius warming.

12) Economic Impacts

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Image credit: Basil D. Soufi / Wikimedia Commons

Risks to global economic growth from climate change impacts will be lower at 1.5 degrees Celsius than at 2 degrees by 2100, with the biggest impacts expected in the tropics and Southern Hemisphere subtropics, according to the report. In the United States, economic damages from climate change are projected to be large, with one 2017 study concluding the United States could lose 2.3 percent of its Gross Domestic Product for each degree Celsius increase in global warming. This would amount to more than \$446 billion based on U.S. Gross Domestic Product of \$19.39 trillion in 2017.

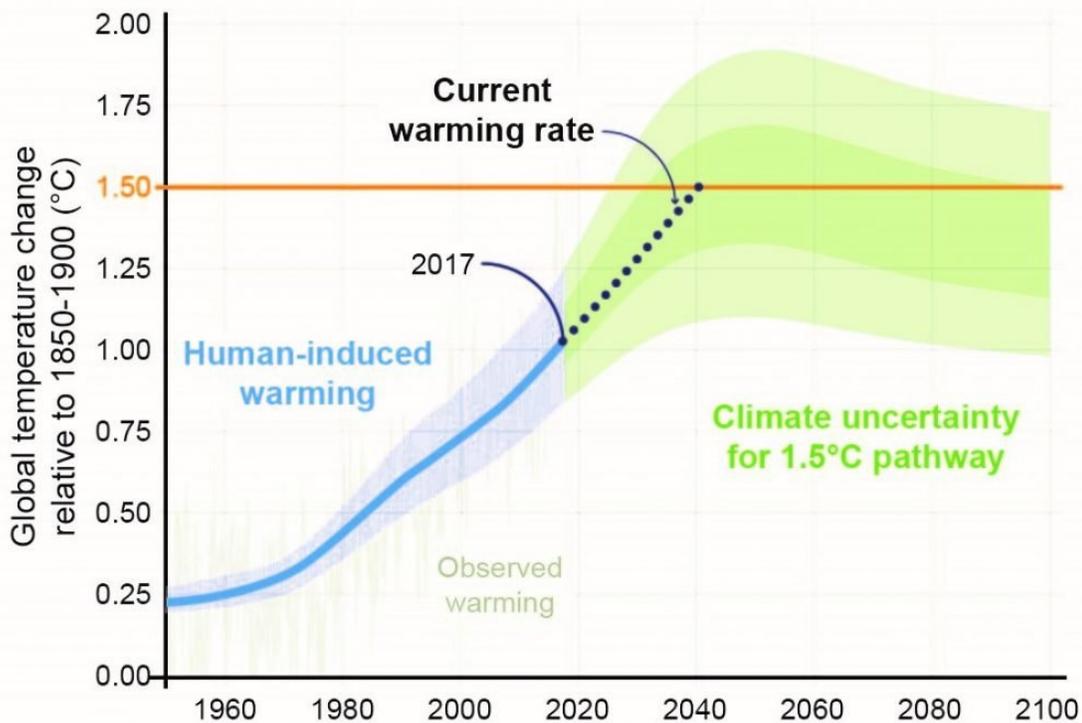
How Close Are We to 1.5 degrees Celsius?

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Human-induced warming reached approximately 1°C above pre-industrial levels in 2017



At the present rate, global temperatures would reach 1.5°C around [2040](#). Stylized 1.5°C pathway shown here involves emission reductions beginning immediately, and CO₂ emissions reaching zero by 2055.

[Human](#) contribution to the greenhouse effect is indisputable

Top climate experts, including the authors of the Fourth National Climate Assessment and the Intergovernmental Panel On Climate Change (IPCC) Special Report, have all concluded that [human activities are estimated to have caused an approximate 1.0°C rise in the Earth's global temperature to date](#). Excessive CO₂ emissions caused by human activities, such as the burning of fossil fuels, have contributed to a severe exacerbation of a natural phenomenon known as the greenhouse effect.

If the global temperature continues to increase at the current rate and [surpasses 1.5°C](#), the existential threat to life will not be limited to just ecological systems, but will extend to human life as well. We have already begun to witness the impacts on biodiversity and the ecosystem, as species loss and extinction have disturbingly accelerated as a result of

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As the effects of global warming worsen, human health, livelihood, food security, water supply, and economic growth will be jeopardized. It is incumbent on us to implement a plan in order to reduce greenhouse gas emissions and begin to combat the consequential long-term and short-term effects of global warming on both the environment and on humans.

Impacts of Climate Change According to [NASA](#):

- “Warming Oceans: The oceans have absorbed much of this increased heat, with the top 700 meters (about 2,300 feet) of ocean showing warming of more than 0.4 degrees Fahrenheit since 1969.
- “Shrinking Ice Sheets: The Greenland and Antarctic ice sheets have decreased in mass. Data from NASA’s Gravity Recovery and Climate Experiment show Greenland lost an average of 286 billion tons of ice per year between 1993 and 2016, while Antarctica lost about 127 billion tons of ice per year during the same time period. The rate of Antarctica ice mass loss has tripled in the last decade.
- “Glacier Retreat: Glaciers are retreating almost everywhere around the world – including in the Alps, Himalayas, Andes, Rockies, Alaska, and Africa.
- “Sea Level Rise: Global sea level rose about 8 inches in the last century. The rate in the last two decades, however, is nearly double that of the last century and is accelerating slightly every year.
- “Extreme Events: The number of record high temperature events in the United States has been increasing, while the number of record low temperature events has been decreasing, since 1950. The U.S. has also witnessed increasing numbers of intense rainfall events.”

The [Paris Agreement](#) in 2015

The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016.

Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.

To achieve this long-term temperature goal, countries aim to reach global peaking of greenhouse gas emissions as soon as possible to achieve a climate neutral world by mid-century.

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undertake ambitious efforts to combat climate change and adapt to its effects.

Implementation of the Paris Agreement requires [economic and social transformation](#), based on the best available science. The Paris Agreement works on a [5-year cycle](#) of increasingly ambitious climate action carried out by countries. By 2020, countries submit their plans for climate action known as [nationally determined contributions \(NDCs\)](#).

The Paris Agreement provides a framework for [financial, technical and capacity building support](#) to those countries who need it.

What Would it [Cost](#) to Implement the Paris Agreement?

There's a [lot of misinformation](#) in the public about the Paris Agreement, including the idea that it will hurt the U.S. economy. That was among a number of [unfounded claims](#) former president Trump repeatedly, argued that the accord would cost the U.S. economy \$3 trillion by 2040 and \$2.7 million jobs by 2025, making us less competitive against China and India. But as [fact checkers](#) noted, these statistics originated from a [debunked March 2017 study](#) that exaggerated the future costs of emissions reductions, underestimated advances in energy efficiency and clean energy technologies, and outright ignored the huge health and economic costs of climate change itself. Climate change is already costing public health. [Research from NRDC scientists](#) shows how inaction on climate change is responsible for many billions in health costs each year in just the United States—as communities around the world experience greater displacement, illness, famine, water shortages, civil strife, and death.

Research makes clear that the cost of climate inaction far outweighs the cost of reducing carbon pollution. One [2018 study](#) suggests that if the United States failed to meet its Paris climate goals, it could cost the economy as much as \$6 trillion in the coming decades. A worldwide failure to meet the NDCs currently laid out in the agreement could reduce global GDP [more than 25 percent](#) by century's end. Meanwhile, [another study](#) estimates that meeting—or even exceeding—the Paris goals via infrastructure investments in both clean energy and energy efficiency could have major global rewards—to the tune of some \$19 trillion.

In terms of employment, the clean energy sector employed [more than 3 million Americans](#) before the start of the COVID-19 pandemic—about 14 times the number of coal, gas, oil, and other fossil fuel industry workers—and has the potential to employ many more with further investments in energy efficiency, renewable energy, and electric grid modernization to replace the aging coal-powered infrastructure. Meanwhile, [coal jobs](#) aren't so much being transferred “out of America” as they are falling victim to market forces as renewable

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support—is an important means to helping communities leave the dirty energy economy behind them.

[President Biden's Plan](#) **Highlights**

I. ENSURE THE U.S. ACHIEVES A 100% CLEAN ENERGY ECONOMY AND NET-ZERO EMISSIONS NO LATER THAN 2050

II. BUILD A STRONGER MORE, RESILIENT NATION

III. RALLY THE REST OF THE WORLD TO ADDRESS THE GRAVE CLIMATE THREAT

IV. STAND UP TO THE ABUSE OF POWER BY POLLUTERS WHO

DISPROPORTIONATELY HARM COMMUNITIES OF COLOR AND LOW-INCOME COMMUNITIES

V. FULFILL OUR OBLIGATION TO WORKERS AND COMMUNITIES WHO POWERED OUR INDUSTRIAL REVOLUTION AND DECADES OF ECONOMIC GROWTH

Set Backs From the Supreme Court

On June 30, 2022, The US Supreme Court in the [West Virginia v. the US Environmental Protection Agency](#) case has limited the regulatory tools that the Environmental Protection Agency (EPA) can use to curb greenhouse-gas emissions, dealing a massive blow to US President Joe Biden's climate agenda. Academics and environmentalists lamented the loss of authority, as well as the precedent that it could set for the EPA — and potentially for other US agencies trying to tackle important societal issues in innovative ways.

“It’s a very dangerous decision,” says [Lisa Heinzerling](#), a legal expert at Georgetown University in Washington DC. “As an agency, if you are trying to tackle an important [new] question, and you’re trying to do it in a creative way, then this case should give you pause.”

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This US Supreme Court decision could derail Biden's climate plan

The [case the court ruled on](#), was the most consequential climate litigation in the United States in 15 years. It was also the first major opportunity for the court's new conservative majority to make its mark on US environmental law (former president Donald Trump appointed three justices to the bench, [tipping the balance](#)). In the end, the justices issued yet another seismic decision, following [last week's ruling to overturn *Roe v. Wade*](#). The ruling prohibits the EPA from crafting broad regulations to drive the US power industry away from coal and towards cleaner energy sources, such as wind and solar.

The lawsuit centered on the technical details of how the EPA should regulate greenhouse-gas emissions. Anticipating how the Biden administration would try to regulate the power industry, the coalition of Republican-governed states and coal companies that supported the lawsuit, led by West Virginia, sought a pre-emptive ban on broad regulations that would, in effect, overhaul the US power industry. They argued that the 1970 Clean Air Act limits the agency's regulatory power to the scale of individual power plants.

[In a 6–3 ruling](#), all the conservative judges sided with the plaintiffs, and ruled that the agency had indeed overstepped its authority in drafting earlier climate regulations. Regulating the US power industry falls under the US Congress's jurisdiction, not the EPA's, according to the decision.

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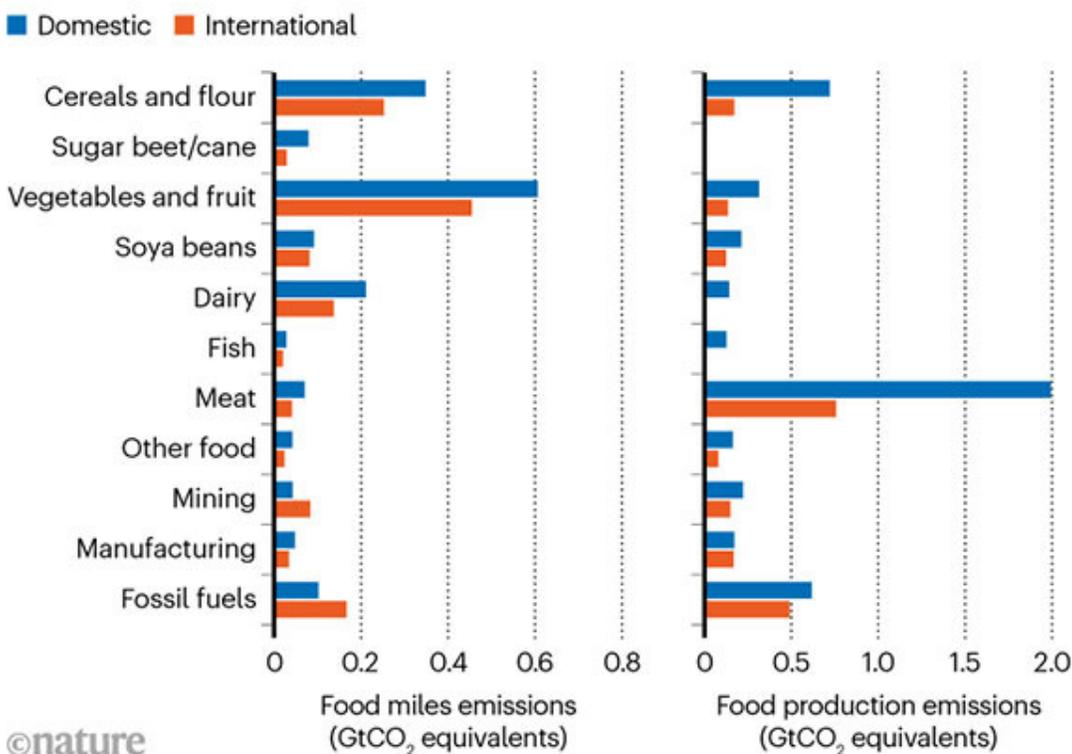
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successors — to curb US greenhouse gases as promised under the 2015 Paris climate agreement. And that spells bad news for the planet, because the United States is both one of the largest emitters of greenhouse gases in the world and a central player among the countries tackling global warming, says Sabrina McCormick, a sociologist who studies public health at the George Washington University in Washington DC. “This decision creates a critical gap in the global landscape to address catastrophic climate change.”

United States is one of the largest emitters of greenhouse gases in the world and a central player among the countries tackling global warming

FOOD TRANSPORT AND PRODUCTION EMISSIONS

In 2017, the emissions from transporting food products and ingredients totalled 3 gigatonnes of carbon dioxide equivalents, which exceeds the transport emissions for commodities such as mining and manufacturing.



The transport of food accounts for nearly one-fifth of carbon emissions in the food system — more than seven times the amount previously estimated. In 2017, the domestic and international movement of food added emissions equivalent to [3 gigatonnes of carbon dioxide to the atmosphere](#). Wealthy nations were responsible for generating nearly half of international food-transport emissions, despite being home to only 12% of the global population. The inequality is driven partly by the use of refrigeration when moving fresh fruit and vegetables, which is extremely carbon-intensive. Moving fruit and vegetables generated twice the amount of CO₂ produced by growing them.

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large amount of greenhouse gas to the atmosphere. The United Nations estimates that [growing, processing and packaging food accounts for one-third of all greenhouse-gas emissions](#).

But the results don't mean that people should try to limit the amount of plants in their diet, says [Nina Domingo](#), a sustainability researcher at Yale University in New Haven, Connecticut. Many studies have shown that plant-based diets are better for the environment than consuming large amounts of red meat, because livestock need a lot of land and burp out greenhouse gases. Reducing the consumption of red meat and eating food produced locally could help wealthy countries to lower their climate impacts.

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Closing Thoughts

Everyone talks about global warming, greenhouse effect and companies implementing ESG into their corporate goals, but I really didn't understand what all this meant until I wrote this newsletter.

The key word here is "**Climate Change**" as defined earlier and how a half of a degree change or reaching 1.0°C already has such a profound negative effect on everything in the world. For those that don't understand "climate change" or read my newsletter, they may say "what is the big deal?" or I'm already doing my part by going "green (which everyone has a different definition)". Going green will not have a big impact on climate change.

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atmosphere of greenhouse gas emissions due to the number one source, road traffic, our cars, trucks, ships, trains, and planes. The transportation sector accounts for [27% of 2020 greenhouse gas emissions](#) and

1. [Electricity production](#) (25% of 2020 greenhouse gas emissions) – Electricity production generates the second largest share of greenhouse gas emissions. Approximately 60% of our electricity comes from burning fossil fuels, mostly coal and natural gas.
2. [Industry](#) (24% of 2020 greenhouse gas emissions) – Greenhouse gas emissions from industry primarily come from burning fossil fuels for energy, as well as greenhouse gas emissions from certain chemical reactions necessary to produce goods from raw materials.
3. [Commercial and Residential](#) (13% of 2020 greenhouse gas emissions) – Greenhouse gas emissions from businesses and homes arise primarily from fossil fuels burned for heat, the use of certain products that contain greenhouse gases, and the handling of waste.
4. [Agriculture](#) (11% of 2020 greenhouse gas emissions) – Greenhouse gas emissions from agriculture come from livestock such as cows, agricultural soils, and rice production.
5. [Land Use and Forestry](#) (13% of 2020 greenhouse gas emissions) – Land areas can act as a sink (absorbing CO₂ from the atmosphere) or a source of greenhouse gas emissions. In the United States, since 1990, managed forests and other lands are a net sink, i.e., they have absorbed more CO₂ from the atmosphere than they emit.

We can't do a lot about #5 and #6, but we can do something about #1-#4 by switching transportation from gasoline to electric, which unfortunately is more expensive or find an alternative source. This is where innovation is badly needed. Until we tackle these 4 items, our earth will continue to grow warmer and warmer and we will suffer the consequences of it which include, people dying and animals and plant dying or become extinct.

The petro and oil companies however, will resist because this is their livelihood. This is the reason the W. Virginia vs. EPA case was so important. The petro and oil companies are very large conglomerates with deep pockets and influence in suing and lobbying for their cause.

But the only way we can prevent our planet from reaching 1°C or greater is to tackle fossil fuel issue consciously and reduce usage. It will be hard and we may have to make sacrifices. But here are some of the things we can do:

1. Buy a hybrid electric car
2. Ride a bike as your primary mode of transportation if feasible

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instead of driving, it's good exercise.

5. A lot of [consumer products](#), Deodorants, hair spray, cleaning products, spray paint, and insecticides are made with ozone-forming chemicals known as volatile organic compounds (VOCs). Although each product only contains a small amount of VOCs, Californians use over half a billion of these items every year. VOCs are an important precursor, or component in the formation of ground level ozone, a major part of California's smog problem. By regulating the amount of VOCs in consumer products, California is helping to reduce smog and reduce public exposure to the hazards associated with smog. Find alternative nature products
6. The [EPA](#) has good suggestions for alternative fuel on their website
7. Advocate for electric or alternative fuel with your congressman/congresswoman

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Should you have any questions or need of assistance with your business due diligence, determining your product's value proposition, target product profile and economic value of your product for reimbursement, feel free to contact me at 781-935-1462 or regina@biomarketinginsight.com.

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