

Arctic Is Thawing So Fast Scientists Are Losing Their Measuring Tools



Methane and CO2 released from the thawing permafrost will further accelerate the rate of global warming.
[Valdemaras D.](#), via Pexels

By [Dahr Jamail](#), [Truthout](#) Published June 3, 2019

I live my life in widening circles
that reach out across the world.
I may not complete this last one
but I give myself to it.
I circle around God, around the primordial tower.
I've been circling for thousands of years
and I still don't know: am I a falcon,
a storm, or a great song?
—*Rainer Maria Rilke*, Book of Hours

We've never experienced anything like this: We are living with the full knowledge of our collapsing biosphere and watching huge portions of it vanishing before our very eyes. Meanwhile, the industrial growth society (as eco-philosopher, author and Buddhist scholar Joanna Macy calls it) continues to

grind on, and this veneer of normalcy persists one more day.

Yet simultaneously, a great awakening is occurring. Millions of people around the world are rising to protect what remains, working to mitigate the damage and to adapt to the drastically changing world. They are working to hold space for that which, despite



seemingly overwhelming odds, may continue in the wake of this great collapse.

I have been giving a lot of lectures lately about the climate catastrophe that is upon us, and have increasingly been led to discuss grief. My own experience has shown me that only by facing what is happening head on, and allowing my heart to break, can I begin to respond accordingly.

I find myself led back to one of my teachers, the aforementioned [Joanna Macy](#).

“Refusing to feel pain, and becoming incapable of feeling the pain, which is actually the root meaning of apathy, refusal to suffer, that makes us stupid, and half alive,” Macy told me in an [interview](#). She described how that refusal to feel pain doesn’t mute the sense that there is something wrong — so people simply take that sense and project anxieties elsewhere, usually onto marginalized communities.

“Not feeling the pain is extremely costly,” Macy said.

Look out into the world, right now, the proof of what she said is surrounding us — starting in the White House, and filtering down throughout the dominant colonialist society.

Macy created a framework for personal and social change called the [Work That Reconnects](#), and gives workshops on how to apply the framework. In these workshops and in our conversations, Macy has repeated this to me: “The most radical thing any of us can do at this time is to be fully present to what is happening in the world.”

And so, over the years, I’ve aimed to be fully present, and I’ve had my heart broken, and I’ve now had enough practice at this that I have seen, repeatedly, the transformational qualities of despair and grief. In the face of our overwhelming climate and political crises, that grief is transformed into a new clarity of vision, and a depth of passion for action that was previously inaccessible.

“It brings a new way of seeing the world as our larger living body, freeing us from the assumptions and attitudes that now threaten the continuity of life on earth,” [Macy has told me](#) of this experience.

So, dear reader, I urge you to find your own work that reconnects — or to find another way to ground yourself, as you read on, and as we each travel through another crises-ridden day into an increasingly bleak future.

Indonesia recently announced it will be moving its capital city of Jakarta, a city of 10 million people.

That future is perhaps most visible at the poles. Greenland is melting much faster than previously understood, as melting has increased six-fold in recent decades, according to a study published in the [Proceedings of the National Academy of Sciences](#). “We wanted to get a long precise record of mass balance in Greenland that included the transition when the climate of the planet started to drift off natural variability, which occurred in the 1980s,” study co-author [Eric Rignot told CNN](#). “The study places the recent (20 years) evolution in a broader context to illustrate how dramatically the mass loss has been increasing in Greenland in response to climate warming.” Rignot added, “As glaciers will continue to speed up and ice/snow melt from the top, we can foresee a continuous increase in the rate of mass loss, and a contribution to sea level rise that will continue to increase more rapidly every year.”

The study also shows how sea level rise is accelerating, and will continue to do so with each passing year, as the effects compound upon themselves.

On that note, Indonesia [recently announced it will be moving its capital city](#) of Jakarta, partly due to the sinking of the land and sea level rise. This is a city of 10 million people.

Permafrost in the Arctic is now thawing so fast that scientists are literally [losing their measuring equipment](#). This is due to the fact that instead of there being just a few centimeters of thawing each year, now several meters of soil can become destabilized in a matter of days.

Adding insult to injury, another [study](#) revealed that this permafrost collapse is further accelerating the release of carbon into the atmosphere, possibly even doubling the amount of warming coming from greenhouse gases released from the tundra.



Already in Greenland, [the ice sheet's melt season began about a month early](#) while in Alaska, several rivers [saw winter ice break up on their earliest dates on record](#).

The recent U.N. report showing that one million species are now in danger of going extinct has grave implications for the future of humanity. [Human society is under urgent](#) threat because the global ecosystem upon which we depend is, quite literally, under threat of unraveling.

“The health of the ecosystems on which we and other species depend is deteriorating more rapidly than ever. We are eroding the very foundations of economies, livelihoods, food security, health and quality of life worldwide,” Robert Watson, the chair of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), [told The Guardian](#).

Earth

Disconcertingly, since 2001 forests in Canada have [released more carbon than they have sequestered](#). This is due largely to climate disruption-fueled drought, higher temperatures and wildfires. To give you an idea of what this means: In 2015 Canada's forests emitted the equivalent of 231 million metric tons of CO₂. By comparison, the total population of the city of Calgary emitted 18.3 million metric tons of CO₂, merely a fraction of the amount released by the forests, largely via drought and wildfires.

Scientists recently announced that a major breeding ground for emperor penguins has gone barren since 2016.

Following ongoing protests and pressure from the activist organization [Extinction Rebellion](#), the Welsh Government recently declared a [“climate emergency”](#), noting that Wales's health, economy, infrastructure and natural environment are all under threat from the impacts of human-caused climate disruption.

Around the same time, the Republic of Ireland also [declared a climate and biodiversity emergency](#). Green Party leader Eamon Ryan [told the BBC](#) that “declaring an emergency means absolutely nothing unless there is action to back it up. That means the

Government having to do things they don't want to do.”

In Canada, the Ottawa city council has [declared a climate emergency](#), joining several other Canadian municipalities in announcing the declaration. The vote freed up a quarter of a million dollars to be used to accelerate studies around moving the city onto renewable energy and meeting greenhouse gas emission targets.

The town of Old Crow, Yukon, also [declared a climate state of emergency](#) as well. “It's going to be the blink of an eye before my great grandchild is living in a completely different territory, and if that's not an emergency, I don't know what is,” Dana Tizya-Tramm, chief of the Vuntut Gwitchin First Nation, [told the CBC](#) following a ceremony marking Old Crow's declaration of the state of emergency. “Everything is changing right in front of our eyes.”

In the U.S., Mike Rosmann, a clinical psychologist working with farmers, wrote a [heartbreaking article](#) for *The New Republic* about depression among farmers in the wake of historic flooding that ravaged the Midwest. Rosmann detailed the psychological and personal pain he is experiencing while working with suicidal farmers, as the direct human toll of climate disruption becomes more apparent in the U.S.

Meanwhile, the refugee crisis from rising seas and extreme weather events continues apace in [Bangladesh](#). Already one of the most vulnerable countries in the world to sea level rise, it is now estimated that more than 10 million people there are estimated to lose their livelihoods in the next decade. The larger cities are already overwhelmed with the number of people streaming into them from the submerging coastal areas.

Water

Climate disruption-amplified, flood-inducing extreme weather events continue to make their mark around the planet.

Cyclone Kenneth, the [largest storm](#) to ever strike Mozambique, left [38 people dead](#). That storm had followed Cyclone Idai, which struck a few weeks prior, [killing 600](#).



In Canada, [experts warned](#) that climate disruption will continue to exacerbate extreme flooding across parts of the country. Thousands of people across Eastern Canada were forced to evacuate their homes due to flooding as the second of [two “100-year-floods” struck Quebec](#) in the last three years.

In the U.S., things are no better. After a \$14 billion dollar upgrade in the wake of Hurricane Katrina, New Orleans’s levees are sinking, due to sea level rise and ground subsidence, and will be rendered “[inadequate](#)” within four years.

The [devastating flooding that has wracked farmers](#) in the Midwest and wiped out crops, ruined stored crops, and drowned livestock is due to abnormally [warmer Eastern Pacific waters](#), according to scientists.

Just after the U.S. wrapped up its [wettest 12 months on record](#), storms dumped enormous rainfalls across Texas, Louisiana and Mississippi. [Scientists warned](#) that the extreme weather Houston is currently experiencing is no anomaly — it is what the area can expect regularly from now on.

Record-breaking spring high temperatures across the Pacific Northwest has people in the Seattle region worried about drought as intense heat in May has caused the snowpack (at only [58 percent of normal anyway](#)) across Washington state to melt away far more rapidly than normal. “When you look at some of the snow packs in some of the basins, it looks like they are doing a swan dive off a cliff,” Jeff Marti, a state Ecology Department official, [told The Seattle Times](#). [Washington Governor Jay Inslee has already issued drought-emergency declarations](#) in the Okanogan, Methow and upper Yakima watersheds, due to the low snow pack in the mountains.

Experts [recently warned](#) that the Hawaiian Islands are under severe threat from rising sea levels. The iconic Waikiki Beach and other well-known areas of the islands will experience chronic flooding and could disappear underwater forever within the next 15-20 years.

Each one of us must take full responsibility for preparing ourselves for the adaptation required to live on this increasingly warming, melting world.

Scientists also [recently announced](#) that global sea levels could reach a two-meter rise by 2100 — the warning effectively doubles [the previous worst-case scenario](#) provided by the U.N.’s Intergovernmental Panel on Climate Change, published in 2013. This new warning means that large portions of numerous major coastal cities will be completely submerged, according to Jonathan Bamber of the University of Bristol. “If we see something like that in the next 80 years we are looking at social breakdown on scales that are pretty unimaginable,” Bamber [told The New Scientist](#).

In the icy realms of Earth, things continue to deteriorate rapidly.

[Scientists recently announced](#) that a major breeding ground for emperor penguins has gone barren since 2016. This means that virtually nothing has hatched in the area, which is the second largest breeding ground for the penguins in the Antarctic, and things are looking just as bleak for this year.

[Scientists have also found](#) what they call “extraordinary thinning” of ice sheets deep within Antarctica. The affected areas are losing ice five times faster than they did during the 1990s, with some areas having lost 100 meters of thickness. A quarter of the Western Antarctic Ice Sheet (WAIS) is now [considered unstable](#). The Northwest section of the Ross Ice Shelf, which bounds the WAIS and is the size of France, is [melting 10 times faster](#) than the global average. According to one 2016 study, if all of the WAIS melts, [17 feet of global sea level rise](#) is projected to be the result.

Up in the Arctic, things are just as bad. April saw a [new record low](#) in Arctic sea ice extent.

[Another report](#) revealed how thawing permafrost across the Arctic will amount to a \$70 trillion impact. Methane and CO2 released from the thawing will accelerate global warming by amplifying it nearly 5 percent.

Additionally, yet [another recent permafrost study](#) has revealed widespread degradation of it across the high Arctic terrain, to an extent worse than previously understood.



On the other side of the water spectrum, drought has [impaired shipping](#) through the Panama Canal, whose waters have precipitously lowered. The canal level is not connected to sea levels, hence drought conditions are impacting the functionality of the critical shipping lane. Panama's canal authority recently had to impose draft limits on ships using the canal. This means that heavily laden cargo ships, namely from the U.S. and China, had to pass through with less of their cargo.

Fire

Just four months into 2019, the U.K. had already had more large wildfires than it had [during the entirety of 2018](#). Rescue personnel stated that the scale and duration of the fires had already been a huge draw on fire and rescue service resources.

In Germany, the risk of wildfires has [spiked](#) amidst ongoing drought and high temperatures across most of the country.

Back in the U.S., the wildfires that ravaged California last year were the [most expensive in the state's history](#), totaling \$12 billion in damages. More than 80 people were killed in the fires, in addition to them leaving large areas of toxic waste that needs to now be remediated.

Air

A [recent report](#) shows how much warmer cities across the U.S. will be within one generation (by 2050).

“Every season in every city and town in America will shift, subtly or drastically, as average temperatures creep up, along with highs and lows,” [reported Vox](#), which released the report. “Some of those changes — like summers in the Southwest warming by 4°F on average — will mean stretches of days where it's so hot, it'll be dangerous to go outside. Heat waves around the country could last [up to a month](#).”

Earth experienced its [second warmest April on record](#), ranking only behind April 2016. It also marked the 412th consecutive month and 43rd straight April that global temperatures have been above the 20th century average, according to the [National Oceanic and Atmospheric Administration](#).

In the Northwestern Russian city of Arkhangelsk, near the entrance to the Arctic Ocean, [a temperature](#)

[of 84°F was recently registered](#) — 30°F higher than normal for this time of year.

Meanwhile, Earth's CO2 levels, for the first time in human history, reached 415 parts per million. The last time there was this much CO2 in the atmosphere, global average temperatures averaged between 4°C to 10°C warmer than they are today, depending on the location around the planet.

Denial and Reality

The U.S. is now one of the world's leaders when it comes to climate change denial. A [recent polling](#) of the 23 largest countries in the world found that 13 percent of Americans believe the climate is being disrupted but that humans are not the cause, in addition to another 5 percent of Americans who believe the climate is not changing at all. The only other countries that are more anti-science than the U.S. are Saudi Arabia and Indonesia, according to the [survey](#).

This information shouldn't be a total shock, given the ongoing denialist machinations of the Trump administration, which [recently objected](#) to having “climate change” even referenced in a U.S. statement for the Arctic Council. Additionally, Trump's EPA head was [recently asked](#) to back up his absurdly anti-science claim that climate disruption is still “50 to 75 years out.”

Adding fuel to the denial fire, Trump's interior secretary recently [told lawmakers](#) that he hasn't “lost sleep” over the record CO2 levels in the atmosphere. It's worth remembering that the U.S. is responsible for emitting more CO2 into the atmosphere than any other country on Earth.

On the other hand, nearly half of younger Americans (between the ages of 18 to 29 years) believe human-caused climate disruption is a “crisis” and demand “urgent action,” according to a [recent poll](#).

[Another poll](#) found that more than 80 percent of parents in the U.S. want climate disruption taught in the schools of their children. Among all parents, two-thirds of Republicans and nine out of every 10 Democrats agreed the subject should be taught in school.



With the ongoing acceleration of the climate crisis, it is clear that even if we believe the best-case scenarios, governments are not reacting according to the gravity of the situation at hand. Each one of us, knowing what we now know, must take full responsibility for preparing ourselves for the adaptation required to live on this increasingly warming, melting world as civilizations and societies continue to disintegrate.