

“Apocalyptic” Melting Transpires in Antarctica as Earth Wraps Up a Scorching Year

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Global Research, December 05, 2017
[Truthout](#) 4 December 2017

Theme: [Environment](#), [Law and Justice](#)
In-depth Report: [Climate Change](#)

The signs of runaway anthropogenic climate disruption (ACD) continue to mount with each passing month.

2016 saw a [record surge](#) in the amount of CO₂ in the atmosphere, according to the World Meteorological Organization. This means that last year’s increase was a stunning 50 percent higher than the average over the last decade. Scientists said this makes obtaining global temperature targets — such as the often-mentioned 1.5°C and 2°C limits — largely unattainable. The combination of the increase of CO₂ and El Niño have driven atmospheric CO₂ to levels not seen for 800,000 years.

How is this playing out around the planet?

The Arctic Ocean is now starting to look more and [more like the Atlantic Ocean](#), a shift that is threatening to turn the entire Arctic food web on its head. This is due to the fact that the summer Arctic sea ice is melting rapidly and the waters are warming, leading to encroachment by animals from warmer climates and a reorganization of Arctic biodiversity.

Meanwhile, a [recent report](#) highlights the fact that planetary warming of just 3°C (a level we are currently on a trajectory to easily exceed before 2100) will be enough warming to lock in irreversible sea-level rise that will impact hundreds of millions of people.

This year is already on track to be [in the top three hottest years ever recorded](#), bearing in mind that the last three years have been the warmest three years ever recorded for the planet.

2017 has already seen some of the [warmest temperatures ever recorded](#) at many places around the world, in addition to unusually low Antarctic and Arctic sea ice levels, along with several instances of extreme droughts and wildfires.

Earth

Signs of abrupt climate disruption’s impact have been glaringly obvious of late.

The total area of global tree cover lost last year was equivalent to the area of the country of New Zealand (approximately 73.4 million acres). This was a staggering 51 percent increase over the previous year’s loss. The [University of Maryland study that provided this data](#) cited ACD-driven forest fires and deforestation as the two leading causes, and noted that the wildfires were responsible for the massive spike in coverage loss compared to the previous year.

Wildlife continues to provide us signals of the global imbalance. In the Arctic, the black guillemot seabird, which is dependent upon sea-ice for its survival, is [likely on its way out](#), as has been the known case for species such as Arctic Fox, walrus, hooded seal and Narwhal for quite some time now.

And as usual, climate impacts on the human front are glaring. A [recent study](#) published in the Lancet showed how ACD is already damaging the health of millions of people around the world every year. Pollution, diseases and heat waves, all linked to ACD, are the primary drivers of the health impacts.

On the topic of ACD's human impacts, some rare good news comes from New Zealand, where the government is [considering creating a visa category](#) to assist in relocating people from low-lying Pacific islands being submerged by rising seas. If this occurs, New Zealand will be the first country to create a visa for ACD refugees.

Demonstrating how ACD-fueled extreme weather events are hammering the economy, 2017 is on track to be [one of the most expensive years ever recorded](#) for the insurance industry in the US. In fact, the strain is evident for the entire global economy: There is currently a global protection gap (difference in how much insurance money is actually available and what is needed) of \$1.7 trillion, the majority of which is being covered by civil society and governments.

Water

Speaking of ACD-driven natural disaster costs piling up, in November, Alaska Gov. Bill Walker [declared a disaster](#) in order to release funding to help pay for repairs of several roads that were damaged or obliterated from a massive fall storm. The storm had generated eight-foot waves that breached a dirt berm protecting the coastal town of Utqiagvik from increasingly intense waves and erosion. Melting permafrost, coupled with shrinking sea ice that is allowing winds to generate larger waves that lash the shores, is causing increasing problems for dozens of northern coastal villages that will, ultimately, have to be relocated entirely.

Meanwhile, an [MIT professor of meteorology has warned](#) that the type of "biblical" rainfall we saw during Hurricane Harvey will occur more frequently in the future. He explained in a [recently published study](#) that the chances of a hurricane flooding parts of Texas have increased sixfold in only 25 years, and will most likely triple again by 2100 as water and atmospheric temperatures continue to warm.

On that note, [a study](#) from the Proceedings of the National Academy of Sciences has shown that within the next 30 years, floods that used to hit New York City only once per 500 years could happen every five years.

Further complicating things, the real estate company [Zillow recently released an analysis](#) showing that nearly two million homes in the US could be flooded by 2100 if ocean levels increase six feet from ACD. The properties lost would total nearly \$1 trillion, and would represent nearly two percent of the country's homes.

The impacts of sea level rise are especially evident in Antarctica. A [recent paper](#) from the University of Melbourne showed that unless coal power is completely eliminated by 2050, that factor alone could cause melting in the Antarctic that would contribute 1.3 meters of

sea level rise by 2100. In fact, a British research station there had to move its location earlier this year due to changes in the ice underneath. Now, it has had to [close down for a second winter](#) in a row, as cracks in the ice underneath continue growing. There is concern that the ice shelf upon which it is located could soon break off.

Also in Antarctica, the Pine Island and Thwaites glaciers, considered critical in regards to sea level rise, are [accelerating toward the sea](#). They alone are holding back ice that will increase global sea levels by nearly four feet in the coming centuries, an amount that is enough to submerge several coastal cities.

Meanwhile, another [recently published study](#) shows the Totten Ice Shelf in Eastern Antarctica is melting at an accelerated rate into the Southern Ocean. This glacier alone has enough ice to raise global sea levels 11-13 feet, enough to submerge every coastal city on the planet.

On the other side of the water coin, we continue to see ACD-fueled droughts worsening around the world. A recent example of this is in Sri Lanka, [where droughts are forcing farmers to move into cities](#) to find work as there is no longer enough money to be made in agriculture. Meanwhile [in Somalia](#), drought has killed 75 percent of the livestock and a pre-famine alert has been issued.

Fire

2017 was an incredible year of wildfires for California: Nearly 9,000 fires scorched more than one million acres, killed at least 40 people and destroyed thousands of structures.

[University of California researchers are predicting](#) that in the coming decades, due to increasing temperatures and intensifying droughts, the climate in Northern California, along with that region's wildlife and vegetation, will come to more closely resemble that of Southern California.

That state's [firefighting agency recently announced](#) that 2017 was California's worst-ever year on record, in terms of fires.

[Across Europe](#), an area nearly the size of Rhode Island burned this year. In one weekend in June, 60 people died across Portugal as wildfires raged out of control.

Wildfires [also raged](#) across Siberian Russia, as well as vast areas of Brazil, South Africa and New Zealand.

Air

[A new report from the Associated Press](#) confirms what has been long known: Winter is arriving later and leaving earlier as the seasons continue their ACD-driven shifts.

The [University of Hawaii released results](#) of research showing there are at least 27 physiological pathways by which a heat wave can kill a human being. The study also shows that if current CO2 emission rates continue, by 2100, 74 percent of people on the planet will be exposed to deadly heat waves. Even with dramatic reductions, the number of people exposed to them will hit 48 percent, according to the research.

Meanwhile, the globe [continues to bake](#) under swaths of record-setting late fall

temperatures. Northeastern Siberia has seen [temperatures soar](#) to 30°C above average, and overall Arctic temperatures have been predicted to average 4.4°C above the norm for this time of year. Even Eastern Antarctica saw temperatures reach a [stunning 20°C](#) above average recently.

Denial and Reality

The Trump administration-backed ACD-denial efforts continue apace as of late.

Oil and gas lobbyist-turned-EPA-head Scott Pruitt [recently prevented EPA scientists](#) from speaking out about climate disruption at an event in Rhode Island. Pruitt, a former fracking lawyer, is also [in the process of weakening](#) EPA technical committees that have traditionally been beyond the political fray.

Meanwhile, the Interior Department, headed by Rick Perry, has [scrubbed ACD](#) from its strategic plan, and now is saying it is committed to attaining “American energy dominance.” And the Interior Department is not the only place this is happening. The Trump administration has [removed the words “climate change”](#) from the websites of the Department of Energy, Department of Agriculture, the EPA and the Department of Health and Human Services.

Furthermore, a US Forest Service scientist who was scheduled to discuss the role ACD is playing in wildfires at a conference was [recently denied approval](#) to attend the event.

Trump’s climate-denying machinations have also included [nominating a GOP congressman](#) to head NASA who blames ACD on the sun.

However, fortunately, there are still those in government who are sounding the alarm bells of reality.

[The most comprehensive report](#) on climate science from the US government to date was released on November 3. It stated it is “extremely likely” that human activities were the “dominant cause” of ACD.

In late October, the Government Accountability Office released a report showing how ACD impacts are [already costing US taxpayers](#) billions of dollars.

Meanwhile, [senior US military and security experts have warned](#) that climate refugees could number in the tens of millions in the next decade alone, creating the “world’s biggest refugee crisis.”

Lastly for this month’s dispatch, in the middle of November, 15,000 scientists provided a [catastrophic “warning to humanity” about ACD impacts](#) and overpopulation, and how humankind is facing an existential threat. They warned that the globe faces untold amounts of human misery and catastrophic losses of biodiversity without rapid and immediate actions.

The group pointed out how in just the last quarter century, the human population has increased 35 percent while the total number of mammals, reptiles, amphibians, birds and fish have fallen 29 percent. Global CO2 emissions and average temperatures have consistently increased, nearly 300 million acres of forest have been lost, and oceanic “dead zones” have increased 75 percent.

It is made more clear with each passing month that humans have pushed the planet off a precipice, and nothing short of immediate, global actions on a dramatic scale will be able to even slightly mitigate runaway ACD.

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