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Could One Man Single-Handedly Ruin the Planet?

By David Wallace-Wells



An aerial view of Amazon rainforest deforestation, with trees being burned for farm management. Photo: Ricardo Funari/Brazil Photos/LightRocket via Getty Images

How much damage can one person do to the planet?

For that matter, how much can one do to help save it? Unless that person is Xi Jinping — the autocrat-for-life in charge of the world's most populous country and its rapidly industrializing, state-capitalist economy — the answer is, usually, not very much. Even Donald Trump's contribution to climate catastrophe is relatively modest: He's pulled the United States out of the Paris accords and slashed environmental regulations, but, thanks to forces beyond his control,

American emissions are nevertheless down since he's been in office (making the U.S., which accounts for only fourteen percent of global emissions, the only major industrialized nation whose contributions to climate change are actually falling). The problem of global warming is just so big, and so diffuse, that the impact of any single actor, no matter how powerful, is relatively small. This is why global cooperation is so important, and why coordination is so difficult.

But Brazil's newly elected president just might test the proposition that no individual matters all that much to the climate. Often called the "Trump of the Tropics," the cartoonish quasi-fascist Jair Bolsonaro is almost certain to be worse on global warming than Trump himself. So bad, in fact, that he is already a horrifying argument for a Great Man Theory of climate change.

In between the election's first round and the runoff, Bolsonaro — who has called having a daughter a "weakness", told another legislator he wouldn't rape her because she was not worthy of it, said he'd rather have his children be drug addicts than gay, and endorsed torture — actually retreated from his promise to withdraw his country from the Paris accords. The international treaty isn't actually all that important to him; he only cares about what he can do domestically. Bolsonaro wants to do as he'd like in the Amazon, 60 percent of which sits within Brazilian borders. There, he plans to open the rainforest to agricultural development, essentially putting a match to an entire rainforest of stored carbon by inviting rapid deforestation — the industrial-scale felling of trees, which, in dying and decomposing, will release into the atmosphere all the CO₂ they have stored inside them.

How bad would that be? For starters, the plan to open up the Amazon would mean Brazil has absolutely no chance of meeting its Paris commitments. A group of Brazilian scientists has estimated that between 2021 and 2030, Bolsonaro's deforestation would release the equivalent of 13.12 gigatons of carbon. Last year, the United States emitted about five gigatons. This means that this one policy would have between two and three times the annual carbon impact of the entire American economy, with all of its airplanes and automobiles and coal plants. The world's worst emitter, by far, is China; the country was responsible for 9.1 gigatons of emissions in 2017.

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Could One Man Single-Handedly Ruin the Planet? fully eat up 20 percent of a stable climate's remaining carbon budget. As Emily Atkin put it at *The New Republic*, "The livability of the entire planet is at stake."

But the problem is bigger than that extra carbon, believe it or not. The Amazon, alone, produces 20 percent of the world's oxygen. A smaller, degraded rainforest won't threaten our breathing air — there is just way too much oxygen around for us to ever worry about that. But the figure does signal just how prolific the Amazon is as a photosynthesizing force, which is critical because it produces all that oxygen out of carbon, which it sucks out of the air. And not just a little: The trees of the Amazon take in a quarter of all the carbon absorbed by the planet's land each year. This is what makes it what scientists call a “carbon sink,” taking in large stores of CO₂ that would otherwise be warming the planet even more drastically.

This is the forever problem of deforestation. Every tree cut in Bolsonaro's denuded Amazon would release its carbon in a one-time burst, but the rainforest left behind would be smaller, which means it would be less capable of absorbing carbon. But the effect doesn't just zero out; ultimately, it reverses. For years, scientists have worried that the world's forests would flip from carbon sinks to carbon sources — become net producers of carbon rather than net absorbers. In fact, this is one of the feedback loops they most worry about: the planet's not just losing one of its largest natural resources in mitigating the extreme possibilities of global warming, but having that resource turn against it, almost like a climate traitor, suddenly working on behalf of the most dire scenarios.

The process is already quite far along, even before Bolsonaro's stepping in. A major 2015 study showed that the rainforest was absorbing fully a third less carbon than it had three decades earlier. The deforestation already occurring is making the problem worse, as are droughts — producing more than a quarter gigaton of carbon each year and threatening to turn the rainforest as a whole from a shrinking sink into a reliable source of carbon. More droughts in the rainforest also produce more wildfires, which delivered more than a gigaton of carbon between 2003 and 2015. Indeed, overall, the world's tropical forests are already carbon sources, on net, responsible for almost half a gigaton of carbon each year.

One paper from a few years ago suggested that, while many species in the Amazon have already gone extinct thanks to deforestation, 80 to 90 percent of extinctions are yet to come. These declines are, unfortunately, right in line with what's happening everywhere in the world in what is now indisputably underway: a mass extinction by human hands. A new study this week from the World Wildlife Federation found that, globally, wildlife populations have declined by 60 percent since just 1970, at rates 1,000 times faster than at any previous point in planetary history — a discovery the WWF director general Marco Lambertini called “mind-blowing.” The UK chief executive put the news in somewhat more eye-opening perspective: “We are the first generation to know we are destroying our planet and the last one that can do anything about it.”

Of course, the flip side of a Great Man Theory of climate villainy is that an individual might come forward with the opposite impulses. Bolsonaro's predecessors, after all, directed a dramatic slowdown of deforestation — cutting Brazil's carbon emissions from land use by 63 percent from 2005 to 2012 — but it's unlikely that a similar climate-friendly approach to the rainforest will return to Brazil anytime soon. (Although Bolsonaro's plans could be stalled, or at least slowed, by domestic politics.) At the moment, China's President Xi is the likeliest individual climate hero on the world stage, capable of dramatically reducing global emissions all on his own. In fact, though Xi's motives are mixed and not entirely clear, he has made major commitments to green energy in recent years, and accelerated those commitments after Trump's election (when, presumably, he saw an opportunity to seize the mantle of World Climate Leader). It's not hard to dream of an even stronger two-person front, with Xi working in partnership with a future president Warren, or Harris, or Booker, one area of cooperation in a superpower relationship that seems otherwise destined for further conflict.

But there is also the possibility of a rogue billionaire trying to save the world on his or her own, possibly wreaking environmental havoc along the way. As Dave Levitan wrote a few weeks ago, in the immediate aftermath of the IPCC's doomsday report, greening the economy may require a World War II-esque mobilization and the bill for carbon-capture technology may run into the many trillions of dollars, but solar geoengineering — the process of suspending some dust in the atmosphere to reflect back the sun and cool the planet — is “absurdly cheap.” The cost, in total, would be “a few billion dollars a year.” Nobody's yet sent any planes loaded with sulfur up into the atmosphere to seed the sky, but just a few years ago the American businessman Russ George defied several United Nations moratoria and unilaterally dumped 100 tons of iron sulphate into the Pacific ocean, in a different kind of geoengineering experiment, meant to spawn a massive bloom of carbon-sucking plankton in the ocean. By the time he was caught, the bloom had grown to several thousand square miles. A 2017 article in *Nature* concluded “scientists have seen no evidence that the experiment worked.”

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