

The Canadian Field-Naturalist

Book Reviews

Book Review Editor's Note: *The Canadian Field-Naturalist* is a peer-reviewed scientific journal publishing papers on ecology, behaviour, taxonomy, conservation, and other topics relevant to Canadian natural history. In line with this mandate, we review books with a Canadian connection, including those on any species (native or non-native) that inhabits Canada, as well books covering topics of global relevance, including climate change, biodiversity, species extinction, habitat loss, evolution, and field research experiences.

Currency Codes: CAD Canadian Dollars, USD United States Dollars, EUR Euros, AUD Australian Dollars, GBP British Pound.

CLIMATE CHANGE

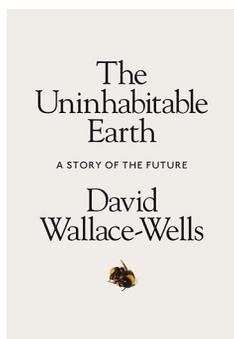
The Uninhabitable Earth: Life After Warming

By David Wallace-Wells. 2019. Tim Duggan Books, Penguin Random House. 320 pages, 27.00 USD, Cloth.

"We run carelessly over the precipice after having put something in front of us to prevent us seeing it."—Blaise Pascal, *Pensées* (1623–1662)

I can summarize this review in a single sentence. Everyone should be compelled to read this book to truly appreciate the nature of the threat from climate change.

David Wallace-Wells lays out in elegant, yet blunt, language the nature and potential extent of the inevitable disruption to humanity from climate change. The threat is ubiquitous and inexorable, it is occurring now, accelerating much more rapidly than we think, and the outcome is, to quote from his opening sentence, "worse, much worse, than you think" (p. 3). Our response to this horrific scenario has been and continues to be inadequate. One can read all manner of apocalyptic claims about climate change and less dire public warnings from the climate scientists themselves who fear to sound alarmist. These proclamations are always couched in sugary dribbles of "but there is still hope". Most of this hope emanates from ignorance and from the belief that the calamity is far down the arrow of time and can be alleviated by technology. Wallace-Wells puts paid to this dream by noting the rapidity with which the current 1.1°C and causal doubling of atmospheric CO₂ have occurred. I worked it out; 90% of greenhouse gases have been accumulated since Bob Dylan was born,



and 80% since he sang the "The Times They are a Changin'". In one baby boomer generation, this catastrophe has occurred.

This book starts with one stunning fact after another and never falters through 225 pages of text. It leaves one breathless and raw. In Section I, "Cascades", Wallace-Wells describes the cascading effects of climate change, emphasizing the interconnectedness of our earthly paradise. He reminds the reader of the five great mass extinctions and points out that four of them involved increases in greenhouse gases and warming temperatures of up to 5°C. But these events took thousands or even millions of years to develop, we have only had Dylan's lifetime. Mind you, we have known since the mid-19th century that the simple fact of adding certain gases to the atmosphere would warm the planet, but until recently the idea that we would release hundreds of millions of years of accumulated hothouse carbon in just one century never really sank in. Indeed, for 30% of the population, it is still fake news. Wallace-Wells is Al Gore on steroids and presents an endless mass of facts from every facet of our earthly sphere, and yet we still act as though climate change is something distant, to be fixed by recycling, getting a smaller car, becoming vegetarian, and all manner of single issue fixes that most people resist and resent. Why? Because we can't easily grasp the big picture: the frailty of permanence, the cumulative impact of eight billion of us and our fossil fuel technologies. And thus, we are doing too little.

Section II, "Elements of Chaos", is a series of chapters on specific disastrous effects of climate change, such as heat, hunger, drowning, wildfire. I

won't try to recount the terrors that Wallace-Wells chronicles, there are far too many. Suffice to say these make depressing and startling reading. Section III, "The Climate Kaleidoscope", covers a range of issues: storytelling, capitalism, technology, the politics of consumption, history after progress (a very interesting read), and ethics at the End of the World. All of this is provocative and suitably disturbing. Finally, section IV discusses the concept of the Anthropocene Principle. I will try to paint the context Wallace-Wells presents: how fragile our civilization and ecosystems are, and how inevitable, drastic and long-term climate change will be.

Wallace-Wells lists several major misconceptions that we hold about climate change, "myths" that encourage us to be blasé about the end of the world envisioned by so many climate scientists. First, he says we believe the "fairy tale" that climate change is slow. It isn't. By geological or even human timescales, it is advancing at terrifying speed. Check your news stories of 2019; climate change is here. Second, many see climate change as a problem largely confined to the Arctic. Climate change is global of course. In 2019, Karachi recorded the hottest April of any city on earth ever, and in 2019 earth itself experienced the hottest June ever recorded. Third, many see climate change as a problem for the natural world and some species, like Polar Bears, but not for humanity. This misapprehension arises from our failure to see ourselves as part of nature, and a disruptive yet wholly dependent part at that. Fourth, many see climate change as a matter of slowly rising sea levels relevant only to low-lying coastal areas and remote tropical atolls. A fifth pernicious myth is that burning fossil fuels is a necessary price we pay to foster "economic growth and good paying jobs". These necessary benefits pay for themselves by creating the technologies needed to repair the problems caused by the resultant climate change, using, for example, carbon capture, cold fusion, daring experiments spraying other gases into the atmosphere or lead powder into the oceans, or building giant reflective umbrellas. In other words, more of the same hubris that got us here. Throughout the book Wallace-Wells drops 'fact bombs' that support my view that we are insane. Example, bitcoin (p. 33) consumes more electricity than is produced by all the solar panels on our planet. The same bitcoin produces as much CO₂ annually as one million transatlantic flights (p. 179), and nearly 2% of the global total CO₂ emissions.

We deeply embrace the belief that progress is built into our civilization and society. There will be more and better food, time-saving devices, medical life extending treatments, poverty eliminated, and endless entertainment and travel opportunities. This myth is

readily embraced by the wealthy fractions of society and the well-off eagerly endorse claims, such as those of the biologist and prolific writer Steven Pinker (Pinker 2018), that every measure shows human progress, that wealth, the economy, longevity, health, human rights, etc., are improving and that the Cassandras have been repeatedly proven wrong. Malthus, Ehrlich, the Club of Rome, even David Attenborough can hang their heads in shame for doubting the sharp upward thrust of history. We tend to forget that for 95% of human history progress was, to say the least, minimal, that population growth was almost invisible (see Hardin 1995), and economic growth was not a concept, much less a reality. Only in the last 5% of our time on earth have we seen notable changes from the 200 000 years of hunter gatherers and even that period of "progress" has regularly been blighted by setbacks from wars, diseases, and various genocides and pogroms. So-called progress has been largely over the past 200 years a product of the massive consumption of fossil fuels. A major result has been the staggering increase to eight billion large, warm blooded, consumptive apes. A large portion still wallows in poverty and can't afford to attend a Raptor's game much less a holiday in space.

The glorious irony of climate change is, of course, that we are entirely to blame and that the fabulous wealth and sumptuous lifestyles we have created are the exact reasons we are careening to calamity. Several times Wallace-Wells highlights this important point. For example, on p. 53, "The graphs that show so much recent progress in the developing world (i.e., decline in poverty and hunger, improvement in life expectancy, education gender relations, and more) are, practically speaking, the same graphs that trace the dramatic rise in carbon emissions that has brought the planet to the brink of overall catastrophe". Everyone reading this review was/is/will be a major creative participant in climate change.

Climate change is occurring now, will accelerate in the future, will endure for thousands of millennia, and is entirely a product of the very recent past. Our impact on climate will last not until our grandchildren die off but for millions of years. We need more books like this one to slap us hard, to not sugarcoat reality with false reassurances. If we continue our current insanity, then our civilization will be a tiny blip of an afterthought in the eternity of climate change.

"Man is not clever enough to limit his greed to courses that will not destroy the ecosystem." —Gregory Bateson, *Mind and Nature* (E.P. Dutton, 1968)

Note: I have deliberately omitted the myriad terrifying scenarios recounted by Wallace-Wells. Read

the book. Meanwhile, I include Corn and Yalkin (2019), an examination of the great physical and mental toll on those scientists conducting research on climate change.

Literature Cited

Corn, D., and D. Yalkin. 2019. It's the end of the world as they know it. The distinct burden of being a climate scientist. July 8 2019. Accessed 28 August 2019. [https://www.motherjones.com/environment/2019/07/weight-](https://www.motherjones.com/environment/2019/07/weight-of-the-world-climate-change-scientist-grief/)

[of-the-world-climate-change-scientist-grief/](https://www.motherjones.com/environment/2019/07/weight-of-the-world-climate-change-scientist-grief/).

Hardin, G. 1995. *Living within Limits: Ecology, Economics, and Population Taboos*. Oxford University Press, Oxford, United Kingdom.

Pinker, S. 2018. *Enlightenment Now: the Case for Reason, Science, Humanism, and Progress*. Viking, New York, New York, USA.

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