

Dan Leahy's Book Outline On:

The Uninhabitable Earth: Life After Warming
By David Wallace-Wells (Tim Duggan Books, 2019)

CASCADES, I

Five mass extinctions in the past. Four due to climate change produced by greenhouse gas. One due to asteroids that killed the dinosaurs. In our mass extinction, we have done more in the last three decades of exhaling carbon than in all the millennia that came before it. (4).

Mentions the million Syrian refugees being an example in 2011 of climate refugees brought on by drought that had led to harsh anti-refugee politics. The UN says 200 million climate refugees by 2050.(7).

The book is about “what warming means to the way we live on the planet.” - The science has uncertainties based on what humans will do in terms of emissions and how the climate will respond.(11)

Best-case Scenario. He gives scenarios by degrees. This is just the one for two degrees of warming:

“At two degrees, the ice sheets will begin their collapse, 400 million more people will suffer from water scarcity, major cities in the equatorial band of the planet will become unlivable, and even in the northern latitudes heat waves will kill thousands each summer. There would be thirty-two times as many extreme heat waves in India, exposing ninety-three times more people. This is our best-case scenario.” (12-23)

It's on us, “we.” “Global warming is, after all, a human invention. And the flip side of our real-time guilt is that we remain in command. we are its authors.” (30). “Some like our oil companies and their political patrons, are more prolific authors than others. But the burden of responsibility is too great to be shouldered by a few; however comforting it is to think all that is needed is a for a few villains to fall.” (30).

An optimist. Warming of 3 degrees would be horrible, but better than where we are heading. Carbon capture, geo-engineering might allow a merely grim planet rather than an apocalyptic one. Avenues other than “unplugging the entire industrial world from fossil fuels” are removing “inefficiencies,” stopping subsidies to fossil fuels, food waste, stop mining bitcoin, utilizing waste heat, etc (32-33)

Individual Lifestyle. “But the climate calculus is such that individual lifestyle choices do not add up to much, unless they are scaled by politics.... but that scaling should not be impossible.(34)

Meaning of global warming to the human animal. “I may be in the minority in feeling that the world could lose much of what we think of as 'nature', as far as I cared, so long as we could go on living as we have in the world left behind. The problem is, we can't.” (36).

Elements of Chaos, II:

Heat Death, Hunger, Drowning, Wildfire, Disasters No Longer Natural, Freshwater Drain, Dying Oceans, Unbreathable Air, Plagues of Warming, Economic Collapse, Climate Conflict.

1. Heat Death

At present, most regions reach a wet-bulb maximum of 26 or 27 degrees Celsius; (80' Fahrenheit) the true red line of habitability is 35 degrees (95' Fahrenheit) beyond which humans begin simply dying from the heat. (40)

“Currently, there are 354 major cities with average maximum summertime temperatures of 95 degrees Fahrenheit or higher.” (47-48)

Heat death. “After a certain point, though, water won't help, your core temperature rising as your body sends blood outward to the skin, hoping desperately to cool it down. The skin often reddens; internal organs begin to fail. (48)

2. Hunger

Heat. “... the basic rule of thumb for staple cereal crops grown at optimal temperatures is that for every degree of warming, yields decline by 10 percent.” (49)

“The world's natural wheat belt is moving poleward by about 160 miles each decade” and the soil we are now using is disappearing... “75 billion tons of soil lost each year. In the United States, the rate of erosion is ten times as high as the natural replenishment rate; in China and India, it is thirty to forty times as fast.” (51)

Green revolution by Norman Borland and the Rockefeller Foundation.(The author makes some uncritical claims here about the high yield, disease-resistant wheat varieties saving billions.Forgets to mention fertilizer, pesticide and irrigation dependencies, let alone sustainability questions) (53)

Drought. “Drought may be an even bigger problem for food production than heat, with some of the world's most arable land turning quickly to desert. At 2 degrees of warming, droughts will wallop the Mediterranean and much of India, and corn and sorghum all around the world will suffer, straining global food supply.” (55)

Protein Deficiency. “Since 1950, much of the good stuff in the plants we grow – protein, calcium, iron, vitamin C, to name just four – has declined by as much as one-third, a landmark 2004 study showed. Everything is becoming more like junk food.” (57)

3. Drowning The Water Will Come (Book by Jeff Goodell tabulates flooded sites).

“By 2100, if we do not halt emissions, as much as 5 percent of the world's population will be flooded every single year. Jakarta is one of the world's fastest growing cities, today home to 10 million, thanks to flooding and literal sinking, it could be entirely underwater by 2050. Already, China is evacuating hundreds of thousands every summer to keep them out of the range of flooding in the Peal River Delta.” (60)

3. Drowning (cont)

Coastal Cities. Nearly two-thirds of the world's major cities are on the coast, not to mention its power plants, ports, navy bases, farmlands, fisheries, river deltas, marshlands, rice paddies. Inland Flooding.

Antarctic. A 2018 study showed the “melt rate of the Antarctic ice sheet tripling just in the past decade.” 1992-97, 49 billion tons each year. 2012-17, 219 billion tons each year. West Antarctic and Greenland ice sheets. Greenland losing a billion tons of ice each day. Enough ice in the two sheets “to raise global sea levels ten to twenty feet – each.” (65)

Arctic Methane. “The methane that might be released by the melting Arctic where permafrost contains up to 1.8 trillion tons of carbon, considerably more than is currently suspended in the earth's atmosphere.” (66). By 2100, the Arctic “will have released a hundred billion tons of carbon. That is equivalent of half of all the carbon produced by humanity since industrialization began.” (76)

Albedo effect. A present problem. Ice is white and reflects back sunlight back into space. Less ice the more sunlight is absorbed by global warming.

When will it flood? “More than 600 million people live within thirty feet of sea level today.” (69)

4. Wildfire

Breach the City. California wildfires. Five of the twenty worse fires in California history hit the state in the fall of 2017 and 2018. What the nightmare is: “that climate chaos could breach our most imperious fortresses – that is, our cities. We have not “built our way out of nature.” (72)

“The California fires of 2017 burned the state's wine crop, blowtorched million-dollar vacation properties, and threatened both the Getty Museum and Rupert Murdoch's Bel-Air estate. There may not be two better symbols of the imperiousness of American money than these two structures.” (73)

More Fire. Burning much more land. “Over the last five decades, the wildfire season in the western United States has grown by two and a half months; of the ten years with the most wildfire activity on record, nine have occurred since 2000.” (74). There is no more “season.” It's all the time.

Carbon Sinks to Sources. When trees die, they release the stored carbon. Trees in the Amazon take in a quarter of all the carbon absorbed by the planet's forests each year. Bolsonaro plans deforestation called development. His plan, over time, would release 13.12 gigatons of carbon – equivalent of adding “a whole second China to the planet's fossil fuel problem, plus a whole second United States.” (77)

5. Disasters No Longer Natural.

When history accelerates. “What lies in store for us is more like what the aboriginal Australians, talking with Victorian anthropologists, called 'dreamtime' or 'everywhen...' – the feeling of history happening all at once, like watching an iceberg collapse into the sea.(78-79).

In 1850, 150 glaciers in Glacier National Park. Today all have melted except 26.

6. Freshwater Drain.

Available Fresh Water. “Seventy-one percent of the planet is covered in water. Barely more than 2 percent of that water is fresh, and only 1 percent of that water, at most, is accessible, with the rest trapped in glaciers.” (86) National Geographic estimates 0.007 percent of the planet's water is available to fuel and feed its seven billion people.

It's political. Today the crisis is “elective” but little action being taken to avert crisis, dealing with “leaks”, for example. Lots of crisis statistics, here are some examples:

Globally, 2.1 billion do not have access to safe drinking water. 4.5 billion don't have “safely managed water for sanitation.” (87). Phoenix is in emergency planning mode. The Aral Sea, 4th largest, lost more than 90% of its volume. Lake Mead (Las Vegas) has lost as much as 400 billion gallons in a single year. Lake Poopo, Bolivia's second largest has completely disappeared. Lake Chad has more or less evaporated.

Urban Entitlements. “But of all the urban entitlements, the casual expectation of never-ending drinking water is perhaps the most deeply delusional.”(89). “Fourteen of the world's twenty biggest cities are currently experiencing water scarcity or drought.

7. Dying Oceans.

70 percent of the earth's surface is the planet's predominant environment. Feeds us, maintains our planetary seasons (Gulf Stream), modulates the temperature, absorbing much of the heat of the sun. Global warming undermines all of these functions.(94-95). Fish migrating north. Carbon dioxide absorption equals ocean acidification. Coral's mass bleaching events...half of Australia's Great Barrier Reef.. food source, protection against storm surges..

Ocean anoxification. The amount of ocean water with no oxygen has quadrupled in the last 50 years, means 400 dead zones due both to warming and pollution. The ocean is suffocating. (97)

Ocean conveyor belt. The Gulf Stream. Slowdown. The “Atlantic Meridional Overturning Circulation” moving at its slowest rate in 1,500 years. (2018 studies.)

8. **Ubreathable Air.**

Planet air will not just warmer, but dirtier, more oppressive and more sickening.

Bill Gates. In this chapter, he has a discussion of geoengineering. – polluting the air to keep the planet cooler. (102), “Carbon capture may indeed prove to be “magical thinking” ... rather than sucking carbon out, we shoot pollution into the sky, sulfur dioxide. (107). “And yet many scientists see this as inevitable because it is just so cheap.”

And here's Bill “Even an environmentalist billionaire, going rogue, could make it happen on their own.” (108).

9. **Plagues of Warming.**

Diseases. Those trapped in Arctic Ice, we have no immune systems for prehistoric plagues emerging from ice. Also more recent plagues, like remnants of the 1918 flu that killed as many as 50 million people, or existing scourges that could now travel beyond “human provinciality.” The Black Death killed as much as 60 percent of Europe – think about it going global in today's “globalized world.”

Yellow Fever. Delivered by mosquitoes, yellow fever sat in Amazon basin for generations. In 2016 it left and reached Sao Paulo and Rio in 2017 where 30 million people now face a disease that kills between 3 and 8 percent infected.

Malaria. Kills a million people each year and as the tropics creep northward mosquitoes migrate with it. “You didn't much worry about Zika before a couple of years ago, either.” (111).

Zika. Disease-mutation. “Microcephaly” - smaller heads... how does this happen.

Lyme. A young disease that we attribute a myterious and incoherent set of symptoms. The tick is rapidly expanding due to global warming and lyme counts have expanding globally.. It was non-existent in 2010 in Turkey, South Korea and Japan. In Netherlands, 54% infected. In Europe 3 times higher the standard level.

Bacteria and the Saiga. More than 99 percent of the bacteria inside human bodies are unknown to science. A rise in temperature by a degree or two probably will not change their behavior, but consider the “case of the saiga.” In May, 2015, two thirds of this global population of dwarflike antelope died in just a few days. The culprit turned out to be a simple bacteria that migrated from its tonsils to its bloodstream apparently due to its the place where they live became “extremely warm and humid.”(114)

10. **Economic Collapse.**

Fossil Capitalism. Post 2008 crash, new studies saying history of economic growth simply due to “discovery of fossil fuels.” Andreas Malm: We have been extracted from the much by a single innovation... plundering the stored energy of the earth.

Economics of Warming. Solomon Hsiang, Marshall Burke & Edward Miguel. - every degree of warming reduces growth, on average, by about one percentage point.(117). Climate change does not mean a Great Recession or Depression, but a “Great Dying.” Heat waves close power plants, buckle infrastructure, dampen worker productivity. 13 degrees Celsius (55F) is optimal annual average temperature for economic productivity.

11. Climate Conflict.

Pentagon “obsessed with climate change” - drowning naval bases, new theaters of conflict in the Arctic, etc. China's new artificial islands as US's Pacific islands(Marshall islands) threatened by climate change and Bikini Atoll is the world's “largest nuclear waste site.”

Drought and crop failure linked to “radicalization” in Boko Haram, ISIS, Taliban, Islamic groups in Pakistan. When productivity falls, societies fail, leading to forced migration (70 million currently displaced. Heat frays everything.

Guatemala. Between 2008 and 2010, was hit by hurricanes and tropical storms. Three million left good insecure. Farmers turned to growing poppies. It has the 5th homicide rates in the world, 2nd highest most dangerous in the world for children. Climate change will make their key crops, coffee and sugarcane ungrowable. (129-130).

12. Systems.

Climate refugees. Cascades, system crises or threat multipliers produces climate refugees. By 2100 maybe 13 million displaced Americans, most from the SE, chiefly Florida, where 2.5 million are expected to be flooded out by Miami. NOLA expected to lose half million. IOM says maybe 1 billion globally by 2050. (133).

The body. The system failing does not just have to be society. It can also be the body. Nutritional deficiencies, could “stunt us all”, also question of having fewer children, mental health trauma, acute distress disorder due to climate depression, environmental grief, climate trauma in the youth, suicide rates all aggravating by warming and disasters.

The Climate Kaleidoscope, III

1. Storytelling.

Failure of Imagination. We can be mesmerized by the threat directly in front of us without ever perceiving it clearly. “... we suffer from an incredible failure of imagination.”(143). At the moment, “stories illuminating global warming can still offer an escapist pleasure...”(148). We can't imagine real world climate catastrophe. (Amitav Ghosh, The Great Derangement.).

Whose Responsible? “The companies' disinformation-and-denial campaigns are probably stronger case for villainy..... But evilness is not the same as responsibility, climate denialism has captured just one political party in one country in the world. “To believe the fault for global warming lies exclusively with the Republican Party or its fossil fuel backers is a form of American narcissism.”

Inertia and the allure of near term gains and the preference of the world's workers and consumers provide a spectrum of culpability.

Two Climate parables that are not a global warming problem: Plastic panic and bees. **Bee Death.** Introduced a “new environmental fable.” A massive die off has not happened. Industrial scale livestock managers were rebreeding their bees each year offsetting the die-offs. (151). There is no mystery to bee deaths. It has to do with a breed of insecticide: neonicotinoids, not “colony collapse.” (152).

Scientific Reticence. Despite the reticence, “scientists began embracing fear” in 2018 when the IPCC report how much worse climate would be a 2 degrees of warming compared with 1.5. The new message as “It is okay, finally, to freak out.” (157). Why won't anyone listen to them, he asks.

2. Crisis Capitalism.

Endangered by Climate. “... from burn-it-all-down leftists to naively optimistic and blinkered technocrats to rent-seeking, kleptocratic, growth-is-the-only-value conservatives – we tend to think of climate as somehow being contained in, or governed by, capitalism. In fact, the opposite: capitalism is endangered by climate.” (162)

The promise of growth that bolstered capitalism. Climate change will undermine it with “breathtaking and permanent recession” and increasing punishment of the poor.

The cost of industrial capitalism. “The cost is large: decarbonized economy, a perfectly renewable energy system, a reimagined system of agriculture, and perhaps even a meatless planet.” (169)

Less than wholesale transformation are favored. Negative emissions. 344 of the 400 IPCC emissions models are negative emissions, like carbon capture, but Wallace Smith Broecker estimates it would take 100 million devices just to match current emissions. (170).

3. The Church of Technology.

Silicon Valley. Little more than fairy tales to offer. Eric Schmidt (solution available due to speed of technological change, namely machine intelligence). Nick Bostrom, philosopher of AI, seems to argue for “the potential of humankind to develop into posthumanity...” or “transhumanism – a new state of being. (173). Peter Thiel invests in “eternal-youth programs.” Sam Altman invests in “brain-upload program that would extract his mind from this world.”(174). Silicon valley goal is to “build a kind of portal through which we might pass into another, possibly eternal kind of existence.” So, why worry, “technology will take care of everything.”

Green energy revolution. The “market has not responded to these developments by seamlessly retiring dirty energy sources and replacing them with clean ones. It has responded by simply adding the new capacity to the same system. (177). We are now burning “80 percent more coal than we were just in the year 2000.

Political will. In fact we have imagined solutions, more than that, we've even developed

them, at least in the form of green energy. We just haven't yet discovered the political will, economic might and cultural flexibility to install and activate them." (179)

4. Politics of Consumption.

GMO and Nukes. "GMOs aren't a sign of a sick planet but a possible partial solution to the coming crisis of agriculture; nuclear power the same for energy. But both have already become nearly as off-putting as carcinogens to the purity-minded, who are growing in number and channeling more and more ecological anxiety along the way." (188).

Post Neoliberalism. Geoff Mann & Joel Wainwright in *Climate Leviathan* list various forms of a new planetary sovereign will emerge in a new neoliberalism preoccupied with the flow of capital.

Climate Wars. Harald Welzer's subtitled book: *What People Will be Killed for in the 21st Century*. Political collapse is a quite common outcome of climate crisis, even though we call them "civil wars." Yemen, Syria, Darfur. **Global Order.** The author sees this as generally a fiction, but he thinks "climate change will reverse that course." (196)

5. History After Progress.

The Tale. We are in the grip of a narrative that history moves in the right direction with the forces of progress. On what side is climate change? It's on its own side – its own tide. **Noah Harari** praised by Gates, Obama and Zuckerberg argues "the story that has ruled our world in the past few decades is what we might call the Liberal Story." In a 2016 essay he predicted Trump's attack on the "world's collective faith in the establishment." He writes: "It was a simple and attractive tale, but it is now collapsing, and so far no new story has emerged to fill the vacuum." (I assume he is referring to the "Liberal Story.")

Dramatic ravages. Will "shake the casual sense that as time marches forward, life improves ineluctably." (200).

6. Ethics at the End of the World.

Guy McPherson. Humans will be extinct in ten years. "Only Love Remains" workshops. Methane burps going off all at once. Civilization will end, then humans.

Paul Kingsnorth. *Dark Mountain Project*. Follower of Robinson Jeffers (1935). Reasonable detachment as the core principle of *Dark Mountain*. Kingsnorth and Dougald Hine manifesto of 2009 cite the myths of progress, human centrality and separation from 'nature.' 2010, Kingsnorth published new manifesto, *Dark Ecology*. – mentions Ted Kaczynski. "I'm worried that it may change my life." (212)

What Would Not be a Waste of Time. Kingsnorth offers five tentative answers. Two and Four are: preserving nonhuman life, getting hands dirty, nature has value beyond utility. One and five are withdrawing and building refuges. (211).

Alarmed. I am alarmed. How widespread the alarm will "shape our ethical impulses toward each other." At most, three decades "to completely decarbonize before truly devastating

climate horrors begin.” (214). Roy Scranton's books. “We are already dead.” His latest book, We're Doomed, Now What?

The Anthropic Principle, IV

WE. “If humans are responsible for the problem, they must be capable of undoing it.” “This is why this book is also studded so oppressively with 'we'” (220). The planet will survive, but “it is thinking like a people” that is need for humans.

Tools. We have the tools today to stop it all: a carbon tax and the political apparatus to aggressively phase out dirty energy; a new approach to agricultural practices and a shift away from beef and dairy to the global diet; and public investments in green energy and carbon capture. (227)

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