Humanity on the Highway to Hell

As we accelerate toward ecocide and suicide, is there an exit ramp?

BY LEON KOLANKIEWICZ

These are four volumes that address The Big Picture: What is to become of humanity, industrial civilization, and the Earth itself in this brave new century we have embarked on?

Countdown: Our Last Best Hope for a Future on Earth?
By Alan Weisman
New York: Little, Brown and Company, 2013
528 pages, $19.59

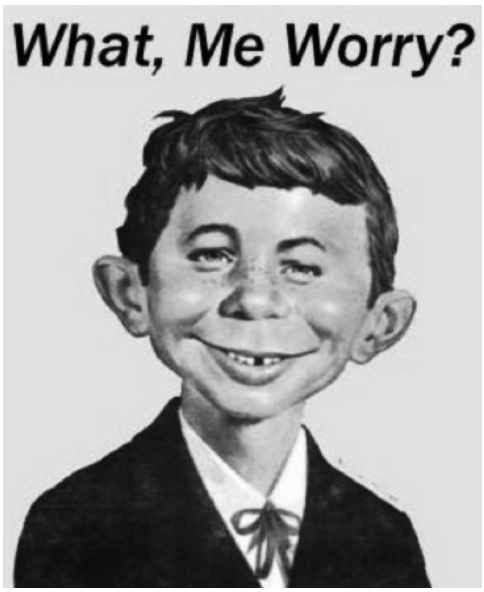
Eaarth: Making a Life on a Tough New Planet
By Bill McKibben
New York: St. Martin's Griffin, 2011
288 pages, $16.04 hbk, $11.78 pbk

Ten Billion
By Stephen Emmott
New York: Vintage, 2013
224 pages, $9.51 pbk

Population 10 Billion: The Coming Demographic Crisis and How to Survive It
By Danny Dorling
London: Constable
428 pages, $8.48 pbk

Three of the four books — *Countdown, Eaarth, Ten Billion* — of this eclectic set fall broadly into the "doom and gloom" genre, following in the venerable footsteps of Malthus (*An Essay on Population*, 1798) and Ehrlich (*The Population Bomb*, 1968). While two of the three offer a glimmer, or perhaps a dollop, of hope, the fourth literally ends with the matter-of-fact, haunting statement: "I think we're f**ked." Author Stephen Emmott obviously does not subscribe to the practice of concluding with a note of compulsory hope — what human ecologist Don Wilkin has called "hopium" ("*We can avoid the breakdown of human civilization if only we will work together to [fill in the blank], if we do it quickly enough.*") — which appears to be almost a prerequisite to getting published in the first place.

In contrast to these three, the fourth book (*Population 10 Billion*) belongs to the contrarian category — a messenger of hope in the midst of misguided doomsters. The most famous champions of this genre are Voltaire's character Dr. Pangloss from *Candide* (1759), the late author Julian Simon, and the very much alive Bjorn Lomborg and Hans Rosling, both of whom are statisticians and Scandinavians, among many other things, including consummate performer and sword-swallower (literally!) in the case of Rosling.



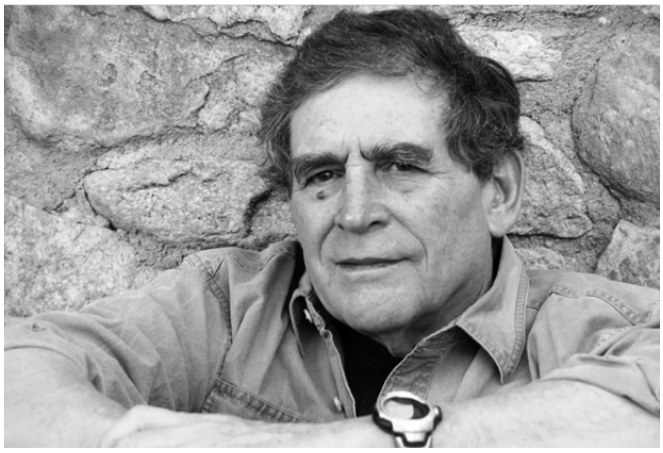
If the former three books might be lampooned by the clichéd cartoon of the bearded hippie with bedraggled hair in sandals and a robe, bearing a sign reading "The End is Near," the latter might well be satirized by the image of the late, great Alfred E. Neuman of *Mad* magazine, with his vintage (and only) remark, "What, me worry?"

Leon Kolankiewicz *is an environmental scientist and national natural resources planner. He has a B.S. in forestry and wildlife management from Virginia Tech and an M.S. in environmental planning and natural resources management from the University of British Columbia. He is the author of* Where Salmon Come to Die: An Autumn on Alaska's Raincoast.

Can we count down before nature cuts us down to size?

The largest of the four volumes is *Countdown* by Alan Weisman. This Minnesota native is a long-time reporter, journalism professor, and former contributing editor at the *Los Angeles Times Magazine*, among many other postings. He is now a senior producer for Homelands Productions. In 2007, Weisman authored the acclaimed bestseller *The World Without Us*, in which he imagined ecological recovery on an Earth suddenly and magically relieved of its human burden. In *Countdown*, by contrast, he contemplates a world not entirely devoid of *Homo sapiens*, but rather a more sustainable, lighter ecosphere with fewer of us weighing it down. An Earth that would perhaps avoid the grim fate envisioned in the 1978 song "Had Enough" by the vintage British rock band The Who: "And the world's gonna sink with the weight of the human race."

Weisman takes us along on his fascinating and frightening journey around the world, visiting countries that represent Earth's stunning demographic diversity and listening in as he interviews key movers and shakers, including mothers, fathers, politicians, clerics, gravediggers, and biologists. Understandably, he has an abiding appreciation for the stalwart contributions of husband-and-wife biologists Paul and Anne Ehrlich of Stanford University, who first sounded the alarm about overpopulation 45 years ago with their international best-seller *The Population Bomb*. The irrepressible Ehrlichs were not the first to warn about overpopulation, but were the first to generate such widespread interest, praise, and opprobrium for their provocative message and delivery. Weisman also demonstrates his fondness for the Ehrlichs' disciple Gretchen Daily, also at Stanford's Center for Conservation Biology, accompanying her to Costa Rica, China, and elsewhere in her quest to investigate and promote options for a sustainable future for the biosphere and its human inhabitants.



Alan Weisman, author of *Countdown*

Countdown covers the population issue with near-encyclopedic thoroughness. Its bibliography is more than 50 pages long and contains over a thousand references, itself a valuable contribution to the population literature. Yet perhaps because of its wide-ranging global reach, there are some notable gaps, such as immigration into Weisman's own homeland, the United States. The U.S. is by far the most populated (read "overpopulated") developed nation on Earth — even Weisman's heroes the Ehrlichs say so — and its relentless population growth outstrips that of all other long-industrialized nations (i.e., those formerly labeled as the "First World") combined.

Yet despite immigration's salience in driving contemporary U.S. demographics and rapid population growth with no end in sight — to 400 million, 500 million, and beyond in this new century alone — *Countdown* gives it short shrift, alluding to the immigration issue only in passing. In all 528 pages, the observant reader will find it mentioned once in a brief footnote on p. 110 about the "wrenching battles" endured by the Sierra Club and the group formerly known as Zero Population Growth or ZPG (now known as Population Connection or PC) over immigration, and once in a discussion about the late Prof. Al Bartlett. The good professor, observes Weisman:

> …raised some controversy by proposing an end to immigration before the United States is engulfed with humanity.

I collaborated with Al for many years on the issue of U.S. population growth, and while he and I both favored reducing immigration sharply, to my knowledge he never called for a complete "end" to it. In the late nineties, the group Carrying Capacity Network (CCN) — on whose board Al served while I was on staff as "vice president and network coordinator" — advocated a "moratorium" on immigration. But this is different than calling for an "end" to it altogether, and even this moratorium, if enacted, would have allowed for admitting 100,000 immigrants and refugees annually until we got our house in order.

Interestingly, the Ehrlichs both served on CCN's Board of Advisors for several years, but begged off in 1995 because they were troubled by its ever more single-minded and hardline focus on immigration to the exclusion of other aspects of the carrying capacity theme.

Weisman's first chapter is called "A Weary Land of Four Questions." The ancient and wearied land is Israel and Palestine, and this chapter showcases Weisman's talent at plunging into the very heart of the vexing questions that plague open, honest discussion and debate of population policy. And that's because at heart, considering population candidly can be painful and contentious; demography concerns the most fundamental

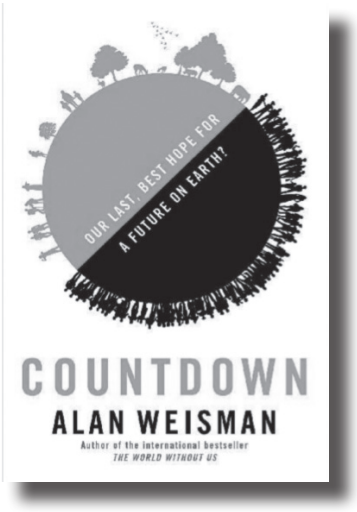
questions facing our species (or any other): who survives, who predominates, and who wields power and control — who calls the shots? Which sets of genes are to bear progeny, and which are to be discarded along with other has-beens in the dustbin of history and evolution? Weisman calls the first section of this first chapter the "Battle of the Babies." He may as well have called it "Demographic Warfare" or "Demography Is Destiny." Weisman quotes Khalil Toufakji, a Palestinian geographer with Jerusalem's Arab Studies Society, who says that people used to joke about "Yasser Arafat's biology bomb." But Arafat wasn't joking and neither is Toufakji.

Toufakji: "We were taught in the mosque, in school, and at home to have lots of children, for lots of reasons. In America or Europe, if there's a problem, you can call the police. In a place with no laws to safeguard you, you rely on your family."

Reading this, I was very much reminded of the dilemma facing my Honduran wife's family in Comayagüela, the even poorer twin to also-poor Tegucigalpa, capital of that small but much beloved and beleaguered Central American country. In 2012, Honduras was tarred with the notorious distinction of having the highest homicide rate of any country on Earth. As a result of this, the Peace Corps pulled out of the country after half a century of sending volunteers to serve there, including yours truly. My then girlfriend, later wife, hailed from a gritty shantytown or *barrio marginal*, called *Colonia 21 de Febrero* in Comayagüela. Perched on the scrubby hillsides, denuded of the cool pine forests which once cloaked and shaded them, at one time *Colonia 21 de Febrero* was on the outskirts of the twin cities. This was before it was engulfed by their rampant outward expansion, a result of high birth rates and constant in-migration from the countryside or *campo*, where birth rates are even higher.

When I lived in Honduras from 1985 to 1988 the place was plagued by persistent poverty but no more than petty crime, although it was politically repressive for those of left-wing leanings due to the Cold War and Honduras's stature as a U.S. ally or puppet. By the early 2000s, however, violent gangs and drug trafficking had become epidemic. A friend of mine and my wife's, born and raised in her *colonia*, was informed that her nephew was going to be executed in several days' time for crossing the wrong hoodlum, and to shun him until it happened. This she did, and the evil deed was done. She had no recourse, no power to prevent it, and no one to turn to, certainly not the corrupt, ineffectual *policia*. If she had warned her nephew, she too would've been killed.

My nephew Javier was accused of a murder he didn't commit, and forced to take the fall for it by the authorities and the gangbanger who actually was responsible. Javier was convicted, sent to prison, and lost two years of his life in the crumbling, overcrowded penitentiary in downtown Tegucigalpa, coerced into paying for someone else's crime. I sent a couple of hundred bucks once to help with a lawyer's fees to try to free him, but when that finally happened, the gang appeared on my mother-in-law doña Prudencia's doorstep and threatened Javier again. He fled across Guatemala and Mexico to Texas and America and joined millions of other illegal aliens here. But in Honduras, a country where might makes right, the rule of law is a distant dream, a pathetic joke, or a forlorn hope, and criminals in and out of government perpetrate their crimes with impunity, I remember thinking, "Thank God for Javier's large family — all his siblings, aunts, uncles, cousins." In hostile settings, there is strength in those numbers united by blood and common ancestry; to pursue the numerical advantage that breeding early and often conveys in a tough world or on the mean streets is basic evolutionary psychology at work.



Toufakji again, quoted by Weisman: "Here, you need a big family to feel protected." According to Toufakji, the situation is even worse in the Gaza Strip, where he cited one Hamas leader with 14 children by his four wives. "Our mentality goes back to the Bedouins. If you have a big enough tribe, everyone's afraid of you."

Yasser Arafat used to say that the PLO's best weapon was the Palestinian womb. There it is — primitive demographic warfare and competitive breeding at its crudest and most virulent. Yet what else can an economically and militarily weaker people do to prevail against their enemy? The enmity is now so deep-seated between Palestinian Arabs and Jews that the idea of converting your enemy into your friend seems like a utopian wet dream.

I was reminded of the Biblical prophecy that "the meek shall inherit the Earth." Perhaps in this new millennium it should be re-stated as "the fertile shall inherit what's left of the Earth." Already, except perhaps in its deepest deserts, the Middle East is vastly overpopulated and its land and resources heavily overexploited. Yet in the foreseeable future, until this cultural and religious powder keg explodes, the demographic pressure is only going to intensify.

Weisman tells us about environmental educator Rachel Ladani, a *haredi* (ultra-Orthodox) Jew. Yet this environmental educator is clueless about population

pressures on the environment. "God brings children into the world. He'll find a place for them," Weisman quotes her.

Weisman asks Ladani what will happen to her country by 2050, with twice as many people, when it is already the most densely populated country in the Western world. She replies: "I don't have to think about it. God made the problem, and he will solve it." Religious fatalism is alive and well…and breeding.

Weisman asks rhetorically: "Is there anything in their liturgies, histories, or belief systems — or any other reason — that potentially embraces the seemingly unnatural idea of limiting what comes most naturally to us, and to all other species: making copies of ourselves?"

"Not religion. Reality," answers Palestinian Ayat Um-Said, a lifelong resident of a refugee camp in the West Bank city of Ramallah, in the sanest remark of anyone Weisman interviews in this chapter.

From the water-stressed Middle East, Weisman transports us to Mexico and the Green Revolution. Here he visits with agricultural scientists following in the footsteps of Green Revolutionary and Nobel Peace Prize Laureate Norman Borlaug, whose investigations and innovations such as short-stemmed (dwarf) wheat helped save hundreds of millions from suffering the cruel famine foreseen by the Ehrlichs. Yet Borlaug was an environmental realist, not a utopian cornucopian, and in 1997 he wrote:

> Though I have no doubt yields will keep going up, whether they can go up enough to feed the population monster is another matter. Unless progress with agricultural yields remains very strong, the next century will experience sheer human misery that, on a numerical scale, will exceed the worst of everything that has come before.

Weisman next visits the crowded, long-inhabited, biologically bereft British Isles, where every last nook and cranny of the picturesque landscape has long been manicured or modified, except perhaps for inaccessible rocky cliffs. The first section of the chapter is called "The Xenophobe," and in it Weisman belittles those intolerant, Antediluvian Englishmen who fear their little island nation is being overrun by foreigners, in particular Muslims, many of whom hold values that are antithetical to traditional and recent Western tenets. Like all too many (but not all) smug and self-congratulatory progressives, Weisman is utterly dismissive and mocking of these concerns, though one would think that as a liberal humanist, he might be just a tad troubled by headlines and poll findings such as these, reported in mainstream English newspapers like *The Guardian* and *The Telegraph* in recent years and still available online for any and all to see:

> • "Muslims in Britain have zero tolerance of homosexuality, says poll." Not one of the 500 British Muslims interviewed in this 2009 poll believed that homosexual acts were morally acceptable. (*The Guardian*, 7 May 2009)
>
> • "Poll reveals that 40 percent of Muslims want sharia law in UK." Four out of 10 British Muslims want sharia law introduced into parts of the country, a 2006 survey revealed. (*The Telegraph*, 19 Feb. 2006)
>
> • "Killing for religion is justified, say third of Muslim students." A third of Muslim students in Britain believe killing someone in the name of religion is justified, a 2008 poll found. (*The Telegraph*, 26 July 2008)

But these aren't the British Muslims Weisman chooses to speak with, because then his readers might just get the politically incorrect idea that current immigration rates and multiculturalism policies really do endanger England. (To say nothing of causing a massive population boom: the U.K. Office of National Statistics announced in 2013 that Britain's population is projected to surge by nearly 10 million over the next 25 years, from 63.7 million to 73.3 million.)

Instead, Weisman talks with the liberal, enlightened founder of the Islamic Foundation for Ecology and Environmental Science. Haji Fazlun Khalid claims that the Qu'ran "tells us to remember Allah's blessings and to not defile the Earth." Noble sentiments indeed, and I wish I could believe they were widely shared and practiced by a majority of Muslims, but somehow I doubt it. I doubt it when I see über-high-fertility Islamic countries in the Middle East and Asia (total fertility rate (TFR) in Yemen of 4.9; in Pakistan 3.8; Afghanistan 5.4) or look at the oil-endowed Muslim countries enriching themselves and erecting massive phallic symbols (half-mile high skyscrapers) celebrating obscene opulence, all by defiling the Earth from the massive exploitation, export, and burning of oil by the gobs and gazillions of barrels. Just sayin', but doesn't seem too different to me from the self-centered, myopic, materialistic values most Westerners and Judeo-Christians (or Buddhists and Hindus for that matter) live by.

In later chapters, Weisman does take us to two large, Muslim countries whose population policies stand in stark contrast to each other: Pakistan and Iran. Sunni-Muslim-dominated Pakistan is a tragic demographic basket case, in which religious authorities have by and large rejected birth control and family planning as counter to their faith. As a result, nuclear-armed, terrorist-besieged Pakistan is projected to swell from 191

million in 2013 to 363 million by 2050, if things don't fall utterly apart before that. In Shiite-dominated Iran, by contrast, the Ayatollahs used the same Qu'ran in support of family planning and embraced it so fervently that Persians experienced one of the most rapid fertility declines in modern history; Iran's TFR is now 1.9, below replacement level (2.1). If an Islamist theocracy can embrace family planning to such an extent, there is indeed hope, as Weisman correctly ascertains, that any society on earth can do it.

The fact that Indonesia, the most populous Muslim-dominant country in the world, has a TFR of 2.6, Malaysia a TFR of 2.1, and the United Arab Emirates a TFR of 1.9 all represent hope for recognition of population reality in the Muslim world.

One wishes that the Vatican could be so flexible and amenable in facing up to the demographic and environmental realities of the brave new world we live on. Perhaps under the new Pope Francis, a humble reformer at heart, a Jesuit and the first ever pope named in honor of the nature-loving and poverty-embracing Saint Francis of Assisi (1181-1226), there will be some movement toward sanity from the insane doctrine that prevails at present. But as Weisman, and long before him Stephen D. Mumford, have both written, the doctrine of papal infallibility is one tough standard to buck and then chuck. This doctrine traces back to 1870 and Vatican Council I. Because earlier popes condemned "artificial" birth control, subsequent popes have had to toe this line or risk calling into question their infallibility in matters of faith and Church doctrine; this in turn could undermine their authority in all areas.

Some might ask, so what? Catholics in Europe, North America, and more and more, South America ignore papal stupidities on birth control by the hundreds of millions anyway. But it does still matter in countries like the Philippines, Honduras, and many others in Africa, that collectively, also hold hundreds of millions of people. In these places the Vatican's doctrines still hold sway and still thwart family planning initiatives, condemning hundreds of millions to stunted lives and contributing to political and social instability and environmental degradation.

Weisman's visit to the Vatican is a fascinating descent into to the lion's den of population denial, or better yet, a journey through the looking glass into a parallel universe. "The Church has never been against birth control," argues Cardinal Peter Kodwo Appiah Turkson, a native of Ghana. "It's just a problem of method." Turkson heads up the Pontifical Council for Justice and Peace, the branch of the Vatican bureaucracy that takes the lead on environmental issues.

Ah yes, the infamous problem of "method." This is a euphemism for the Vatican's obstinate refusal to countenance anything other than the notoriously ineffective rhythm method of birth control. Years ago, at a public forum on religion in Santa Ana, California, I was speaking out against my own Catholic Church for opposing family planning; suddenly I was cut off in mid-sentence by a devout parishioner who protested that what I was saying was patently false. The Church did in fact support family planning, he insisted. "Why, I come from a planned family of seven!" he boasted, oblivious to the irony of what he had just said. (Shortly afterwards, I berated myself for not having the on-call wit to counter, "Well then, I rest my case!") But the Catholic Church leadership's intransigence on population control goes well beyond the choice of family planning method, for while out of one side of their mouths they say they have no problem with birth control in principle, only the wrong (read, more effective) methods, out of the other side of their mouths they state repeatedly and categorically that the Earth can absorb an ever-growing human population if only there were justice and a compassionate Christian sharing of wealth and the means of production. Pure utopianism and pure hogwash.

As Weisman sagely observes, beneath it all is the cold reality of what confers power:

> Lurking behind such contortions of learned men who are genuinely worried about melting poles and deepening droughts, yet who still insist that a million more of us every four days or so is a blessing, is a simple accounting cipher. Even an infallible pope has little power if his flock shrinks too far. Like Yasser Arafat's womb-weapon and the overbreeding of Israel's *haredim*, the Church has a fundamental, vested interest in bodies. The more Catholics there are in the world, the more the judgment of 1,000 male citizens of Vatican City matters.

Outside the cloistered Vatican walls, Weisman takes us into Italy proper, where:

> Italians aren't having babies because it's too expensive, or they flee Italy to have them somewhere else. Meanwhile, Italian schools are overfull, because immigrant children are taking the place of missing natives.

In other words, the West in a nutshell. And perhaps the place which best captures the future of the "West" and "the Rest" is the Far East, where Japan has become a laboratory of sorts for how countries might cope with shrinking populations. Here, Weisman shows us how the Japanese are facing up to challenges posed by having the highest longevity in the world coupled with one of the lowest fertility rates (closer to 1 than 2): robots. A photograph shows an uncertain-looking Weisman in the firm arms of Riba II, the first robot in the world that can lift a human. The insular Japanese have long resisted immigration as a means of addressing their labor shortage, but unlike his undisguised contempt for the opposition of some Englishmen to mass immigration of people with very different values, Weisman writes more sympathetically:

> Although some Japanese accuse their country of racism, most agree that shared cultural values are why Japanese society functions so smoothly, why its cities are so orderly, and why crime in Japan is so low.

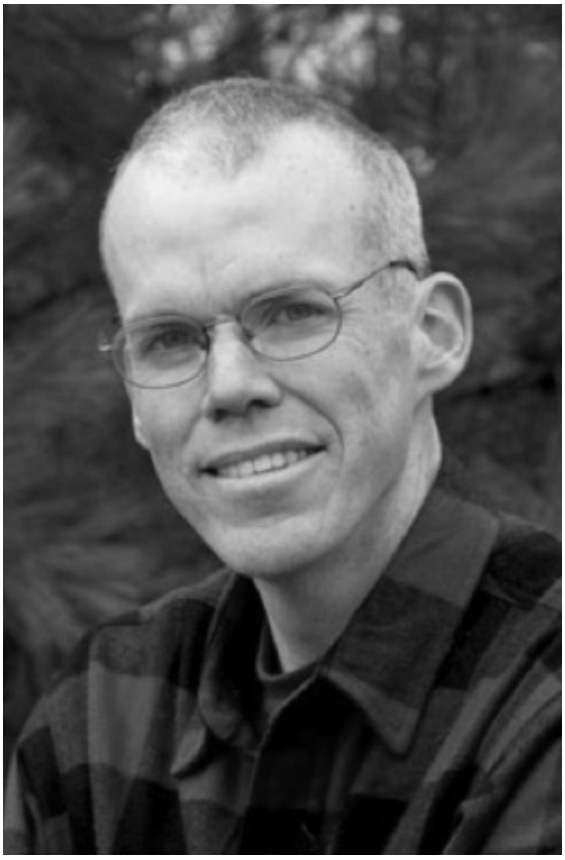
Overall, the beauty of this book is that Weisman takes the reader to so many far-flung outposts scattered across the world — Uganda, China, the Philippines, among those already mentioned. Each exemplifies one facet or more of the many diverse dimensions of humanity's collective population challenge. In his final chapters, he considers our prospects for "counting down" human numbers in light of trends which should give us a measure of qualified hope — lowering birth rates, greater awareness of Earth's limits, green technologies, empowerment of women, and so forth. He doesn't exactly end on a positive note, but more on a pensive one. And he includes a perceptive observation from seventeenth century mathematician and philosopher Blaise Pascal, that human beings are "somewhere between angels and animals." Weisman continues:

> Nevertheless, the fate of many species beyond our own now depends on the skills of human stewards to finesse a delicate equilibrium among prey, predators, plants, and ourselves.

Despite my quibbles, I loved and learned much from this book overall. I highly recommend it to anyone interested in the many contemporary population challenges individuals, tribes, religions, nations, and the Earth face at this stage in our history.

Fragile Mother Earth, tough new planet, or both?

Environmentalist and former *New Yorker* staff writer Bill McKibben shot to prominence in 1989 with the publication of his thought-provoking book about climate change, *The End of Nature*, which was translated into more than 20 languages. Since then he's gone on to author many others, among them, *Maybe One: A Case for Smaller Families*; *Hope, Human and Wild*; and *Oil and Honey: The Education of an Unlikely Activist*).



McKibben's productivity is nothing short of prodigious. Not many notable writers can claim to have spearheaded an international activist campaign as well, but McKibben has done just that with the movement to fight climate change; he founded the anti-carbon organization 350.org in 2007 and continues to lead this group, which has activists and carries out campaigns in scores of countries. In August 2011 they mobilized a sustained, weeks-long protest against the proposed Keystone XL Pipeline that led to hundreds of arrests at the White House. I participated in one of these, sitting down on the sidewalk with a few dozen protestors beside the White House fence along Pennsylvania Avenue. However, I opted to leave at the point of the final police warning, just before these dissidents were herded into police paddy wagons; as prosaic as it seems, I had to get

home to take my son to his soccer practice. Not having made alternative arrangements, a few hours or a night in jail would have been more personal disruption than I was willing to bear to do my bit to forestall climate disruption.

The Keystone XL Pipeline would carry syncrude from Canada's "oil sands" (the Athabasca tar sands located in western Alberta) down to Texas for refining and distribution. The tar sands contain a huge amount of carbon locked up as gooey bitumen — more carbon than in any other single fossil fuel reserve currently in production on the planet. If all the carbon in the tar sands were to be combusted and converted to carbon dioxide, it would be "game over" for the climate, according to prominent former NASA climatologist James Hansen, who himself was one of the many celebrities arrested during those 2012 White House protests.

Climate and anti-tar sands protestors at the White House, August 2011

Like other environmental activists born in the latter years of the Baby Boom, McKibben takes a more globalist view of environmental issues than conservationists of earlier generations, such as Sierra Club executive director David Brower, Earth Day founder Gaylord Nelson, Interior Secretary Stuart Udall, and even the younger founders of Earth First! (Dave Foreman) and Greenpeace (Paul Watson). Early in 2013, I took McKibben to task in an article published in the magazine *Population Press* for an op-ed he penned for the *Los Angeles Times* supporting "immigration reform," that is, amnesty for ten million or more illegal immigrants and greatly increased future legal immigration. McKibben wrote that this would improve the politics of passing legislation in the U.S. to combat climate change; I countered that this was wishful thinking on his part.

In *Eaarth: Making a Life on a Tough New Planet*, McKibben returns to the climate theme that launched his book-writing career. The additional 'a' in the 'Eaarth' of his title symbolizes that we are living on a different planet than the stable, predictable home that nurtured *Homo sapiens* in its infancy and through our growth to a geologic force in our own right; indeed, the climate has changed markedly even since those reading this saw their first snowfall or sweated while falling asleep on a warm summer night before air-conditioning became widespread.

If one succinct term could describe the altered Earth that McKibben is describing, it is "the new normal." McKibben writes:

> Don't let your eyes glaze over at this parade of statistics (and many more to follow). These should come as body blows, as mortar barrages, as sickening thuds. The Holocene is staggered, the only world that humans have known is suddenly reeling. I am not describing what will happen if we don't take action, or warning of some future threat. This is the current inventory: more thunder, more lightning, less ice. Name a major feature of the earth's surface and you'll find massive change.

McKibben informs us that the tropics have expanded by more than two degrees of latitude north and south since 1980, growing by some 8.5 million square miles. The dry sub-tropics are also being forced outwards, with grave implications for ecosystems and many millions of residents who live in these ever more arid regions. Australia is a case in point. Here westerly winds carrying rain are being pushed southward and dropping their load of moisture into the open ocean rather than on Australia's thirsty land mass. Water managers in Australia are trying to avoid the term "drought" because that would imply that it may actually end someday, and they don't believe it will. Brushfires claimed hundreds of Australian lives in 2009 alone.

Across the Earth, rivers are carrying less water than they used to. Even some mountain ranges are literally falling apart, as the ice that held their crumbly, weathered rock together like glue is vanishing. While this is quite trivial in the larger scheme of things, given the

scope of what is at stake, it is important to those adventurous and inspiring souls who call themselves mountaineers. The loss of ice can make it very treacherous to climb in such mountains because of the elevated risk of being struck by a falling rock. Years ago, descending a summit called American Peak in Washington's Cascade Mountains north of Mount Rainier and south of the Canadian border, I observed a rock the size of a bowling ball dislodge right before my eyes as the ice that had been gripping it melted in the late summer sun. It plummeted down a chute, closing rapidly on my girlfriend Vicki, who managed to duck to one side as it hurtled past. It was some tense minutes before I was even sure that she had survived this close encounter with dynamic geologic processes.

McKibben reviews some of the myriad changes that are now changing the planet before our astonished eyes into something alien and unknown in all of human history:

> • Along the western edge of South America, Andean glaciers are disappearing, reducing the dependable supply of water that millions of residents just west of the Andes have counted on for centuries.
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> • In China alone, 300-million people rely on snowmelt that is diminishing with the accelerating loss of snow and ice in the Himalayas.
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> • In the last thirty years, there have been more than four times as many weather-related disasters than in first three-quarters of the twentieth century combined.
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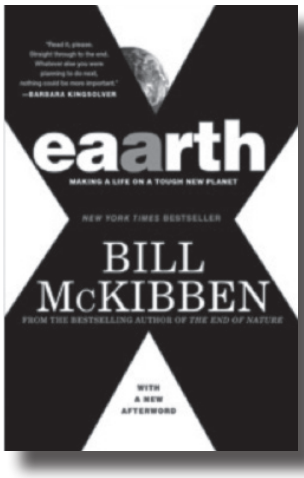
> • The ocean is 30 percent more acidic since humanity started burning fossil fuels, as a result of carbon dioxide dissolving into carbonic acid. Britain's Royal Society (the most prestigious scientific body in the U.K.) has described this process as "essentially irreversible."

McKibben is struck by the resigned reaction of some people to this unfolding disaster:

> Often on speaking to audiences, I'll find people who have moved to a zone of spooky calm: yes, they say, human beings may do themselves in, but 'the planet' will survive. That's true in some sense, at least until the sun explodes, but it won't be anything like the planet we've known. We're hard at work transforming it — hard at work sabotaging its biology, draining its diversity, affecting every other kind of life we were born onto this planet with. We're running Genesis backward, de-creating.

The most striking difference between *The End of Nature* and *Eaarth*, published 22 years apart, is that whereas the former was speculating about the ominous future, the latter is documenting the ominous present. The future has begun to arrive ahead of the schedule that both McKibben and the climate scientists had forecast back in the late 1980s. Early writings on the climate change menace, including those of McKibben, held out hope that concerted, collective intervention could perhaps avert its worst ravages by directing industrial civilization onto another path. This was the path of "decarbonization," by taking a number of radical steps — population stabilization, a crash program of developing renewables and energy efficiency, steady-state economics, and so forth. While tentative baby steps have been taken on each of these fronts, in sum they amount to far too little, too late. The concentration of CO_2 in the atmosphere continues to increase inexorably, and at an accelerating rate, and the climate is being destabilized. The human juggernaut resists all feeble efforts to halt it, tame it, or even point it in a less destructive direction.



As writer Elizabeth Kolbert wrote in a 2005 *New Yorker* article entitled "The Climate of Man": "It may seem impossible to imagine that a technologically advanced society could choose, in essence, to destroy itself, but that is what we are now in the process of doing."

Thus, much of *Eaarth* is about recognizing this unfortunate reality and encouraging adaption, not prevention, for which it is already too late. McKibben's ideas, if implemented on a wide scale, would not only help blunt or mitigate even worse, perhaps catastrophic, climate change, but will help us make the best of dire, unavoidable circumstances. He writes:

> New planets require new habits. If you walk out the airlock on your Martian base and start breathing, you'll be sorry. If you find yourself on Pluto, a strong leap will take you 116 feet into the air. We simply can't live on the new earth as if it were the old earth; we've foreclosed that option.

In the second half of the book, the two chapters entitled "Backing Off" and "Lightly, Carefully, Gracefully," McKibben shares his vision for living on the "new earth." *"Can we imagine smaller?"* he asks. That modest question itself is a heresy in an age whose shared ethos is endless growth. In our time, "Damn the torpe-

does!" has morphed into "Damn the limits!" and "In God We Trust" into "In Growth We Trust." In these chapters, McKibben explores a number of approaches for living more lightly on "Eaarth," strategies for maintenance, repair, restoration, community, re-localization, and even local currencies. The mainstream will regard these suggestions as hopelessly idealistic or even utopian, but if McKibben and the scientists are correct about the tough new world we're entering, then our response will need to be brave and new. Ideas like these may suddenly seem not utopian, but eminently practical, even lifelines. Battle-hardened and weary, but ever idealistic and firm, McKibben ends on a philosophical note:

> The momentum of the heating, and the momentum of the economy that powers it, can't be turned off quickly enough to prevent hideous damage. But we will keep fighting, in the hope that we can limit that damage. And in the process, with many others fighting similar battles, we'll help build the architecture for the world that comes next, the dispersed and localized societies that can survive the damage we can no longer prevent.

Are we really f**ked?

Stephen Emmott, Ph.D., is a computer scientist with a background in biology. Emmott's *Ten Billion* is the shortest and most succinct of the four books. It is also the hardest hitting, indeed, the most incendiary of the bunch. Yet Emmott's distinguished *curriculum vitae* gives no hint of a Monkey Wrencher or a radical tree-hugger blocking the bulldozers. Far from it. He is head of computational science at Microsoft Research in Cambridge, England, as well as Professor of Computational Science at the University of Oxford. Emmott is also a Distinguished Fellow of the U.K.'s National Endowment for Science, Technology and the Arts. In 2012, Emmott became the unintentional star of the critically acclaimed one-man show or lecture called "10 Billion," directed by Katie Mitchell and performed at London's Royal Court Theatre in exclusive Sloan Square. The *Guardian*'s theatre critic named it the theatrical event of 2012. *Ten Billion* is Emmott's first book, and it is an outgrowth of his foray into "acting."

The title of his stark play and equally stark book of course refers to the UN's projection of the size of the world's population at the end of this century. Given that the year 2100 is 87 years away, that the Earth's human population is now 7.2 billion and counting (a million more added every fourth day), and that humanity has been adding another billion every 12 years or so for some decades now, to reach *only* 10 billion by century's end implies a major slowdown in our growth rate.

Even if we succeed at braking (and breaking out of) population growth, the operative, but terribly poignant question is whether we haven't already overshot the long-term carrying capacity of Earth. In other words, there may already be "too many" of us. Emmott is all too aware of this dilemma, as well as the fact that perpetual growth until we bump into hard limits seems all but written into our species' and our civilization's hardwiring.

Stephen Emmott

"As our numbers continue to grow, we continue to increase our need for far more water, far more food, far more land, far more transportation, and far more energy" writes Emmott.

> An increasing population accelerates the demand for more water and more food.
>
> Demand for more food increases the need for more land, which accelerates deforestation.
>
> Increasing demand for food also increases food processing and transportation.
>
> All of these accelerate the demand for more energy.
>
> This then accelerates greenhouse gas emissions, principally CO_2 and methane, which further accelerates climate change.

In sum, Emmott thinks our species is not up to the intensifying and converging challenges that we now confront. He hits the nail squarely on the head when he observes:

> In short, we urgently need to consume less. A lot less. And we need to conserve more. A lot more.
>
> To accomplish such a radical change in behavior would also need radical government action.
>
> But as far as this kind of change is concerned, politicians are currently part of the problem, not part of the solution, because the decisions that need to be taken to implement significant behavior change inevitably make politicians

very unpopular — as they are all too aware.

A couple of decades ago, human ecologist Garrett Hardin wrote something to this same effect — that he was pessimistic about our near-term prospects because, in the current cultural, social, and political milieu, the sorts of policies that were genuinely environmentally sustainable would not be politically palatable, while those that were politically palatable would not be environmentally sustainable.

As noted at the outset, Emmott dispenses with any obligatory note of — what for him would certainly be — false hope and concludes that our goose is, or soon will be, cooked. Which is different than saying "we're outta here" (i.e., extinct). Yet the survivors of what is left of civilization may well envy the dead (which is what used to be said about the survivors of a full-scale nuclear war). In recent fiction, Colmac McCarthy's Pulitzer Prize-winning, post- apocalyptic novel *The Road* (made into a movie with Viggo Mortenson as the desperate, dying father), comes closest to matching the grim outlook of *Ten Billion*.

The reader is left with a glaring question or two, or three: If the situation is so hopeless, why do I bother even to read this book or to care? Why did I just spend $10 purchasing it? Why has Emmott invested so much time and energy into this lost cause, if that's what he really believes it is? Is it because, deep down inside, he thinks we really do have more than a snowball's chance in hell of coming out of the approaching crisis with our humanity and our civilization intact? Or does he want to share his despair so as not to feel so isolated, as in "misery loves company"?

Brilliant and mordant Canadian writer Tim Murray, who lives on Quadra Island off the rugged, wet coast of British Columbia, has addressed this issue in a recent essay. "Our Struggle Is Futile" drips with poignant resignation as the tall Douglas-firs and western hemlocks on Quadra Island drip with rain:

> This is not the future I want. It is not a future I want to think about. And it is not a future that I can survive. I don't want to believe in this future, but so far, no one has given me a good reason why it will not come to pass. I am sorry, but I think our struggle is futile. It is a conclusion that I suspect most of you have long shared. Some of us will give up and withdraw, while others will keep on fighting because it is therapeutic and habitual. Either course is defensible. The result will be the same.

While mandatory optimism (the "hopium" cited earlier) is a flaw of too much writing on the environment, obligatory pessimism mars environmental advocacy and writing as well. It has been nicknamed "doom porn." Advocates believe that they won't get even an inch unless they argue for at least a mile. Yet none other than Donella Meadows, lead author of that classic 1972 "doomsday" book *The Limits to Growth*, wrote not long before her untimely death in 2001 that:

> I've grown impatient with the kind of debate we used to have about whether the optimists or the pessimists are right. Neither is right. There is too much bad news to justify complacency. There is too much good news to justify despair.

Crisis, what crisis?

Danny Dorling, author of *Population 10 Billion: The Coming Demographic Crisis and How to Survive It*, is a British social geographer. He is the Halford Mackinder Professor of Geography in the School of Geography and the Environment at the University of Oxford, which makes him a colleague of Stephen Emmott, who is also at Oxford. But the two must be at opposite ends of the campus, because they could not be further apart in their orientation and outlook on the human prospect. Indeed, one gets the feeling that Dorling wrote *Population 10 Billion* at least in part as a long refutation to what he felt was unjustified despair on Emmott's part. "Stephen Emmott is the embodiment of angry pessimism," he writes.

***Population 10 Billion* author Danny Dorling**

When Dorling writes that "…the actual number of people on the planet is, to an important extent, incidental to the impact humans have both on the environment and each other," it raises my hackles. The number of people merely "incidental" to their environmental impact?

This assertion flies directly in the face of the IPAT equation (Impact = Population x Affluence x Technology). Population size is directly correlated with environmental impact; it is a direct causal factor, a force multiplier, not just some minor secondary influence, like whether one prefers granola or oatmeal for breakfast, or takes the bus or rides the subway to work. I think initially and instinctively, "here is another population denialist," in the vein of a Julian Simon, who argued that there are no limits to growth that cannot be overcome by the unshackled, innovative human mind, which in his reckoning was "the ultimate resource." Simon was infamous for his outlandish claim that humanity had the technical wherewithal to support an ever-growing human population for the next seven billion years.

However, upon reading deeper into Dorling's book, I realized that he is not denying limits at all, but rather expressing confidence in humanity's resilience and innate ability to rise to the challenges posed by these limits. To live within limits, but to do so in a way that is not mere survival, that is reasonably satisfying and not stifling or filled with suffering. He writes: "The deceleration in the growth in our algae-bloom-like explosion of humanity is just one reason to set the worst pessimism aside for awhile." Julian Simon would have expressed disappointment that the population explosion was subsiding, whereas Dorling expresses satisfaction and thinks that it is one reason to feel hopeful for our future. Many population activists would argue that he is far too sanguine and complacent about where current demographic trends are leading us.

But what Dorling does, and I think rightfully so, is acknowledge our species' incredible versatility and adaptability, our capacity to adapt appropriately to changing circumstances, even radically different ones. He also rightfully cautions environmentalists and population alarmists against rigidly extrapolating recent trends:

> …the period 1851-1971 was an aberration in the long-term human demographic and economic record. We need to stop seeing our recent past, and the downturn and polarization that followed it, as normal. We need to regard economic growth as evidence of moving from one form of society to another, not as a never-ending process. Look at things this way, and the future is far less frightening.

Dorling has a demographic orientation and manages to arrange a vast array of demographic data in different and interesting ways so as to put the "algae-bloom-like" explosion of human numbers into perspective. He also has a confession to make: that in spite of the book's title, "I very much doubt that there will ever be 10 billion people all alive at the same time on this planet…" Many environmentalists, Lester Brown of the Earth Policy Institute for example, share this doubt. However, there is a crucial distinction. Whereas Lester Brown and others like him think that the Earth's resources, especially its agricultural and water supply systems, are incapable of supporting 10 billion humans for any sustained length of time, Dorling would argue that we will not reach that figure in the first place because prolonged low fertility will prevail in most societies. He tends more to believe that population will begin declining of its own accord as more educated people freely choose to have smaller families.

Dorling writes optimistically:

> …for the first time in centuries, the sun will rise over the Pacific and cast its light on one fewer living soul than the day before. For the first time ever, that can occur without it being due to thousands more suffering from both unusual and agonizing deaths than the numbers who are born that day. The population explosion is ending peacefully.

Dorling calls himself and other like-minded proselytizers such as Bjorn Lomborg and Hans Rosling not optimists, but "practical possibilists." These practical possibilists utterly reject the view that modern civilization is essentially doomed or pre-programmed to collapse, and they worry that if too many people start to think this way and act upon it, then this fate may become a self-fulfilling prophecy.

Dorling believes that human beings can still forge their own destiny on this Earth, and that it is not too late to salvage a future that would be worth living in:

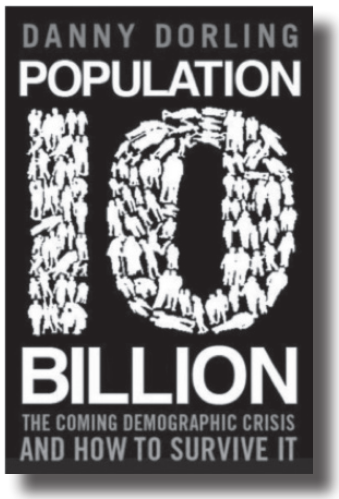
> Human beings progress by telling stories. One event can result in a great variety of stories being told about it. Sometimes these stories differ greatly. Which stories are picked up and repeated and which are dropped and forgotten often determines how we progress. Our history, knowledge and understanding are all the collections of the few stories that survive. This includes the stories we tell each other about the future. And how the future will turn out depends partly, possibly largely, on which stories we collectively choose to believe.

Dorling continues:

> What we need more of are 'practical possibilists' and their stories; stories that sit between those who say that all will be fine, and those who claim that we are doomed. I believe there is a chance we might stumble through after all, just as we have in the past. Whether you think this is possible depends on which

stories you hold to and how you act on them. If greed prevails, we are probably doomed. If doom-mongers prevail, who is going to care about trying to prevent the greedy from hammering the final nails into humanity's coffin?

It has been noted by others, and I will note it again here, that, while there are certainly exceptions to the general rule, much of the interminable debate between the so-called optimists and pessimists on the prospects for population, civilization, and the biosphere is between opposing disciplines and their perspectives. In one camp are the social scientists (e.g., economists, sociologists, demographers, historians, political scientists, anthropologists), who tend toward optimism, and in the other are the natural scientists (e.g., biologists, ecologists, geoscientists, physicists, astronomers), who tend toward pessimism. Engineers can fall into either camp. Geography spans the spectrum because it is such a diverse discipline, with branches ranging from physical geography to economic geography. Dorling himself writes: "Scientists know about science and often like to technologize, but when it comes to history, geography, economics, politics, and sociology, their attention span wanes."



Garrett Hardin used to use the term "numerate" to describe someone who had an intuitive grasp of numbers and their significance. He also coined the adjective "ecolate" to describe someone who had an intuitive grasp of ecology. Dorling is incredibly numerate but not very ecolate. In *Population 10 Billion*, he evinces little understanding of ecology, natural systems, phenomena, forces, and processes. They are given remarkably short shrift, and what little attention they receive tends to be incoherent and disjointed, not thorough. Perhaps this is why he can afford to be cavalier about these natural systems upon which civilization is utterly dependent.

Another thing he is cavalier about is humanity's crushing impact on biodiversity, about which he writes: "We are presiding over a period of the mass extinction of species, but we have done so before and survived." This thoroughly anthropocentric view — that all that matters is whether our own species *Homo sapiens* survives — is profoundly disturbing to me, but then I'm a wildlife biologist, so perhaps that isn't surprising — the influence of professional prejudice again.

In his short Afterword, Dorling counsels us that we ought to be more worried about climate change than about 10 billion people on the planet. This remark reveals once more his strange disconnect or cognitive dissonance, the inability to recognize that climate change itself is but one of the environmental consequences of so many people on Earth.

In sum, *Population 10 Billion* makes some important points, particularly about human adaptability and the importance of not uncritically extrapolating recent demographic and economic trends. However, it is not the antidote to rational pessimism its author hopes it is because it is largely dismissive of or oblivious to the crucial concept of carrying capacity and the critical environmental resources that underlie and sustain human civilization. Seven billion humans are busy squandering the natural capital needed to sustain even this number, to say nothing of 10 billion.

Regrouping

At the outset of this long review, I lumped together three of the four books under consideration — *Countdown*, *Eaarth*, and *Ten Billion* — into the general "doom and gloom" genre, and the fourth, *Population 10 Billion*, into what I called the contrarian camp of optimists, or as they themselves prefer to be called, "practical possibilists."

However, there is another way to organize this group into two sets — into those which argue that we still have a fighting chance, in spite of the formidable challenges we face and the late hour, and those which argue that we're colossally screwed. In this breakdown, *Population 10 Billion* would move in with *Countdown* and *Eaarth*, while *Ten Billion* would stand alone.

As for myself, I appreciate all of these perspectives. I have enjoyed following and occasionally weighing in on this stimulating, depressing, and often acrimonious debate for the past four decades. But I fear that most of the sand has already slipped through the hourglass while the intellectuals among us debate away from their podiums and computers, with all too few paying attention or caring. Meanwhile, the vast, apathetic mass of human beings focuses on what is important in the here and now — working, playing, birthing, loving, hating, befriending, warring, dying, surviving, and getting richer if at all possible. In the process, each one of us, all 7.2 billion, though some much more than others, is impacting the Earth in profound ways that undermine its capacity to support our kind — and other life — now and in the future. ■