



# **The World in 2050: Four Forces Shaping Civilization's Northern Future**

*Laurence C. Smith*

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A vivid forecast of our planet in the year 2050 by a rising star in geoscience, distilling cutting-edge research into four global forces: demographic trends, natural resource demand, climate change, and globalization.

The world's population is exploding, wild species are vanishing, our environment is degrading, and the costs of resources from oil to water are going nowhere but up. So what kind of world are we leaving for our children and grandchildren? Geoscientist and Guggenheim fellow Laurence Smith draws on the latest global modeling research to construct a sweeping thought experiment on what our world will be like in 2050. The result is both good news and bad: Eight nations of the Arctic Rim (including the United States) will become increasingly prosperous, powerful, and politically stable, while those closer to the equator will face water shortages, aging populations, and crowded megacities sapped by the rising costs of energy and coastal flooding.

*The World in 2050* combines the lessons of geography and history with state-of-the-art model projections and analytical data-everything from climate dynamics and resource stocks to age distributions and economic growth projections. But Smith offers more than a compendium of statistics and studies- he spent fifteen months traveling the Arctic Rim, collecting stories and insights that resonate throughout the book. It is an approach much like Jared Diamond took in *Guns, Germs, and Steel* and *Collapse*, a work of geoscientific investigation rich in the appreciation of human diversity.

Packed with stunning photographs, original maps, and informative tables, this is the most authoritative, balanced, and compelling account available of the world of challenges and opportunities that we will leave for our children.

## The World in 2050: Four Forces Shaping Civilization's Northern Future Details

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## **Dave Schoettinger says**

Professor Smith has spent much of his professional life visiting those parts of the world north of 60 degrees latitude in order to study and document the impact of climate change on those areas. What he has discerned from this work is that while, for the planet as a whole, climate change is proving to be a real bummer, for the Far North, there are some positives mixed in. For instance, while the polar bear may be doomed because of the disappearance of sea ice from which to hunt the seals, the same lack of sea ice is going to make large areas of the Arctic Ocean accessible to shipping for at least a part of the year. It may also increase the life expectancy of those seals. (This last observation is my own, not Professor Smith's). The author goes to great lengths to explain that the Arctic is not going to turn into the Caribbean, or even Long Island Sound, but it will make it easier to transport some of the resources of northern Canada and Russia to the rest of the world. In other words, although an ice-free Arctic may interest Exxon/Mobil, it will do nothing for Sandals. Professor Smith also points out that the land areas north of 45 degrees of latitude have more than their share of the world's fresh water resources. He suggests that, in the long run, water may become the region's most valuable export.

Smith's conclusions are fascinating, however the reader will have to get through the first 80% of the book, which to many, will appear to be the standard environmentalist story line of how the world is going to hell in a hand basket (and it's probably your fault).

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## **Dan Needles says**

I had to read a lot of books to get past the political drama of today, trying to get a glimpse of what tomorrow will look like. Everyone these days needs to be an extremist to have their voice heard. So the airways are clogged with Fox and MSNBC and all things marketing and sales, not substance. Like an ecosystem under stress there is more thorns, pollen and other environmental shrapnel than any grounded data in this genre. That said, this book is an exception.

Not only do they stick a stake in the ground and allow it to be kicked at, they do so by tabulating lots of facts along with the normal in the field research. As a result the author comes up with 4 forces that will shape things in the next 40 years. Most importantly he sees past the drama and asked well - how will we cope with things and comes up with some very plausible possibilities. Further he has not drunk too much of his own Kool-Aid and is very clear about the assumptions he is making and the fact that you cannot know what you do not know.

After trudging through over a dozen books on this topic, each of which was likely written by adults raised as only children, assured they had a monopoly on truth and as such provided a very narrow and usually "we will all die by next year" ti-raid, it was nice to have some normalcy and grounding for once.

That said this is not a rosy picture - but everyone knows that. However, this does see past the drama and envisions part of how we got in this mess - humans adapting in order to stay the same waiting till the last possible minute to make real changes and doing so only when forced.

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## Phillip says

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A. The World in 2050 by Laurence C. Smith is a revolutionary book based on observation and data that is used to predict our world's future. The author forecasts our environmental and financial world where power is gained and our past mistakes could lead us to disaster. Laurence C. Smith is the vice chairman, professor of geography, professor of earth, and professor of space sciences at the University of California. The book explains there are four global forces; demography, and the growing demands that humans desire upon natural resources, globalization, and climate change. The first demography which concerns the ups and downs of a population in different parts of the world. Apparently every six to twelve years we add another billion to the overall population of the earth. Every year earth becomes increasingly overpopulated. The second global force, the growing demand for natural resources, humans are overconsuming natural resources which will cause shortages for certain resources for the overall population. The third global force is globalization we are becoming more interdependent on other nations across the world. The world is developing into one big economy. The fourth global force is climate change the temperatures on earth are increasingly getting hotter we humans from the use of industrialism have increased the carbon dioxide by forty percent.

B. I rate the book five stars out of five because it provides evidence for its claim on the environmental problems we will be facing near in the future. It doesn't shy away from the truth it actually isn't a feel good story at all it gives an honest reality of what humans have accomplished for our world's health. Humans in the last hundred years have increased the time range it takes to reach a billion. "11,800 years .... 130 years.... 30 years.... 15 years.....12 years...." the birth rate is higher than the death rate. A similar book called the Population Bomb speculates that overpopulation will cause famine and smog deaths. They say he influenced China's policy for one child population control policy in 1979. Our world is becoming more interdependent on each other in trade most furniture or appliances aren't made in America. For most appliances or homes are made of natural resources. "We need trucks and diesel and metal hulled ships to move ores and fish to manufacture goods from the places that they have to places they want them". Our modern day Americanized culture portrays that our consumption factor is normal when it's not. For climate change they used data from well known scientist such as Joseph Fourier. "Humans have raised the CO<sub>2</sub> concentration forty percent" (Smith 32). I enjoy reading this book because it gives the honest truth about mistakes rather than glorifying past things that humans have accomplished that are not beneficial to our future.

C. I would definitely recommend to people who haven't read this book because it gives you a deeper understanding of environmental problems. If you're interested in helping our community this book can give you more important issues for you to cover. If you're in joining clubs that concern the environment in high school that specialize in beach pickup etc it could introduce you to more concerning matters that the earth needs help with. If you're interested in science this book gives factual science evidence from well known scientists including the author himself.

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## Paul says

This book explores the things that humanity has waiting for it in the next few decades.

The number of mega-cities (those with a population of over 10 million) will only rise, as the world's population will pass 9 billion. Some of those cities will be clean and efficient, like Singapore. It is much

more likely that they will be over-crowded, polluted and crime-filled, like Lagos, Nigeria. The question is not will sea levels or the Earth's overall temperature rise, but, by how much will they rise.

As the world gets older and grayer, and as America's baby boomers start to retire, younger workers will be needed to keep the economy moving. Where will these workers come from? Water problems, and water shortages, in normally dry places like sub-Saharan Africa and the American Southwest, will only get worse.

The author spends much of the book looking at the New North, the countries that border the Arctic Circle, including America, Canada, Russia and Scandinavia. There is the potential for a lot of oil or natural gas under the ice. In Alaska and Canada, local indigenous groups have gained joint, or total, control, over the natural resources that lie under their feet. The extending of the temperate climate zone to the north makes agriculture more and more possible on formerly barren land (like growing potatoes in Greenland). The thawing of the permafrost makes building more difficult in remote northern towns. Digging foundations, or putting in pylons on which to build a building is impossible when rock-solid ice is only a foot or two below ground level. It also shortens the "trucking season," where those remote northern towns can be re-supplied by trucks, which is a lot cheaper than doing it by boat or helicopter (think of the TV show "Ice Road Truckers").

This is a fascinating book. For some people, the information here may not exactly be new, but the author does an excellent job. It is compelling, and very much worth reading.

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### **Jenny williams says**

In all honesty, this book almost made me more scared than anything. I'm not saying it's a bad book because I thoroughly enjoyed it. Some of the points he made and some of the facts he highlighted throughout the novel were absolutely astonishing. Laurence Smith is correct in 100% of this novel and he did it the easy way; with facts. The entire book reiterates the point of the world that we are going to leave behind for our children and grandchildren which is a chilling visual. The way that he paints a mental illustration in your head of what our world will be like when water is \$5.00 a bottle and gas will be so rare that it'll cost a few hundred bucks just to fill your tank up once. It's those kind of thoughts and statements that kept me interested throughout the entire thing simply because it's all reality and not many people will face it. Smith doesn't only offer factual information, he mentions probable future scenarios on a global scale that are extremely gut wrenching to consider. For example he goes in depth on climate change and how it WILL happen rather soon and the effects of it will cause mass flooding, dry spells to most countries near the equator with 8 solid nations that will be stable. When I read that section of pages I had to stop and think for a few minutes. My exact thought was "there are 196 (give or take) countries on this planet we live on and you mean to tell me that within my lifetime I will see a vast depletion and be left with 8 stable, functioning countries?" That to me was one of the craziest call to actions in my entire life. Moving book. I loved it.

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### **Mahmoud Ramadan says**

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## **Heather says**

What will the world be like in 2050? There's no science fiction here. This is a book of solid projections from major global trends written by a scientist.

Author Laurence Smith engages in a thought experiment: what will the world be like in 2050? He makes 4 assumptions upon which his predictions are contingent. 1) No Silver Bullets - no radical game changing technology (ex. cold fusion). 2) No World War III. 3) No Hidden Genies - no low probability, high-impact events (ex. a large meteorite impact). 4) The Models are Good Enough - current computer modeling capacity is adequate enough to make good projections. In other words, predicting from where we are now, with the tools we have now, assuming no major upsets in the next 40 years.

With the rules established, Laurence Smith tracks 4 major global forces, arguably the largest and strongest forces, to their logical conclusions at the target date of 2050. He tracks: 1) demography - birth rates, income, ethnicity, migration, etc. 2) resource demand - demands placed upon the natural resources, services and gene pool of the planet. 3) globalization - the interconnectedness of the world. 4) climate change.

What conclusions does this thought experiment reach? Mainly, we should prepare for a global shift to the North, specifically the eight NORC countries (Northern Rim countries). They are set to become formidable economic powers and migration magnets. Global warming, while wrecking havoc on the environment, will also liberate a treasure trove of gas, oil, water and other natural resources previously unattainable in the frozen north, enriching residents and attracting newcomers. It will also open new shipping lanes in the Arctic resulting in new access and economic development in the North. Time to buy land north of the 45th parallel!

If human population and economic prosperity trajectories continue, prepare for water to become "blue oil" as demand exceeds supply. For wildlife to suffer the greatest rate of extinction since the disappearance of the dinosaurs 65 million years ago. For societies to be forced to choose dirtier power sources to keep up with energy demand.

I found one hypothetical in his conclusions particularly interesting. Might any of the 4 major global forces screech to a halt between now and 2050, changing predictions? His answer was that only one, globalization, could be derailed shifting world economies from globalization to regionalization. Perhaps as the result of global protectionism? Perhaps as a result of future lack of cheap energy for transport? Perhaps an energy shortage could even create a reversal of urbanization as farming returns to being labor-intensive, a return to domestic manufacturing, or a collapse of overseas tourism? Globalization might be the wild card that changes the equations.

In summary: An interesting book of solid projections on the world your children and grandchildren will likely inhabit.

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## **Fred Dameron says**

A good view of four major forces that will drive our future. Peak oil, population growth, lack of water, and climate change. Any one of these would not be a problem if we weren't past peak oil. Population grow more food and provide more stuff using cheap oil. Lack of water, desalination or drill to deeper aquifers using cheap oil. Warming build dikes around the vulnerable cites including the third world countries, Bangladesh,

who are most vulnerable to sea level rise and the heavy down pours of the new normal, using cheap oil. Peak oil, there is no substitute for oil. Not at a price the consumer is willing to pay. Also oil just adds to the warming issue but, one could use cheap oil to build the infrastructure needed to protect low lying areas. Even if by doing so we condemn our future children to a world of purple, sulfur eating algae as the dominant species in 3000 years. The world, earth will survive.

Our planet has been around for 4.5 billion years. Our planets life expectancy is around 12 billion years. If we do fall back to a purple algae planet and Hominids have a massive die off, the planet will survive. It took around 500 million years for the planet to go from purple algae to us today. The planet can cycle through this rebuild of life from simple purple algae to Hominids 14 times. Maybe what we should be looking at, as a back up plan, is how to tell some future Hominid that this warming you are seeing from the release of Carbon into the atmosphere, we did this 500 million years ago and killed our selves off. Maybe you can do better. I would suggest, just spit balling, that we engrave binary code on human bones and if we do enough some will fossilize. If they fossilize then some scientist in the future might just get the message and save the future from the fate we seem bound and determined to inflict on our selves.

The second part is mine not the author's. Smith is actually hopeful that we slow our use of Carbon, slow population growth, and by doing so peak oil, and lack of water impacts can be minimized on life. By doing so 2050 will be harder but livable. I'm not as confident in our ability to do what is best for the species.

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### **Tamara says**

Flimsy. Compelling neither as analysis nor as description. Argument not so much unconvincing as simply uninteresting. First part is an ok overview of climate change trends but has little engagement with the Arctic region. A good book about the contemporary Arctic remains weirdly hard to find.

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### **Titus L says**

What kind of world in 2050?

This book takes the form of a thought experiment propelled by the four global forces, of demography, natural resource demand, globalization, and climate change, plus a fifth — of enduring legal frameworks — and follows ground rules as stated in the opening chapter: That this study shall not be subject too Sudden Silver Bullets (incremental and unforeseeable advances in technology), World War III - no radical reshuffling of our geopolitics and laws (although in my own view this World War III has long been underway and is less traditional than economic -please see Naomi Klein's Shock Doctrine) +/-Or Hidden Genies, like a global depression, a killer pandemic, or sudden climate change.

How will the world change within our own life times, a scientifically deduced view of the growing population trends and accompanying demands on limited world resources, of species extinctions and other ecological changes forcing unprecedented social and cultural upheavals, of the possibilities of new powers protecting or even prospecting for resources in other territories by force of arms (such as water Wars or etc).

"Imagine a 2050 world in which global population has grown by nearly half, forming crowded urban clots around the hot lower latitudes of our planet. Mighty new poles of economic power and resource consumption have arisen in China, India and Brazil. People are urban, grayer and richer. Many places are water stressed,

uninsurable or battling the sea. Some have abandoned irrigated farming altogether; their cities rely totally on global trade flows of energy and virtual water (ie traded goods containing water such as food etc) to even exist"....

True, we have a diverse basket of new energy resources, but we still rely heavily upon fossil fuels and the development trends and lack of substantial enough alternatives suggest the dependency will continue. Natural gas is especially lucrative and under aggressive development in all corners of the world. In addition billions of southern organisms will press northward, including us. These broad pressures and trends portend great changes to the northern quarter of our planet, making it a place of higher human activity and strategic activity than today.

Nunavut. President Keskitalo's Argument;

"In Tromsø sitting with Aili Keskitalo, president of the Norwegian Sámi Parliament. She was describing the plight of her Sámi people (Lapps), the aboriginal occupants of northern Europe.

'Our language. Our symbols. Our traditional knowledge. They are threatened. In some areas, to a very large extent. We need to have a say in how the natural resources are exploited!'

Unfortunately, a naturally twitchy climate makes the steady, predictable push from anthropogenic greenhouse gases more dangerous, not less. From the geological past we know the Earth's climate has not always been so quiet as it is now. Therefore, through greenhouse loading we are applying a persistent pressure to a system prone to sudden jumps in ways we don't fully understand. Imagine a wildcat quietly sleeping on your porch—it looks peaceful but is by nature an ill-tempered, unpredictable beast that might spring into a flurry of teeth and claws in an instant. Greenhouse gases are your knuckles pressing inexorably into its soft slumbering belly; the global ecosystem is your exposed hand and arm."...

"The climate change, it makes the oil, the gas, the mineral resources in the North more accessible. So the need to get control over the resource management is even more important, because of the climate change." She sat back in exasperation. "If you have no representation, how can you have an influence on resource management?"

If there was ever a moment when my perspective suddenly broadened on the future of the northern countries I was traveling, that was probably it. We talked some more, so I could assemble in my own head what was already so obvious in hers. Everything is linked. Shrinking ice, natural resource demand, and political power were all tugging on each other. My scientist's training had wrongly led me down the path of dissect, isolate, and rank. This works well for a focused problem, but is not always best for gaining a synoptic understanding of the world."

Thus we join the dots to see the bigger picture and how everything really is linked to everything else, change is inevitable, if we understand a little of what may follow we might better cherish the present and nurture the best of possible future outcomes....

Of further concern is the fact that scientific research has recently revealed that our climatic emergence from the last ice age was neither gradual nor smooth. Instead it underwent rapid flip-flops, seesawing back and forth between glacial and interglacial (warm) temperatures several times before finally settling down into a warmer state. These large temperature swings happened in less than a decade and as quickly as three years. Precipitation doubled in as little as a single year....

The Pentagon's report, which outlines possible social scenarios if what occurred 8,200 years ago were to happen again today (quite scary) describes wars, starvation, disease, refugee flows, a human population crash, civil war in China, and the defensive fortification of the United States and Australia.

"To me, the old debates of Malthus and Marx, of Ehrlich and Simon, miss the point. The question is not how many people there are versus barrels of oil remaining, or acres of arable land, or drops of water churning

through the hydrologic cycle. The question is not how much resource consumption the global ecosystem can or cannot absorb. It's moot to wonder whether the world should optimally hold nine billion people or nine million, colonize the sea, or all move to Yakutsk. No doubt we humans will survive anything, even if polar bears and Arctic cod do not. Perhaps we could support nine hundred billion if we choose a world with no large animals, pod apartments, genetically engineered algae to eat, and desalinated toilet water to drink. Or perhaps nine hundred million if we choose a wilder planet, generously restocked with the creatures of our design. To me, the more important question is not of capacity, but of desire: What kind of world do we want?"

Absolutely stunning book which lays the whole world and all its developmental trends before the reader in a totally comprehensive manner lacking the obscurantist occlusion or mere one-upmanship of many scientific authors who dazzle with detail the less specialist reader.

If you care to understand the present and future trends of big Businesses and Governments and the hardlines underpinning their perspectives, here you will find a vast array of evidence based assessment and demographic details delivered in an entirely accessible manner.

Highly Recommended for any present & all near future residents of Earth..

"...The world is alive. The plants, animals, rocks, and water all have spirits. These spirits must be respected and cared for or the land would become hostile or barren. Therefore, protection and balance of one's environment is of utmost importance..." -

Siberian Elder Wisdom, The Sakhas or Sakha-Yakuts ( Horse People) northeast Siberia.

Informed with knowledge, may All our choices be blest \*\*~

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## David says

same UCLA professor with the endorsement from Jared Diamond...Smith only uses 4 basic directions to determine the approximate overview of 2050 of the northern hemisphere: demo, resource wars, climate, globalization..but with few disclaimers: no WWII, no Godlike technological leap, no killer super ebola and resume the models are correct...I give credits to the disclaimer if everything goes well, then the four pillars determine the 2050 NORC...to be as predicted...as Smith said: resources war are ongoing..have been going..my interpretations of this as "national interests"..even between family members..Smith over-emphasizes probably 50% on climate change as human cause..yes, it does, but it does not, because do not attempt to follow the scandal IPCC has created few years ago to ignore sun spot activities that really affect Earth temperature, trees on Earth also contribute to the release of CO2 but it does not kill the Earth..we have duties to protect the Earth, of course..but they are not correlated to the hundred thousand years, and million years, and years ago the natural fluctuation of temperature due to sun spot activity...and Smith constantly emphasized..and ride along with what Jared said about consumption Index...there is really no over population..issue..but the world would reach aging population..somehow, reading along the line, I simply could not find the theme of this book...the bring ups of Stalin and killings of war: thanks to depop scheme? Yet..the hidden message seem to point at the Russia with vast land..and the migration issues and the empties of vast Siberian front which seem romantic, but rather abandoned...but the theme again? oh..Russia controls the LNG market which seem to be better solution than carbon based..better than Canada tar sand oil development..and towards the end..using Pentagon Paper to conclude the world is in fragility? Seriously? And at times seem to be satirical towards IMF, WTO, World Bank..but supportive of their data?? Smith is very weak in terms of being a professor, nor even a professional, he can qualify as researcher, but this is a

grand observation that involves with civilization dynamic, individual behavior, group behavioral movement, anthropological development...political interests driver, etc, etc..rather than the basic 4 points (he cannot even establish as pillar) of "factors"...

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