









CHAPTER 43

CATASTROPHIC CLIMATE CHANGE AND THE BIOSPHERE


THE CATASTROPHIC EFFECTS OF “BUSINESS AS USUAL” HAVE ALREADY BECOME APPARENT.



Some effects are

-  **increasingly probable collapse of the present Biosphere,**
-  **catastrophic storms, droughts, and floods,**
-  **increased probability of pandemic diseases,**
-  **diminished productivity of renewable resources, including food,**
-  **catastrophic release of hazardous materials (e.g., Fukushima nuclear power plant destruction),**
-  **destruction of humanity’s infrastructure, such as transportation, power, and food delivery systems,**
-  **increased climate variability (e.g., temperature),**
-  **episodic storm release of hazardous materials.**

DURING AND AFTER SUPER STORM SANDY (IN THE UNITED STATES), DISCUSSIONS CENTERED ON REBUILDING CITIES AND TOWNS IN STORM DAMAGED AREAS.




- 🌐 However, insurance costs may shatter most of these dreams. For example, *“North America incurred \$510 billion in insured losses from weather catastrophes over the last three decades, and climate change is emerging as one of the reasons why, . . .”*¹
- 🌐 *“ . . . a nearly quintupled number of weather-related loss events [occurred] in North America for the past three decades, compared with an increase factor of 4 in Asia, 2.5 in Africa, 2 in Europe and 1.5 in South America, . . . ”*¹
- 🌐 *“Up to now, however, the increasing losses caused by weather related natural catastrophes have been primarily driven by socio-economic factors, such as population growth, urban sprawl, and increasing wealth.”*¹

 **“THE HEDGE EXPRESSED BY JOURNALISTS IS THAT MANY VARIABLES GO INTO CREATING A BIG STORM, SO THE SIZE OF HURRICANE SANDY, OR ANY SPECIFIC STORM, CANNOT BE ATTRIBUTED TO CLIMATE CHANGE. THAT’S TRUE AND IT’S BASED ON GOOD SCIENCE. HOWEVER, THAT STATEMENT DOES NOT MEAN THAT WE CANNOT SAY THAT CLIMATE CHANGE IS MAKING STORMS BIGGER. IT IS DOING JUST THAT — A STATEMENT ALSO BASED ON GOOD SCIENCE, AND ONE THAT THE INSURANCE INDUSTRY IS EMBRACING, . . .”²**

-  ***“Insurers, scientists and journalist[s] are beginning to drop the caveats and simply say that climate change is causing big storms.”²***
-  ***Still, the merchants of doubt state: “. . . they can’t even tell the weather three days ahead of time — how can they predict the climate? But in fact ‘they’ can tell the weather, and in the process they saved thousands upon thousands of lives.”²***






“CLIMATE DENIERS EXPLOIT SCIENTIFIC COMPLEXITY TO AVOID ANY DISCUSSION AT ALL.”³


-  ***“Clarity, however, is not beyond reach. Hurricane Sandy demands it: At least 40 U. S. deaths. Economic losses expected to climb as high as \$50 billion. Eight million homes without power. Hundreds of thousands of people evacuated. More than 15,000 flights grounded. Factories, stores, and hospitals shut. Lower Manhattan dark, silent, and underwater.”³***
-  ***“While nearly 200 nations at the 2009 United Nations Framework Convention on Climate Change agreed to limit the average global temperature increase to 3.6 degree[s] Fahrenheit (2 degrees Celsius) by 2050, too few nations have taken measurable steps to hitting that mark . . .”⁴***
-  **Humanity can, and must, do far, far better than this attempt!**

✚ CATASTROPHIC CONDITIONS ALREADY EXIST. “WITH FALLING WATER TABLES, ERODING SOILS, AND RISING TEMPERATURES MAKING IT DIFFICULT TO FEED GROWING POPULATIONS, CONTROL OF ARABLE LAND AND WATER RESOURCES IS MOVING TO CENTER STAGE IN THE GLOBAL STRUGGLE FOR FOOD SECURITY. WHAT WILL THE GEOPOLITICS OF FOOD LOOK LIKE IN A NEW ERA DOMINATED BY FOOD SCARCITY AND FOOD NATIONALISM?”⁵


- 🌍 Instead of action on the basic problem, climate change, the “solution” has become fighting over dwindling resources, which, at best, is a temporary, inadequate solution.
- 🌍 A more effective, long-term solution is immediate rapid transition from fossil fuels to non-carbon energy sources (e.g., solar, wind, geothermal).
- 🌍 Increasing energy use efficiency (e.g., insulate building more effectively) is a necessary additional action.





 **OTHER REASONS EXIST FOR IMMEDIATE, PROTECTIVE ACTION. FOR EXAMPLE, “NO SERIOUS CLIMATE SCIENTIST BELIEVES THAT THE SEA WILL RISE LESS THAN A METER THIS CENTURY, UNLESS WE GET OFF FOSSIL FUEL WITH GREAT SPEED; MANY ANTICIPATE IT WILL RISE FAR MORE. THINK ABOUT WHAT THAT MEANS — . . . ANY AVERAGE STORM WILL BECOME AN INSIDIOUS THREAT.”⁶**


-  In the United States, updating floodplain mapping “. . . *will likely incorporate area[s] now considered at risk because of climate change effects like rising sea levels. That will raise federal flood insurance premiums to reflect risk realities, in turn stunting migration to vulnerable regions.*”⁷
-  How sad that human misery and suffering are required to give credence to warnings that scientists have been stating for at least three decades.

 **PERPETUAL GROWTH, INCLUDING ECONOMIC AND POPULATION, ON A FINITE PLANET IS DAMAGING THE PRESENT BIOSPHERE AND, IF CONTINUED, WILL RESULT IN COLLAPSE OF THE PRESENT BIOSPHERE.**

- 🌍 Continuation of “business as usual” is the disease — living sustainably by eliminating the nine interactive threats to the present Biosphere^{8,9} is the cure.
- 🌍 “. . . *the urgent crisis of climate change was never meaningfully discussed in the debates or on the campaign [United States in 2012] trail.*”¹⁰
- 🌍 However, super storm Sandy affected both the end of the political campaign and the voting process that followed it in many states disrupted by Sandy. ¹¹

 **HUMANITY WILL ALMOST CERTAINLY NOT
HAVE THE KIND OF WORLD IT WANTS
UNLESS IMMEDIATE, EFFECTIVE ACTION IS
TAKEN TO NURTURE THE PRESENT
BIOSPHERE.**

-  ***“What kind of world is likely if we take no deliberate action? What kind of world do we want? What kind of world is possible if we act effectively?”¹²***
-  **Surely humankind wishes to leave a habitable planet for posterity.**
-  **Surely humankind wants to limit population size with something other than misery, starvation, and death.**
-  ***Homo sapiens* evolved and flourished in the present Biosphere and probably could not have survived in the five previous biospheres. Surely the present Biosphere is worth preserving.**

 **“... GOVERNMENTS HAVE NOT RESPONDED TO THE CHANGE WITH ANY GREATER URGENCY ABOUT LIMITING GREENHOUSE GAS EMISSIONS. TO THE CONTRARY, THEIR MAIN RESPONSE HAS BEEN TO PLAN FOR EXPLOITATION OF NEWLY ACCESSIBLE MINERALS IN THE ARCTIC, INCLUDING DRILLING FOR MORE OIL. THAT IS, TO ACCELERATE THE CATASTROPHE. IT IS QUITE INTERESTING. IT DEMONSTRATES AN EXTRAORDINARY WILLINGNESS TO SACRIFICE THE LIVES OF OUR CHILDREN AND GRANDCHILDREN FOR SHORT-TERM GAIN, OR PERHAPS AN EQUALLY REMARKABLE WILLINGNESS TO SHUT OUR EYES SO AS NOT TO SEE IMPENDING PERIL. THESE THINGS YOU SOMETIMES FIND WITH YOUNG INFANTS: SOMETHING LOOKS DANGEROUS, CLOSE MY EYES AND WON'T LOOK AT IT.”¹³**



Surely humanity deserves better leadership than this!

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References

- ¹ Geman, B. 2012. Insurance giant cites climate in rising North American disaster costs. The Hill, E2-Wire 17Oct <http://thehill.com/blogs/e2-wire/e2-wire/262627-insurance-giant-cites-climate-in-rising-north-american-disaster-costs>.
- ² Fischetti, M. 2012. Did climate change cause Hurricane Sandy? *Scientific American* 30Oct <http://blogs.scientificamerican.com/observations/2012/10/30/did-climate-change-cause-hurricane-sandy/>.
- ³ Barrett, P. M. 2012 It's global warming, stupid. BloombergBusinessweek 1Nov <http://www.businessweek.com/articles/2012-11-01/its-global-warming-stupid>.
- ⁴ Colman, Z. 2012. Report: fossil fuels could raise global temperatures 10 degrees by century's end. The Hill, E2-Wire 5Nov <http://thehill.com/blogs/e2-wire/e2-wire/265939-report-fossil-fuels-driving-108-f-temperature-increase-by-end-of-century>.
- ⁵ Earth Policy Institute. 2012. Full planet, empty plates: quick facts. 7Nov http://www.earth-policy.org/press_room/C68/fpep_quickfacts.
- ⁶ McKibben, B. 2012. A grim warning from science. The New York Review of Books 1Nov <http://www.nybooks.com/blogs/nyrblog/2012/nov/01/hurricane-sandy-warning-science/>.
- ⁷ Colman, Z. 2012. After Sandy, flood insurance reformers spring into action. The Hill, E2-Wire 3Nov <http://thehill.com/blogs/e2-wire/e2-wire/265179-groups-say-sandy-could-spark-more-flood-insurance-reform>.
- ⁸ Cairns, J., Jr. 2010. Threats to the biosphere: eight interactive global crises. *Journal of Cosmology* 8:1906-1915.
- ⁹ Cairns, J., Jr. 2012. The ninth threat to the biosphere: human thought processes. Supercourse Legacy Lecture: National Academy of Sciences Members' Lectures. <http://www.pitt.edu/~super1/lecture/lec46811/index.htm>.
- ¹⁰ Knobloch, K. 2012. Obama victory: where do we go from here on science-based climate action? 7Nov http://www.arizonaenergy.org/News_12/News_Nov12/ObamaVictoryWheredowegofromhereonscience-basedclimateaction.html.
- ¹¹ Revkin, A. C. 2012. On Sandy and humanity's "blah, blah, blah, bang" disaster plans. New York Times 31Oct <http://dotearth.blogs.nytimes.com/2012/10/31/on-sandy-and-humanitys-blah-blah-blah-bang-disaster-plans/>.
- ¹² Revkin, A. C. 2012. A pitch for sustaining the capacity to observe humanity's planet. New York Times 1June <http://dotearth.blogs.nytimes.com/2012/06/01/a-pitch-for-sustaining-the-capacity-to-observe-humanitys-planet/>.
- ¹³ Chomsky, N. 2012. America acts like it owns the world. Talk, University of Massachusetts, Amherst. 28Oct America acts like it owns the world.