

# **CHAPTER 25**

# **LIVING WITHIN BIOSPHERIC LIMITS**



***“OH, BEAUTIFUL FOR SMOGGY SKIES,  
INSECTICIDED GRAIN,  
FOR STRIP-MINED MOUNTAIN’S MAJESTY  
ABOVE THE ASPHALT PLAIN.  
AMERICA, AMERICA, MAN SHEDS HIS WASTE  
ON THEE, AND HIDES THE PINES WITH  
BILLBOARD SIGNS, FROM SEA TO OILY SEA.***

***George Carlin***


- 🌍 **The urge to alter natural systems and replace them with human artifacts (e.g., malls, parking lots, roads) has greatly damaged the biospheric life support system.**
- 🌍 **The Biosphere is also the repository for all types of human wastes (e.g., municipal, industrial), which are a major threat to human health and the environment.**
- 🌍 **Taking more from the Biosphere (e.g., oceanic fisheries) than the regenerative capacity can replace is clearly unsustainable, but such actions are the norm.**



# ***“THERE ARE NO PASSENGERS ON SPACESHIP EARTH. WE ARE ALL CREW.”***

**(Marshall McLuhan 1964)**

- 🌐 **The present battles in the public arena and news media, often acrimonious, are indicative that some crew members are trying to save Spaceship Earth, others are destroying the life support system in zealous support of economic growth, and still others are so totally preoccupied with their own personal problems that they lack environmental literacy.**
- 🌐 **Some corporations are using a significant portion of immense profits to cast doubt on robust scientific evidence.**
- 🌐 **Some anti-environmental activists in the United States are branding “*government action for things like expanding public transportation routes and preserving open space as a United Nations-led conspiracy to deny property rights and herd citizens toward cities.*”<sup>1</sup>**
- 🌐 **The activists “*are showing up at planning meetings to denounce bike lanes on public streets and smart meters on home appliances they equate with a big-government blueprint against individual rights.*”<sup>1</sup>**

 **“I AM A FIRM BELIEVER IN THE PEOPLE. IF GIVEN THE TRUTH, THEY CAN BE DEPENDED UPON TO MEET ANY NATIONAL CRISIS. THE GREAT POINT IS TO BRING THEM THE REAL FACTS.”**

*(Abraham Lincoln)*

- 🌐 How does one get the facts to the people when the aggressive, well financed merchants of doubt<sup>2</sup> are actively spreading disinformation?
- 🌐 The Internet is a good source of information, but people tend to visit sites that confirm previously held beliefs (Jonathan Haidt, interview by Bill Moyers on Public Television February 6, 2010).
- 🌐 Scientific evidence will be essential in a rapidly changing world, but “*a new report by the Thomas B. Fordham Institute gives a majority of states in the U.S. a D or F when it comes to state science standards.*”<sup>3</sup>



***“I OBJECT TO VIOLENCE, BECAUSE WHEN IT APPEARS TO DO GOOD, THE GOOD IS ONLY TEMPORARY, THE EVIL IT DOES IS PERMANENT.”***

***(Mohandas Gandhi)***

- 🌍 **When resources become scarce, a likely result is resource wars that, even if “successful,” deplete resources, damage infrastructure, create refugees, and only temporarily solve resource scarcity for a limited number of people while simultaneously depriving many others of resources.**
- 🌍 **Ecological overshoot (humans are consuming renewable resources more rapidly than they are being regenerated) is an unsustainable but common global solution to resource scarcity.**
- 🌍 **Ecological overshoot increases the probability of resource wars, which diminish resource regeneration.**
- 🌍 **Living within resource limits (i.e., not exceeding carrying capacity) reduces both the probability of resource wars and damage to the Biosphere.**



# ***“ACTION EXPRESSES PRIORITIES.”***

***(Mohandas Gandhi)***

- 🌍 **Humanity has spent decades talking about sustainability while actually living more unsustainably each year.**
- 🌍 **Economic growth remains a high political priority despite damaging the Biosphere to continue growth.**
- 🌍 **Anthropogenic greenhouse gas**
- 🌍 **emissions continue to rise and change Earth’s climate, and one gas, carbon dioxide, is acidifying the oceans.**
- 🌍 **Biodiversity continues to decline.<sup>4</sup>**
- 🌍 **Exponential human population growth continues on a finite planet.**



***“OFTEN IT TAKES SOME CALAMITY TO MAKE US LIVE IN THE PRESENT. THEN SUDDENLY WE WAKE UP AND SEE ALL THE MISTAKES WE HAVE MADE.”***

*(Bill Watterson)*

***“DELAY IS THE DEADLIEST FORM OF DENIAL.”***

*(C. Northcote Parkinson)*

- 🌐 In an era of decreasing resources/capita, “wants” must decrease proportionately, but expectations, at least in the United States remain high.
- 🌐 Civility has been an early casualty of the inevitable problems of ecological overshoot. Desiderus Erasmus, a 16<sup>th</sup> century scholar, noted that civility is a vital part of the social contract that enables humans to live together as a society.



**“FOR 200 YEARS WE’VE BEEN CONQUERING NATURE. NOW WE’RE BEATING IT TO DEATH.”<sup>5</sup>**

- 🌍 Exponential human population growth, 1 billion in the last 12 years, requires exponential economic growth just to maintain the status quo in material goods per capita.
- 🌍 Exponential growth based on resource consumption is harmful to the biospheric life support system.
- 🌍 If the Biosphere collapses due to increased depletion of natural capital that civilization is based on, “business as usual” is doomed.
- 🌍 So why is *Homo sapiens* beating nature (structured by the universal laws of biology, chemistry, and physics) to death?
- 🌍 Humanity can prepare to cope with the increasing frequency of extreme events<sup>6</sup> or, better yet, take steps to prevent or reduce the number of extreme events.



 **“WE ARE FACING AN IMMINENT CATASTROPHIC COLLAPSE ‘AND’ OUR ONLY HOPE IS TO TRANSFORM HUMANITY INTO A GLOBAL INTERDEPENDENT SUSTAINABLE SOCIETY, BASED ON RESPECT AND REVERENCE FOR THE EARTH.”** *(The Club of Rome <http://clubofrome.org>)*

- 🌍 Even though this statement was published in 1974, no one was listening. Consequently, in 2012, making people concerned about the future of their children, grandchildren, and their descendents is essential.
- 🌍 Asserting that scientists are perpetuating a hoax about global warning has not worked because the universal laws of nature are implacable and not altered by rhetoric.
- 🌍 Face it – *Homo sapiens*, like 30+ million other species, is governed by these universal laws.
- 🌍 Live accordingly.

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## References

- <sup>1</sup> Kaufman, L. and K. Zernike. 2012. Activists fight green projects, seeing U.N. plot. New York Times 3Feb  
<http://www.nytimes.com/2012/02/04/us/activists-fight-green-projects-seeing-un-plot.html?pagewanted=all>.
- <sup>2</sup> Oreskes, N. and E. M. Conway. 2010. *Merchants of Doubt: How a Handful of Scientists Obscured the Truth and Issues from Tobacco Smoke to Global Warming*. Bloomsbury Press, New York, NY.
- <sup>3</sup> Shin, L. 2012. Majority of states receive D or F in science education. Smart Planet 5Feb  
<http://www.smartplanet.com/blog/science-scope/majority-of-states-receive-d-or-f-in-science-education/12142>.
- <sup>4</sup> Hutchings, J. A., I. M. Cote, J. J. Dodson, I. A. A. Fleming, S. Jennings, N. J. Mantua, R. M. Peterman, B. E. Riddell, A. J. Weaver and D. L. VanderZwaag. 2012. Sustaining Canadian marine biodiversity: responding to the challenges posed by climate change, fisheries, and aquaculture. Expert Panel Report, Royal Society of Canada, Ottawa.  
[http://www.rsc.ca/documents/RSCMarineBiodiversity2012\\_ENFINAL.pdf](http://www.rsc.ca/documents/RSCMarineBiodiversity2012_ENFINAL.pdf).
- <sup>5</sup> McMillan, T. 1990. As quoted in F. Lyman, *The Greenhouse Trap*. Beacon Press, Boston, MA.
- <sup>6</sup> National Academies. 2011. U.S. Science Academy and global reinsurance broker spark collaborations to improve management of extreme events. News from the National Academies 18Oct  
<http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=10182011>.