CHAPTER 15

EARTH'S BIOSPHERE: THE GLOBAL COMMONS*

***The concept of "commons" originally defined an area for common use in a village, which each villager could see on a daily basis and observe how each villager treated it. The global commons could never be continually observed by individuals and is vulnerable to misuse.**

THE COST OF EXPLOITING THE EARTH'S BIOSPHERE (THE GLOBAL COMMONS) IS PAID BY SOCIETY AS A WHOLE.*

- Garrett Hardin believed that "individuals will exploit anything that is free in order to maximize their own advantage."[1]

- ". . . coupling the concept of freedom to breed with the belief that everyone has an equal right to the commons "locks" the world into a tragic course of action."[2]

- Hardin also believed that the human population explosion would damage the environment, deplete natural resources, and markedly degrade the quality of life.[3]

- In the 21st century, eight global interactive crises — human economy, climate change, exponential human population growth, ecological overshoot, biotic impoverishment and the reduction of biodiversity, renewable resource depletion, energy allocation,2 and environmental refugees — are creating an alien planet. Any of these crises could cause biospheric collapse.[4]

*The "tragedy of the commons" is defined as an archetypical social phenomenon where an attempt to exploit others (or "the system") in one way or the other eventually turns out to be self defeating (http://www.businessdictionary.com/definition/tragedy).

BIOSPHERIC (THE GLOBAL COMMONS) COLLAPSE MUST BE PREVENTED NOW BECAUSE, IF IT OCCURS, HUMANKIND WILL SUFFER GREVIOUSLY.

- **“Garrett Hardin has made three critical assumptions: (1) that there exists, or can be developed, a ‘criterion of judgment and a system of weighting’ . . . that will ‘render the incommensurables . . . commensurable . . .’ in real life; (2) that, possessing this criterion of judgment, ‘coercion can be mutually agreed upon,’ and that the application of coercion to effect a solution to problems will be effective in modern society; and (3) that the administrative system , supported by the criterion of judgment and access to coercion, can and will protect the commons from further desecration.”[5]**

- **The main barrier to preventing biospheric collapse is the inability to incorporate scientific evidence into political policy.**

- **The default position (depending on the universal laws of nature) will produce horrific consequences.**

THE BEST WAY TO PROTECT THE GLOBAL COMMONS IS TO DEVELOP A QUALITY CONTROL SYSTEM THAT DOES NOT PERMIT DAMAGE TO THE BIOSPHERE BY ANY NATION OR INDIVIDUAL FOR ANY REASON.

- **Sovereign nations have, thus far, been unable or unwilling to develop such systems.**

- **For example, the proposed Keystone XL, a 1700-mile pipeline, would stretch from Canada's Alberta tar sands to the Texas Gulf Coast. Extracting, transporting, and burning this fossil fuel would damage the global commons, and full development will accelerate this damage.[6]**

- **In the case of damage to the global commons, future generations will probably suffer most and, at present, the poor will suffer most.**

"INEQUALITY IS NOT ONLY NATURAL AND INBORN, IT GROWS WITH THE COMPLEXITY OF THE CIVILIZATION. . . . THE CONCENTRATION OF WEALTH IS NATURAL AND INEVITABLE, AND IS PERIODICALLY ALLEVIATED BY VIOLENT OR PEACEABLE PARTIAL REDISTRIBUTION."[7]

- **Wealth is being interpreted here as both money and resources (e.g., food, timber) since money can be used to purchase resources.**

- **The present distribution of wealth is the most unequal in human history so the only uncertainty is whether the partial redistribution will be violent or peaceable.**

- **In the last part of the 20th century and the beginning of the 21st century, sovereign* nations have not demonstrated an ability to manage global problems (e.g., overpopulation, climate change).**

Sovereignty **is defined as "The supreme, absolute, and uncontrollable power by which an independent state [nation] is governed and from which all political powers are derived, the intentional independence of a state, combined with the right and power of regulating its internal affairs without foreign interference (http://legal-dictionary.thefreedictionary.com/Sovereign).**

THREE SCENARIOS ON HUMANITY'S PROTECTION AND NURTURING OF THE GLOBAL COMMONS

- **The Overly Optimistic Scenario**

Scientific evidence has a major influence on policy decisions and leaving a habitable planet for posterity is a major societal goal. This scenario is the most likely to have a high variability in response. Nations with a high regard for scientific evidence and responsibility for posterity do everything possible to protect and nurture the global commons. Nations with a contempt for scientific evidence and a history of passing problems on to future generations do the least.

- **The Last Minute Panic Scenario**

A series of catastrophes show both policy makers and the general public that something is seriously wrong and that immediate action is needed. Geoengineering to alter the planetary heat balance is the most probable choice in this scenario at the global level. This solution will almost certainly have unexpected side effects.

- **The Default Scenario**

The decision to do nothing is still a decision, and the highly probable result is collapse of the present Biosphere and, thus, a new, quite different Biosphere and a new global commons will develop over evolutionary time. If the past five biospheric collapses are a useful guide, the new Biosphere will consist of species suited to the new conditions, which may or may not include *Homo sapiens*. their selection will be determined by the universal laws of biology, chemistry, and physics.

- **Preserving Some Attributes of the Present Biosphere/Global Commons**

Most complex systems have multiple tipping points that produce irreversible changes. Reducing anthropogenic greenhouse gas emissions and taking other measures to protect the global commons (e.g., preserving remaining old growth forests, topsoil, brood stock of oceanic fisheries, etc.) might protect enough ecosystem services and renewable resource production to enable many species, including *Homo sapiens,* to survive.

“A CENTRAL TENENT OF DEMOGRAPHY IS THAT GLOBAL POPULATION WILL PEAK AT 9 TO 10 BILLION THIS CENTURY AND THEN GRADUALLY DECLINE AS POORER COUNTRIES DEVELOP. BUT THAT ASSUMPTION MAY BE OVERLY OPTIMISTIC — AND IF IT IS, POPULATION WILL CONTINUE TO RISE, PLACING ENORMOUS STRAINS ON THE ENVIRONMENT” [THE GLOBAL COMMONS].[8]

- **One consequence of continued exponential population growth is further damage to the global commons, which has already been severely damaged.**

- **“Forgetting” is most often a positive act. Likewise, failure to *see* an obvious fact is often an act of willful blindness to something subconsciously feared as unpleasant.[9]**

CLIMATE CHANGE IS ALTERING THE GLOBAL COMMONS.

- **Climate change deniers are more vocal but are still without robust, peer-reviewed scientific evidence to support their assertions.**
- **Earth is changing — the mean global surface temperatures are steadily increasing, the trend is increased ferocity and frequency of storms, rainfall patterns are shifting, glaciers are melting, wildfires are more frequent and intense, and tropical diseases are expanding their range.**
- **Almost entirely ignored at present is the UK's Richard Branson's "Carbon War Room" in Washington, DC, which advocates that businesses make investments that cut their carbon footprint.[10]**
- **". . . overwhelming scientific evidence indicates the world is heating up, and the downside effects of that could be severe."[10]**

"THE DESIRE TO DISBELIEVE DEEPENS AS THE SCALE OF THE THREAT GROWS."[11]

- **Disbelief in global warming is blocking protection of the large portion of the biosphere located in the United States, which is the "last redoubt of climate naysayers."[12]**
- **Irreversible changes have already occurred and more are in store if business as usual continues.**
- **No one knows how many tipping points can be passed before biospheric collapse occurs.**
- **Since tipping points can only be identified in retrospect, precautionary measures to protect and nurture the Biosphere are prudent.**
- **The Biosphere will be in peril as long as it is treated as a global commons to which access is not limited.**

"THERE IS NOW LITTLE TO NO CHANCE OF MAINTAINING THE GLOBAL MEAN SURFACE TEMPERATURE AT OR BELOW 2°C [INCREASE], . . ."[13]

- **". . . the impacts associated with 2°C [increase] have been revised upwards sufficiently so that 2°C now more appropriately represents the threshold between 'dangerous and extremely dangerous' climate change."[13]**
- **The only way to hold risks at the dangerous level is to regulate anthropogenic greenhouse gas emissions.**
- **None of the conferences on global climate change have had even modest success in setting limits for greenhouse gas emissions.**
- **The goal should be reducing atmospheric carbon dioxide equivalents to 350 ppm or below.**
- **The default position is to let the universal laws of biology, chemistry, and physics solve the problem, which will almost certainly result in a less habitable planet for *Homo sapiens*.**

RAPID SOCIAL EVOLUTION IS THE BEST OPTION FOR SAVING THE PRESENT GLOBAL COMMONS (THE BIOSPHERE) SINCE BIOLOGICAL EVOLUTION IS TOO COMPLICATED AND SLOW.

- **"Evolutionary adaptation can be rapid and potentially help species counter stressful conditions or realize ecological opportunities arising from climate change. The challenges are to understand when evolution will occur and to identify potential evolutionary winners as well as losers, such as species lacking adaptive capacity living near physiological limits. Evolutionary processes also need to be incorporated into management programmes designed to minimize biodiversity loss under rapid climate change. These challenges can be met through realistic models of evolutionary change linked to experimental data across a range of taxa."[14]**

Acknowledgments. I am indebted to Darla Donald for transcribing the handwritten draft and for editorial assistance in preparation for publication and to Paula Kullberg, Shireen Parsons, and Paul Ehrlich for calling useful references to my attention.

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