

## Living with Respect for the Biosphere<sup>1</sup>

*When we show our respect for other living things, they respond with respect for us.* Arapaho

*We will be known forever by the tracks we leave.* Dakota

*When a man moves away from nature his heart become hard.* Lakota<sup>2</sup>

The North American Indian tribes shared a deep respect for natural systems. Although some less nomadic tribes eventually developed agriculture, much of their food was acquired by hunting and gathering. Even the tribes that were not nomadic obtained much of their food from ecosystems, as the shell mounds of coastal tribes show. The Plains Indians even used buffalo hides for both shelter and clothing. All Indian tribes had a close association with natural systems and realized their dependence upon them. Compared to present day, their populations were small and widely dispersed. In addition, they lacked the present day technology for doing extensive damage to the Biosphere upon which their continued existence depended. Most important, they did not use fossil fuels as do present day humans. Their primary fuels were wood and buffalo “chips.” They could alter natural systems, but they could not change the climate. Their respect for natural systems was inevitable.

In contrast, the majority of humans now living in North America exist in cities, towns, or suburbs around large cities. Most humans neither gather nor produce the food they eat, and their contact with natural systems is primarily recreational. Humankind has lost touch with the natural world, and the risks of doing so are enormous.

For decades, a massive body of scientific evidence has indicated that much damage has already been done to the Biosphere and that many of the changes are irreversible (Solomon et al. 2009). Moreover, the preponderance of scientific evidence indicates that human activities are making Earth less habitable for both humans and other species. Prestigious organizations such as the US National Academy of Sciences and the UK’s Royal Society have confirmed the validity of the scientific evidence and that human activities (e.g., anthropogenic greenhouse gas emissions) are a major factor. “No generation has faced a challenge with the complexity, scale, and urgency of the one we face” (Brown 2011, pp. xi).

The basic problem leading to this damage is that humankind does not acknowledge its dependence upon the Biosphere and is in denial about the magnitude, consequences, and the urgency of the problem and, in many cases, even that a problem exists. Consideration of certain issues could initiate both discussion and action on how to avoid tipping points for the Biosphere (all life forms and their habitats).

(1) Everyone needs to become environmentally literate. Define the following: (a) tipping point, (b) carrying capacity, (c) ecological overshoot, (d) biotic impoverishment, (e) ecological footprint, (f) carbon footprint, (g) greenhouse gases – name three or more, (h) positive feedback loop, (i) ecological disequilibrium, (j) biosphere, (k) endocrine disrupter, (l) invasive species, (m) methyl mercury, (n) synergistic interaction between toxicants, (o) bioaccumulation, (p) toxic threshold, (q) assimilative capacity, (r) biochemical oxygen demand, (s) ecological deficit, (t) albedo effect, (u) exponential growth, (v) linear growth, (w) sustainable use of the planet, (x) renewable resources.

Been there? Done that? Splendid! The environmentally literate have the civic responsibility to raise the environmental literacy of others! Of course, the above definitions are only the ABCs of environmental literacy. In comparison, the North American Indians were much more literate about their environment than the present generation. If these hunter-gatherers were not environmentally literate, they did not survive. They had to provide food but avoid toxic or unhealthy food, get clothing and shelter, know the habits of animals that were a major part of their economy, avoid dangerous situations, and pass knowledge and wisdom on to their children. Above all, they had a sense of community with other life forms and respect for them.

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<sup>2</sup>I am indebted to Stefan Cairns for calling this quote to my attention.

- (2) Is the current generation of humans leaving Earth in a comparable or better shape than when it was born?
- (3) Will the present Biosphere survive if humankind keeps damaging the habitat (e.g., the Gulf of Mexico) or other life forms and diminishes the resources available to them?
- (4) Can humankind switch to non-carbon sources of energy in time to preserve the biospheric life support system and the conditions that make possible both the human economy and human survival?
- (5) When help is given to failed states (e.g., Haiti), should the donors insist that restrictions be made that will remove the nations from failed state status (e.g., population stabilization)?
- (6) Between early 2007 and 2008, world wheat, rice, corn, and soybean prices climbed to roughly triple their historic levels (Brown 2011, p. 59). What actions should be taken to address this problem? Is there a compassionate solution to this problem?
- (7) Is the United States becoming delusional about global warming in the same way that Japan was about victory at the end of World War II (e.g., Thomas 2006, pp. 336-338)? For example, on August 13, 1945, Just before Japan surrendered, Admiral Onishi cried: "If we are prepared to sacrifice 20,000,000 Japanese lives in a special attack, victory will be ours" (Thomas, p. 338). In the same vein, if the United States (and other nations that produce anthropogenic greenhouse gas emissions) continues business as usual, then hoping for no catastrophes is being delusional.
- (8) Are a significant amount of US citizens and politicians being delusional by calling scientists and their science a hoax, a deception, or a conspiracy when they have no verified different scientific evidence of their own? At least the deniers are a cut above ancient rulers who beheaded messengers who brought bad news. Scientists investigate the universal laws of physics, chemistry, and biology. The scientific evidence is neither good nor bad – these terms are "in the eyes of the beholder." Anyone who believes humans can ignore universal laws and achieve sustainable economic growth is delusional.

Humans will unlikely develop a respect and reverence for natural systems while intently focused on the present version of economic growth. Such a reverence is also unlikely to develop if damage to the present biospheric life support system continues much longer.

The tribal cultures of the planet are mostly gone, except in a few places that most humans could not survive (e.g., the Kalahari Desert). Humankind must acquire its knowledge of natural systems primarily from the people who study how the systems work – the world's scientists. However, society must not encourage "witch hunts" when scientists gather evidence that is displeasing or offensive to people with little or no scientific literacy. The news media must restrain itself when reporting attacks on scientists and their evidence just because it makes a "good story." Depicting science as a "hoax," especially in the case of no counter scientific evidence, is dangerous at best and fatal at worst. The world's temperatures vary significantly from one region of Earth to another, and seasonally as well. "Yes, global average warming is 'only' about a degree, but that is actually a lot. During the last major ice age, when New York, Minneapolis, and Seattle were under an ice sheet a mile thick, global average temperature was about 5 degrees colder than it is now. The last time Earth was 2 degrees warmer so much ice melted that the sea level was about twenty-five meters (eighty feet) higher than it is today" (Hansen 2010). Moral of the story – an unseasonable snowfall in Washington, DC, does not mean global warming is a hoax! People who are scientifically literate can identify the purveyors of doubt personally, even if the news media fails to do so – this course of action is 21<sup>st</sup> century individualism!

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