

NATURAL LAW/HUMAN LAW

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Indeed I tremble for my country when I reflect that God is just.

Thomas Jefferson

Those fields which most depend upon authoritative opinion for their data least contain known natural law.

L. Ron Hubbard

The bird has an honor that man does not have. Man lives in the traps of his abdicated laws and traditions, but the birds live according to the natural law of God who causes the earth to turn around the sun.

Kahlil Gibran

This commentary is the result of reading Cormac Cullinan's (2008) article in *Orion*, in which Cullinan relates the story of a Kenyan farmer who killed a hyena when the hyena tried to attack his goats. The village elders decided the farmer was wrong to have killed a hyena with suckling young, and the farmer's clan was ordered to release more than 100 goats in the wild as an act of restorative justice. However, converse to this form of justice, the article notes, "In the eyes of American law today, most of the community of life on Earth remains mere property, natural 'resources' to be exploited, bought and sold just as slaves were." This human attitude seems to be a universal one; otherwise, economic globalization would not have had the deleterious environmental effects it has had.

In human law, precedence is extremely important. If the idea of precedence were applied to natural law as it is to human law, then natural law, which has existed for at least 4.5 billion years, would carry more weight than human law in its present form, which has only been a major influence since the Agricultural Revolution (which occurred about 10,000 years ago). (*Natural law* – a body of laws that derives from nature and is believed to be binding upon human actions apart from or in conjunction with laws established by human activity) Natural law is revealed primarily by scientific investigations, and, thus, awareness and understanding of it is continually improved. For example, the basics of the greenhouse gas effect have been known since 1896, and the effect made life on Earth possible for billions of years. However, only since the widespread use of fossil fuels have greenhouse gas emissions caused by humans been a major factor in climate change.

Severe penalties result from violating natural law, although they are not always apparent in time spans of interest to individual humans (e.g., US elections). The southeastern Australian "long dry" (drought) is probably now permanent (Macey 2008), but David Jones, Australian Bureau of Meteorology's Head of Climate Analysis, is quoted (Macey 2008) as stating that perhaps the drought should be called Australia's "new climate."

Stephen L. Johnson, the US Environmental Protection Agency's (USEPA) administrator, denied, on 19 December 2007, California and 16 other states a waiver that would have allowed the states to set their own emission standards for carbon dioxide, which are not currently regulated (Environmental News Network [ENN] 2008). This denial occurred even though a Stanford University (California) scientist, Mark Jacobson, has found direct links between increased levels of carbon dioxide in the atmosphere and increases in human mortality (ENN 2008). Even before Jacobson's paper (to be published in *Geophysical Research Letters*) became known, one would have thought that the published reports of the Intergovernmental Panel on Climate Change (IPCC) on the effects of greenhouse gas emissions on global climate change and, therefore, on Earth's biota would have been adequate to support California's request. Administrator Johnson stated that "extraordinary and compelling conditions" are required for a waiver. Gelbspan (2007), in discussing global heating, notes: "We have failed to meet nature's deadline. In the next few years, this world will experience progressively more common and destabilizing changes." Climate scientist James Hansen, whose climate predictions have been

accurate for at least three decades, states that the world is in imminent peril from climate change. I found the scientifically conservative IPCC reports scary and disturbing. Apparently, Administrator Johnson did not, so it would be helpful if he would explicitly state how he defines “extraordinary and compelling” conditions. A *New York Times* editorial (Editorial 2007) comments that Johnson’s decision “. . . overrode the advice of his legal and technical staffs, misconstrued the law and defied both Congress and the federal courts.” Roosevelt (2008) quotes an email from USEPA Assistant Press Secretary Jonathan Schrader: “Under the recently signed energy bill we now have a more beneficial national approach to a national problem which establishes an aggressive standard for all 50 states, as opposed to a lower standard in California and a patchwork of other states.” Apparently, Schrader has not read the California proposal because it is not a lower standard but rather a more stringent standard than the federal standard in terms of greenhouse gas emissions. Schrader’s use of the word *patchwork* is misleading because it implies a multiplicity of standards. In reality, the other 15 states merely wish to adopt California’s standards and have joined California in a lawsuit.

The Toxic Substances Control Act requires evidence of harm or no-observable harm to human health and the environment in identifying toxic substances. All chemical substances can cause harm (e.g., table salt and vitamin A) if taken in large quantities. Moreover, lack of evidence does not constitute proof of safety. The evidence for the greenhouse effect is robust, which is why Administrator Johnson’s staff urged him to grant the waiver to California. Brown (2008) reports that Administrator Johnson declined US Senate Environment and Public Works Chairwoman Barbara Boxer’s invitation to defend his decision to deny California permission to begin regulating greenhouse gas emissions from automobiles at a “field briefing” in San Francisco, California. One of Johnson’s associates told Senator Boxer that USEPA will not be providing documents she requested in time for the session. In this electronic age, this denial to Boxer’s request is astonishing, unless, of course, the documents needed for a scientifically sound decision do not exist.

Other evidence of the effects of greenhouse gas emissions on climate change also exist. Glaciers are melting (Tuckwiller 2008), which may mean downstream floods initially and decreased flows later. An “unforeseen and unprecedented” shift is occurring in the world food supply, which is dwindling rapidly, according to the top food and agricultural official of the United States (Rosenthal 2007). Of course, adding 1.5 million people to the global population weekly is part of the problem as is converting food (e.g., corn) to fuel (e.g., ethanol). Still, both ecological and societal systems are complex and multivariate, and one should be suspicious of simple solutions.

Cultural Differences in Law

The introductory tale of the Kenyan farmer in *Orion* illustrated restorative justice in that the clan accepted responsibility for the damage to nature (i.e., nursing hyena). A somewhat different situation occurred in Bermuda many years ago when I was carrying out research there. A single snowy owl had probably been blown there, and, since it represented the only individual of its own species on the island chain, could not reproduce. However, evidence was persuasive that it was killing one of the rare Bermuda petrels daily. Since the approximate population size was known, the time to extinction for that species could be estimated. Should the snowy owl be shot to preserve one of Bermuda’s charismatic species that was depicted on sweatshirts and other memorabilia? To an outsider, the decision was not difficult. The snowy owl could not reproduce and was in an alien habitat with few suitable prey species. The nocturnal Bermuda petrel, once thought extinct, was endangered because natural habitat was scarce and artificial nesting sites were needed to enhance species survival. Although much discussion, sometimes heated, surrounded the unexpected issue, the decision was quickly made before the petrel population had suffered fatal damage. Obviously, the Bermudans were not prepared for this stochastic event, so no appropriate law was available. The decision depended upon scientific literacy, not existing human law.

Another two incidents demonstrate an important cultural difference between the United States and Australia. In the United States, an alligator had moved into a constructed pond on a golf course. When a golfer reached into the pond to retrieve a golf ball, the alligator bit him. The alligator was shot dead. In Australia, an incautious British photographer, who was taking wildlife pictures, was killed by a crocodile. The Australians felt that the photographer should have known more about the ecosystem he was photographing. The crocodile was not shot. The two situations are quite different in a number of ways. The alligator had lost much habitat and was moving into one that appeared similar. Still, under law, the pond on the golf course was human property. In order to be effective, human laws would have to be as consistent as the laws of nature – and, they are not.

In 2007, the US city of Atlanta, Georgia, had a major water crisis due in part to the growth of the human population by 1 million in the past seven years (Roberts 2007). In addition, the whole of southeast United States was suffering from an epic drought. However, Georgia Governor Sonny Perdue’s solution to this crisis so far has been: (1) pray for rain or (2) blame the Endangered Species Act (Roberts 2007). Governor Perdue, pointing an accusing finger at the creatures that depend on a flow of freshwater down the Chattahoochee-Flint-Apalachicola system, wants to frame the problem as man versus mussel. He told a television interviewer that

no mollusk “deserves more water than the humans and children and babies of Atlanta.” I heard a somewhat similar statement (e.g., “put people first”) on television from Atlanta Mayor Shirley Franklin. The issue here is that human survival depends on the biospheric life support system that maintains conditions favorable to *Homo sapiens*, as it has for 160,000 years. The future of those Atlanta babies depends on this natural support system; so, “putting people first” means maintaining the life support system in a healthy condition, and the functioning of the system depends on organisms such as mussels. Governor Perdue’s views are shared by many citizens, as indicated by the headline: “Atlanta’s Water Crisis – 7 million people outranked by mussels” (<http://community.comcast.net/comcastportal/board/message?board.id=cityhall&thread.id=161640>). The Endangered Species Act and the US Army Corp of Engineers are supposed to protect the mussels in question, but that protection is questioned when explosive growth and declining rainfall demonstrate the flaws in inadequate management and planning. Better judgments will probably result if environmental literacy improves.

I am particularly sensitive to the issue of guns in national parks because, in April 2007, a lone gunman killed 32 students and faculty at Virginia Tech, with which I have been associated since 1968. I believe that educational institutions should be gun free, but that position is being questioned in the media. If humans will not protect individuals of their own species, why should anyone believe they will protect individuals of other species? Along the same lines, 47 US senators recently wrote to the Secretary of the Interior, Dick Kempthorne, asking him to lift the ban on carrying ready-to-fire weapons in national parks and wildlife refuges (Editorial 2008a). The leaders of the letter signing group, Republican Mike Crapo and Democrat Max Baucus, asserted that the federal government is infringing upon the gun-carrying rights granted by some states. Not mentioned was the temptation of some irresponsible gun carriers to shoot wildlife and the effect of shooting on the ability of non-gun carrying tourists to view wildlife in its natural setting. They also seem to have forgotten that national parks and refuges are federal lands set aside for the protection of species that inhabit them and the tax paying citizens who wish to see them in a natural setting that is free from the fear of guns.

Subsidized Predators

Since 20 March 2000, I have been a resident in Warm Hearth Retirement Village near Blacksburg, Virginia. It has superb woods with splendid hiking trails. A huge number of semi-feral predatory cats also exist here. Of course, a fair number of cats are kept in apartments and are rarely or ever outdoors. They present no ecological problems since they cannot prey on birds or rodents, which are food sources for wild predators such as foxes and owls. The subsidized cats, which get food and, in some cases, medical care have an advantage over feral cats and natural predators, which starve if they fail as predators and are also more vulnerable to disease. Of course, songbirds and other birds also suffer from loss of habitat and environmental pollution, so the threat of extinction comes from multiple causes. Some residents refuse to believe that cats kill birds despite robust evidence to the contrary. Convincing some residents that birds have rights is not an easy task. One woman told me that the cats have just as much right to be at Warm Hearth as I have. Had she said the biota indigenous to Warm Hearth before the retirement community was built, I would have agreed. One must remember that many residents have moved to this area, often from distant places. Companion animals, even if the interaction consists primarily of outdoor feeding and observation from a limited distance, are important to these residents. This situation must be balanced against the rights of birds that they see far less frequently.

An ornithologist, Kim Stevenson, shot a cat (from a feral cat colony) that was endangering rare birds. However, the feral colony was being fed by John Newland, who cared for the colony and considered the cats his own. Stevenson did not alert authorities that the cat was endangering rare birds. Stevenson, founder of the Galveston Ornithological Society, was arrested and later released on \$10,000 bail, but could face a \$10,000 fine and up to two years in jail. Stevenson said he would not have hurt the cat had he known someone was caring for it (Van Hoven 2007). No mention was made of the right of the rare birds to live or the responsibility of John Newland, who considered the cat colony his, for the death of the birds.

In the United Kingdom, a well established law reiterates that people on a river or whose house has a special view have a right to the ecological condition of the river that existed when they purchased the property or the scenic view that existed when they purchased the property. Loss of either requires restorative justice by the offending person or organization. If one assumes the person who feeds the cats is a common-law owner, then that person is responsible for the loss suffered by birdwatchers resulting from the death of songbirds and other bird species. This assumption merely places responsibility for damage caused by subsidized feral cats on the person who feeds them. Since cats can spread disease, this requirement might cause common law owners to carefully consider their responsibility for the damage caused by subsidized feral cats.

The basic problem is that animal lovers are biased toward certain species. Jessica Frohman, with Alley Cat Allies in Bethesda, Maryland, illustrates this point beautifully: “We’re intent on protecting all species. But birds are not somehow more important than cats” (Associated Press 2007). Should all species be equal under the law, or, if not, who decides relative importance?

Does Nature Have Rights?

Nearly 40 years ago, US President Nixon issued an executive order calling for a national strategy to protect wildlife by restricting off-road vehicles to carefully designated trails (Editorial 2008b). Later, US President Carter gave the interior secretary the authority to ban such vehicles from sensitive lands. Regrettably, except for a brief crackdown during the Clinton administration, nobody has paid much attention to these directives since then. However, 9 million off-road vehicles now exist, meaning all-terrain vehicles and dirt bikes (snowmobiles are a separate category; Editorial 2008b). In addition, their owners, with little resistance from the authorities who ought to be policing them, are transforming some of America's most sensitive public lands into their personal playgrounds.

If nature is to have rights, they cannot be turned on and off like a light switch. Ecosystem health and integrity, once damaged, may never recover or, if it does, may take many decades or centuries, depending upon the severity of the damage. Any person who causes such damage should have his/her vehicle confiscated and should pay the cost of ecological restoration for whatever time period the recovery takes. All off-road vehicles should be required to carry insurance and/or bonding to pay for ecological restoration if they leave authorized trails.

The mission of the US Department of the Interior is to protect and provide access to the nation's natural and cultural heritage and to honor the trust responsibilities to Indian tribes and commitments to island communities (www.doi.gov). One of the major goals is resource protection – that is, to protect the nation's cultural and heritage resources. However, US federal agencies seem to be strongly influenced by political ideology more than evidence. One example of this is the US Department of the Interior's Minerals Management Service, which is offering the sale of oil and gas leases covering nearly 46,000 square miles in the Chukchi Sea off the northwest coast of Alaska (Knickerbocker 2008). However, the sea ice, already melting faster than expected, is essential habitat for the polar bear and could result in the loss of approximately two-thirds of the current polar bear population by the mid-21st century. Other ecological effects of melting ice include the increased vulnerability of shore lines to erosion and the dangers to walrus and bowhead and beluga whales, as well as endangered shorebird species. Minerals Management Services Director Randall Luthi states that a robust environmental studies program monitors the effects of industrial activity in the outer continental shelf, but this program is not the same thing as a detailed, specific list of conditions that would require a cessation of petroleum and gas exploration and their extraction. Study is not regulation!

Shipping Water in Oil Tankers

Wilkinson (1992, pp. 47-88), his boat the *Riverkeeper*, a fisherman, a state trooper, and some very observant local citizens identified the problem of freshwater transfer by tankers and resolved it with intelligence and very hard work within existing laws. However, these activists were in a "sea" of either unobservant or indifferent citizens. Basically, Exxon tankers would discharge their cargo of jet fuel or gasoline from the Lago Refinery on the Caribbean island of Aruba and return to the ocean to flush their tanks. The tankers would then take on saltwater ballast and sail up New York's Hudson River to Hyde Park. Once moored, the tankers would flush their salt water into the river. Then they would use river water to rinse out the cargo and ballast tanks and discharge once again. Then the tankers would fill their tanks with Hudson freshwater for the Aruba refinery. Sometimes "surplus" water would be sold for swimming pools and other non-refinery uses in Aruba. After an initial period of denial on Exxon's part, a long process of negotiation began –eventually Exxon and the Fisherman's Association (which owned the *Riverkeeper* and employed Wilkinson) settled out of court. Part of the settlement was Exxon's commitment to discontinue the practice until the state legislature addressed the issue of tanker discharges; regulation began in 1985.

Conclusions

The history of life on Earth provides evidence that, over evolutionary time, natural law protects neither species nor ecosystems. It does show that, despite five mass extinctions, a diverse array of new species will develop from the surviving life forms. Both complex creatures and complex systems different from their predecessors are the result. Abundant evidence also indicates severe penalties are assessed for violating natural law (e.g., carrying capacity) or failing to adapt to new conditions (e.g., extinct species of the genus *Homo*). Yohe (2006) makes the important point that ignoring social costs calculated by either a traditional direct method or one derived from a risk-management approach systematically undervalues projects and programs that would reduce the consumption of petroleum (e.g., alternative sources of energy) while it produces a symmetric overvaluation of projects and programs that would do just the opposite (e.g., drilling in the Arctic National Wildlife Refuge).

As Cullinan (2008) notes, the gradual acceptance of James Lovelock's Gaia hypothesis by the scientific community fosters the realization that no aspect of nature can be understood without looking at it within the context of the system of which it is a part. However, US President Bush, many members of Congress, and

regional politicians still state that no steps can be taken to reduce global heating and other types of climate change if these steps would endanger economic growth. No human economy will survive if the biospheric life support system ceases maintaining conditions favorable to human health. Without acknowledgment of human dependence upon the biospheric life support system, no law is likely to be effective or enforced.

The previous section on USEPA Administrator Johnson's actions concerning California indicates that the law purporting to protect the environment has been used to delay reduction in greenhouse gas emissions beyond federal requirements. The section on cultural differences demonstrates important cultural differences in humankind's relationship with other life forms. The section on subsidized predators, such as cats, espouses the idea that persons subsidizing a particular species (e.g., by feeding) should be legally responsible for the consequences of their actions (e.g., reduced numbers of songbirds). If nature is to have legal rights, they cannot be turned off and on like a light switch with every political election. The section on shipping freshwater by oil tanker is intended to illustrate that the goals of corporations (e.g., profit) may not be congruent with those of human society (e.g., improving human well being).

A better understanding of nature at all levels of biological organization (e.g., species, community, ecosystem, eco-region, and Gaia) is needed before any attempt is made to protect nature with human laws. The US Endangered Species Act was well intentioned and has been very useful, but the constant battles to preserve its integrity, even its existence, would not occur if its relevance to human survival were better understood and appreciated.

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