

Will There Be Wolves in Paradise? by Rolf O. Peterson

When I was in high school, I entered an essay contest sponsored by a Minnesota organization called Clear Air, Clear Water—Unlimited. The assignment was to enlarge on something like the following statement: “Our standard of living can be no greater than the conditions of our natural resources.” This was 1965, and the job of researching this issue wasn’t as formidable as it might be now. Also, it was the first year of the competition, so I thought the number of entries might be low and I would have a better chance at the prize, a college scholarship. I was dumbfounded when I was announced as the winner, confirming my inference about the low number of entries.

Digging through old boxes recently, I came across a copy of my essay. It was very utilitarian in approach—dull, actually, with lines like “There is no danger of a coal shortage.” But in the concluding paragraph there was the interesting notion that just as wildlife management of the day consisted of improving habitat quality for the species of interest, so might we think about improving habitats for the human species.

Since 1965, there have been significant improvements in many aspects of our environment; the quality of air and water (in developed countries) is a case in point. But the biotic underpinnings of our own existence appear a bit wobbly in the face of climate change, bringing renewed attention to the global impacts of human activity.

The idea that humans have a moral obligation to leave behind a stable and habitable world must, by definition, have its roots in deep-seated beliefs that surface across cultures and through time. Moral beliefs are espoused by religions around the world, but their universality is apt to be buried under the clutter of specific practices, dogma, and traditions. That such beliefs have evolved in the human mind is, itself, an amazing testament to our humanity, for people apparently stand alone among the animals in the degree of conscious self-awareness that we possess.

The moral imperative to preserve life, basically the Golden Rule, is ultimately an attitude that will increase human survival, individually and collectively, with or without religious packaging. What is new today is a global connectedness, which hopefully inspires a global perspective for evaluating our actions. If human societies really understood the details involved in our own survival, and our dependence on the biosphere at large, one would think we would quickly respond with more sustainable lifestyles, as individuals and as nations. Why, then, do we not understand and respond? (An economic analogy is compelling: *Newsweek* columnist Anna Quindlen recently wrote, “It would be so much easier for Americans to get a handle on the financial crisis if they knew what it was about”).[1]

But the public at large does not yet have an ecological perspective, and ecological insights rarely penetrate the psyche of the average person. Lack of interest and understanding lead to delayed response at the societal level, creating greater uncertainty about our future options. And always, education is viewed as an important solution.

Almost thirty years ago I taught a course entitled Human Ecology, an outgrowth of my interest in such topics. Potential textbooks seemed to number in the dozens, and they were, for the most part, formulaic treatises with such stimulating chapter titles as “Air Pollution,” “The Water Crisis,” or “Energy.” A memorable rebel among the writers of such books was Kenneth E. F. Watt, from the University of California at Davis. His book *Understanding the Environment* [2] approached human behavior and environmental realities by laying out first principles, hypotheses, and completely original analyses based on such tomes as the *Statistical Abstract of the United States* or the *Statistical Yearbook of the United Nations*. Long before Jared Diamond or Tim Flannery pointed out how the peculiar geography of North America underlay the wealth of North Americans, Watt asserted that the seeming preeminence of the United States among world powers was simply a result of “pure luck.”

Echoing Quindlen’s lament about the complexity of the financial meltdown of the late 2000s, Watt argued that people generally did not understand environmental problems for four reasons:

1. Long chains of cause-effect pathways obscure original causes and end-effects.
2. Misinformation is often distributed by governments.
3. Information is missing or poor, and special interests spread propaganda.
4. The human brain does not perceive changes that are gradual, irregular, or subtle.

To know what the climate change challenge entails requires more than a cursory understanding of ecology. My entry and continued interest in that field has been a career-long involvement in research on the predator-prey dynamics of wolves and moose in Isle Royale National Park (see also the essay by John Vucetich in this volume). Celebrating the fiftieth year of wolf-moose research in 2008, there were many opportunities to try to convey, in a few words, what had been learned in all that time. I distilled the message to three C’s—change, complexity, and contingency. The lesson easily extends to the human condition.

Change

The fluctuations of wolves and moose on Isle Royale, the largest island in Lake Superior, have sometimes been dramatic and have always proved to be essentially unpredictable. Each decade of predator-prey dynamics has been unlike any other. From the perspective of the human species, change should not be thought of as unusual; rather, it is the hallmark of Earth’s history. Yet the fact remains that the wealth of the Industrial Age of Western civilization was acquired during a period of unusual climatic stability, near-optimal conditions, sandwiched between centuries of the Little Ice Age and what may prove to be centuries of human-driven warming of the Earth. Slowing down the rate of change is possible and would reduce the extent of physical and social upheaval.

Complexity

The wolves and moose of Isle Royale live in an unusually simple wild environment, with a single large predator and essentially a single prey (a few beaver can be added as a diet supplement for wolves, a prey option alternate to moose). Yet global weather patterns, invisible disease agents, and the intertwined relationship between moose and the dozens of plant species they consume present a level of complexity that is difficult to monitor, much less completely understand. Diseases and parasites, in particular, have been a powerful influence for both moose and wolves and are similarly significant for the global human population.

Contingency

Single, unanticipated events have shaped the entire trajectory of wolf-moose dynamics for the past fifty years. On the Fourth of July in 1981, a dog brought illegally to Isle Royale by a visitor on a private boat carried a new mutant virus—canine parvovirus—to the island. The wolf population was devastated, and most wolves died. A few survivors hung on, however, and after a decade brought the population back to near-average numbers, but not before the moose population irrupted. Moose numbers increased for the next fifteen years, to a density rarely seen anywhere in the world. The population bubble burst during the severe winter of 1995–1996, and three-quarters of the moose population perished from starvation. The aftershocks of the parvovirus episode continued twenty-five years later, as a “baby boom” generation of moose aged and died out, carrying with them the fate of the dependent wolves. Human history is likewise sprinkled with similarly important events that came seemingly out of nowhere, predictable only given the insights of hindsight. These events occur at all scales of time and space in our lives, in communities, nations, and the entire planet. Think about the outcomes, for the survivors, of tragic car accidents, Hurricane Katrina and New Orleans, the 9/11 attacks, or the collision of Earth and an asteroid or comet 65 million years ago.

The reality of living with the three C’s—change, complexity, and contingency—is to understand that there is tremendous uncertainty in the way future events will unfold, for all of us. Hedging our bets, conserving biotic capital, avoiding overconfidence in our ability to manage our way out of predicaments—these would all seem to be smart ways to live and satisfy our moral imperative to care for each other.

In 1981, Watt predicted that America would be very different “by the beginning of the next century,” and he pointed out that we could follow either of two tracks to this certain future. “One trajectory is through a trauma-free, gradual transition resulting from timely planning and preparation. The other path leads through an abrupt, painful discontinuity resulting from procrastination in making necessary and comprehensive adjustments to resource scarcity.”[3] Is there any doubt about which path America followed?

Nevertheless, our culture can change quickly. Witness the widespread recovery of the gray wolf, which I believe has been the most difficult species, aside from our own, with which humans have ever dealt. A sea change in attitudes about wolves occurred from the 1950s to

the 1990s, reversing the fate of wolf populations worldwide. The subsequent controversy over whether or not to allow wolves to repopulate Paradise is a case study in how difficult it is for the public to understand environmental problems. The difficulty occurs for exactly the reasons that Kenneth Watt described—missing information or misinformation and propaganda, coupled with long causal chains that result in subtle or irregular change. “Paradise” in this case is the Paradise Valley of the Yellowstone River as it flows north out of Yellowstone Park into a human-dominated landscape with lots of livestock and an increasing number of new homes for urban refugees. Will residents share the Paradise Valley with wolves? Ed Bangs, since 1988 the federal government team leader for wolf recovery in this part of the United States, says no. But that’s just a guess, his best reading of human behavioral response to the recovery of wolves in the Northern Rockies.

If there are to be no wolves in Paradise, so what? The implications of the absence of wolves in Paradise Valley are numerous, and the devil is in the details. Most of the wolves in Yellowstone prey on an elk herd that migrates in winter to lower elevations outside the Park, into Paradise Valley. The valley is “settled” by ranchers and livestock, and a growing number of “hobby ranches,” really just sprawling development. With thousands of elk in Paradise Valley in winter, wolves are inclined to join them. Ed Bangs doubts that human tolerance will allow wolves to persist in the valley. Consider a hypothetical chain of consequences. Without wolves, elk in the valley will persist at higher densities, and when they migrate back to the Park they will support wolves that might otherwise be forced to prey on a growing bison population. With more elk, wolves will prey less on bison. Yellowstone bison are controversial because they carry brucellosis, a disease that leads to a shutdown in beef exports from any state where cattle are infected. Here we have arrived at an economic impact that is very important for many people in Montana. Maybe, just maybe, wolves could change this entire chain of events if they were forced, by the circumstance of scarce elk, to prey more heavily on bison. Would I *predict* this would happen if wolves colonized Paradise Valley? No, the real world is far too complex, but imagine the possibilities.

Many decades ago René Dubos wrote, “The ability to choose among ideas and possible courses of action may be the most important of all human attributes; it has probably been and still is a crucial determinant of human evolution.”[4]It is our imagination, indeed, that makes us distinctive as a species. It is our imagination that compels us to think about our actions. Then we make choices, and these choices may have global impacts now and affect life on Earth far into the future. Human cultures that foster imagination and appropriate choices must be built on a foundation of global health and security. In turn, only these cultures will fulfill our moral imperative writ large.

Humans now have a dominant role in the global ecosystem, and to a large extent our collective actions will dictate the future not only of humanity, but of most of the living species on the planet. We are taking on this role with an amazingly inadequate knowledge of what, exactly, we are doing. We know neither as much as we think nor as much as we should. That will not give us much pause, but it would be prudent to exercise a healthy amount of humility and caution as we go forward. Ecosystems are the most complex entities in the universe, and the human

species is now the driving force behind change in the only one we know. The future is likely to be different from anything we now predict, and there are no historical analogues to provide much guidance. Change will be inevitable, but slowing down the rate of change would maximize the options open to everyone in the future. It is said that only death and taxes are inevitable; we can probably add climate change to this short list, but there is no reason to bring any of it on prematurely.

[1] Anna Quindlen, "Dollars and Sense," *Newsweek*, 30 March 2009.

[2] K. E. F. Watt, *Understanding the Environment* (Boston: Allyn and Bacon, 1982).

[3] Watt, *Understanding the Environment*, 407.

[4] R. Dubos, *So Human an Animal* (New York: Charles Scribner's Sons, 1968).