

## DANCE, DON'T DRIVE: RESILIENT THINKING FOR TURBULENT TIMES

Stegner Symposium on Sustainability, 2010

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Shedding a way of life based on limitless growth, the celebration and reward of excess, along with deeply ingrained habits of acquisition, consumption, and waste is going to be an overwhelming challenge. The culture of 'faster-bigger-more' will not yield easily to a new orientation where sustainability is the rule. We are going to need all the expertise we can muster to understand how we have overloaded the carrying capacity of our planet and its ecosystems—and how we can tread from here on with a lighter footprint. Innovations in technology, policy, law, and practices are absolutely essential. We need new models. Integrating our concerns for the health of ecosystems and the vitality of the individuals and human communities that inhabit those ecosystems is crucial. As we move forward, we must learn not just to connect, but to weave.

It is crucial that we change the goals and rules we live by through new laws, policies, programs, incentives, and constraints. At a deeper level, I believe that living within the boundaries of Nature requires a profound shift in perspective. We need to stop seeing Nature merely as a limitless source of lifeless commodities to be used and traded and start seeing the natural realm as an astounding web of living communities that includes us. And we need to see that we do not live above and beyond the dynamic of the earth's operating systems that sustain life itself. After centuries of *driving economies*, we must learn to *dance with ecosystems*.

When you see your habitat as a collection of dead, disconnected things to be manipulated for power and profit, you try to steer and control Nature. If you see yourself embedded in an ecosystem that is fluid, that has thresholds, that is so thoroughly interconnected, self-organizing, and emergent that is not only more complex than we thought, but more complex than we can think, then you don't drive Nature, you dance.

Let me offer some dancing lessons. Our understanding of ecosystems tells us that biological diversity is key and can be translated into resilience when an ecosystem is disrupted or stressed. We would be wise to heed this concept in the cultural realm as well, where intellectual diversity and lots of open and inclusive feedback are also key. As someone who has organized campaigns to make

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polluters accountable, I can attest that the health of one's physical/natural environment is often a direct expression of the health and vitality of one's civic environment.

A robust democratic civic-system, like a vital ecosystem, requires a diverse mix of options to draw from when faced with change. It needs credible feedback on how the choices we make together are working out so it can self-correct. Decisions about how to protect human health and how to conserve ecosystem vitality are more likely to be wise and precautionary when they are made openly, when they are inclusive, when they are informed, and when they are accountable. An active democratic culture, then, is a prerequisite for the kinds of changes we have been encouraging here. So it is not enough to consult economists and ecologists, even if you put them at the same table to talk to one another. Citizens must also be there.

If you look to where sustainability, or at least a hopeful transition to sustainability, is actually being attempted, you will find citizens acting at the grassroots, neighbor to neighbor, re-building their communities' civic environments while aiming to be sustainable. This is often happening under a different banner than sustainability, *per se*. People talk about peak oil, for example, and the potential for crippling shortages and price hikes. They understand that nature is loaded with disturbances—earthquakes, hurricanes, firestorms, floods, droughts, and pandemics that could interrupt our far-flung food and energy supply lines. They don't believe the center can hold and want to be prepared for the inevitable surprises and disruptions.

They also recognize that if our way of life is not sustainable, the obvious implication of that is collapse. In other words, that at some time a tipping point is crossed and the system that cannot be sustained breaks down because it destroys the very conditions that allow it to persist. The very term "unsustainable" tells you the end of the story—and if you see yourself and your loved ones at the end of that story, then you would be wise and prudent to work to make the unsustainable system sustainable or to build a lifeboat, or do both.

Ark building abounds. This movement towards what might be called *de facto* sustainability is answering the question "what can we do for ourselves that is sustainable when what is not sustainable goes away?" This movement is happening without federal aid or direction—it is growing from the bottom up. It is a grassroots phenomenon because those whose wealth and power are entrenched in the unsustainable system are unlikely to challenge the very system that upholds their wealth and power, or even give up unsustainable short-term values like the next quarterly report. Much of it is in a rough draft phase. I call it a "movement" but it seems less coherent and intentional than that. It is more emergent than ideological, more open-source than doctrinaire. The Web empowers the broad and rapid exchange of ideas and information and creates rich feedback and diverse options.

Because they assume they will live through turbulent times in a globally warming world that is running on empty, it is easy to mistake these folks for some new kind of survivalists. Not so. It isn't about building bunkers but about building

community. In this emerging age of chaos, we are learning that our most reliable security is not in the hands of distant officials in Washington but in the hands of neighbors, that self-reliance is safer than dependence, that a robust community will be more effective in a crisis than thousands of individuals breaking out their survival kits alone while waiting for the helicopters to land, or waiting for gasoline tanker-trucks to return.

If what we must survive is the unraveling of an unsustainable system, then it makes sense to aim for a more honest and realistic reckoning of the earth's carrying capacity and the human impact on it the next time around. It makes no sense to invent a post-collapse society or economy that is also unsustainable, that also ignores limits, contingencies, footprints, and uncertainties.

I urge you to use the term "resilience" when you make your case for sustainability. Living sustainably is ultimately a profoundly moral imperative that involves our obligations to future generations, to our children's children. That moral argument must be made and, hopefully, it will take hold over the long run. In the meanwhile, we must motivate others to change now. In my experience as an activist and organizer, people are more likely to change their immediate behaviors when it seems in their self-interest to do so, not because someone tells them they "ought" to do something new or they "should" do so. Too often, when we use the term "sustainability," others we want to influence hear "eat your peas!" Or eat fewer of them.

The word "resilience" makes sense and resonates positively. If disturbance is inevitable—and in this emerging age of climate chaos and economic failure disturbance is indeed inevitable—then it makes sense to protect oneself by having a plan and by belonging to a group that will offer mutual aid. As Bill McKibben points out in his insightful book *Deep Economy*, in a world beset by unpredictable and extreme weather, shortages and disruptions, comfort, security, and meaning will no longer be determined by ownership, but by membership, by being a participant in a community that can provide mutual aid in a turbulent time.<sup>1</sup>

In Great Britain, a "Transition Towns" movement has sprung up in an effort to spark ideas about, and focus energies on, how to wean whole communities off imported energy and food.<sup>2</sup> Relocalization is an international movement, developing a compelling platform for the greening of modern society.<sup>3</sup> In Europe, there are now hundreds of local groups in at least a dozen countries that are convening community meetings to make other arrangements for the post-carbon

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<sup>1</sup> See generally BILL MCKIBBEN, *DEEP ECONOMY: THE WEALTH OF COMMUNITIES AND THE DURABLE FUTURE* (2007).

<sup>2</sup> See generally Gill Seyfang & Alex Haxeltine, *Growing Grassroots Innovations: Exploring the Role of Community-Based Social Movements for Sustainable Energy Transitions*, available at [http://www.uea.ac.uk/env/cserge/pub/wp/edm/edm\\_2010\\_08.pdf](http://www.uea.ac.uk/env/cserge/pub/wp/edm/edm_2010_08.pdf) (last visited Nov. 26, 2010); TRANSITION NETWORK, <http://www.transitionnetwork.org/> (last visited Nov. 26, 2010).

<sup>3</sup> *Relocalization – the Sustainable Communities Movement*, LITTLE GREEN GUIDE, <http://www.littlegreenguide.com/relocalization.htm> (last visited Nov. 26, 2010).

future.<sup>4</sup> With a rising sea at its front door, the Netherlands has taken a further step. Its national security plan actually makes sustainability and environmental recovery key priorities.<sup>5</sup>

In the U.S., “post-carbon” and “transition” working groups are beginning to sprout across the country—and not often under those banners. For example, a grassroots advocacy group based right here in Salt Lake—HEAL Utah—has embarked on a campaign called “eUtah.”<sup>6</sup> They are bringing citizens, scientists, engineers, utility administrators, business leaders, and reps from state and local governments together to envision and then detail a plan to provide Utah with 100 percent locally controlled alternative energy—no coal or nuclear at all, period. This may sound impossible or at least impractical, but fundamental change begins with visions that are bold and inspiring, not mundane. Central to HEAL’s vision is the recognition that small-scale technology is often cheaper and more resilient and does not undermine democratic institutions by requiring the centralization of capital, expertise, and authority.

Such local groups are often loosely allied with one another through websites and blogs that report on the progress of diverse projects, trade ideas as well as information, and offer lots of feedback. This is not a traditional movement. It is more emergent than ideological, more open-source than doctrinaire.

Although the citizens engaged in such projects have largely given up on outside aid, think what could be accomplished if just a fraction of the billions of dollars we spend on foreign wars and Wall Street bailouts could go towards building resilient communities. We could be creating community gardens and farmers markets, promoting regional food security, encouraging those who want to homestead abandoned urban landscapes, build bike paths, retrofit homes and businesses with off-the-grid solar and wind, and we could do so much more to conserve local watersheds, restore habitat and connectivity. Instead of Homeland Security, we could have *homegrown* security.

When citizens cannot rely on big, distant, and inaccessible agencies, they find that within the context of their own communities, their actions make sense and resonate with meaning. It’s a matter of scale. Most of us who are aware that change is needed are caught between the seeming futility of small-scale actions—like recycling our trash, using different light bulbs, or taking shorter showers—and the impotence we experience when we push for large scale change, like climate legislation in Congress or international treaties in Copenhagen. On the one hand, too little, on the other, too late.

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<sup>4</sup> See ROB HOPKINS & PETER LIPMAN, WHO WE ARE AND WHAT WE DO (TRANSITION NETWORK) 4–5 (2009), available at <http://www.transitionnetwork.org/sites/default/files/WhoWeAreAndWhatWeDo-lowres.pdf>.

<sup>5</sup> See Karlson Hargrove & Michael H. Smith, THE NATURAL ADVANTAGE OF NATIONS: BUSINESS OPPORTUNITIES, INNOVATION, AND GOVERNANCE IN THE TWENTY-FIRST CENTURY 258 (2005).

<sup>6</sup> *The EUtah Project: A Roadmap to Utah’s Energy Future*, HEALTHY ENVIRONMENT ALLIANCE OF UTAH, <http://healutah.org/cleanenergy/eutah> (last visited Nov. 10, 2010).

There is, however, a middle scale between individual actions and national or global campaigns that works well and makes sense—the community. At the community scale, people can embrace their roles as citizens, face one another, share, contend, cooperate, create, learn from, and empower one another.

Participation in a community requires commitment and commitment is an investment in precious time and energy. The rewards for that have to be real. The relationships created within one's own neighborhood and town can be powerful and compelling. Especially in hard economic times, one's personal network of friends, family, co-workers, and neighbors can be all we have to fall back on when a job disappears, a business fails, or a home is lost.

If you believe as I do that our carbon-driven, industrial, over-burdening way of life is unsustainable and is doomed to fail sooner or later, then it is important to understand how that will play out. I do not see a global, apocalyptic scenario on the order of popular treatments like the movie *2012*.<sup>7</sup> Collapse will also be experienced locally.

Hurricane Katrina, for example, is commonly seen as a harbinger of a world that is experiencing climate chaos. It was a watershed event in our emerging consciousness about the new turbulent climate regime to come, an atmospheric dynamic that, given enough reinforcing feedback, could knock down civilization itself. But most of us would scoff at the suggestion that Hurricane Katrina was indeed the end of the world—the so-called “big one.” But it was in fact the end of the world for the thousand people who drowned there. It wasn't the end of civilization for most of us either, but for those who lost homes, businesses, jobs, family, and community—for those now homeless and living as refugees in trailer parks—it might as well have been the end of civilization. The consequences of our unsustainable way of life will be experienced incrementally, individually, locally, variably, and unpredictably. Again, it makes sense to act where you live and to do so now—build that crucial network for mutual aid before turbulence hits.

Here in the West, we would be especially wise to learn from those who are trying to become resilient. We live in a landscape that separates cities by great distances. We are particularly vulnerable to disruptions in fuel supplies since so much of what we depend on is trucked and airlifted to us from far away.

Like most cities in America, our Western cities have only a week's worth of food in the pipeline at any given time. Isolated rural communities are even more vulnerable. Our industrialized and globalized food production and distribution system is a wonder. It brings us exotic food from distant places at affordable prices. Those mangos from Mexico and kiwis from New Zealand are certainly a treat. I enjoy vegetables from Chile in the winter. But food shipped from that far away can be disrupted many ways—a calamitous storm that hits a food-growing center; spikes in the price of fuel for fertilizer, farm machinery, and trucking; regional warfare that shuts down harvests or blocks trade routes; national policies to hoard food as prices spike or scarcities set in; not to speak of the usual droughts, floods, and crop failures that have always plagued humankind and are intensifying

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<sup>7</sup> (Columbia Pictures 2009).

in a globally warming world. Imagine what would happen if a global pandemic and the ensuing panic shuts down ports and air traffic for even a month.

Sadly, for those of us who live outside of California and Florida, local food remains seasonal, limited, and anything but diverse. In Torrey where I live, if the grocery shelves were empty, if the trucks stopped rolling, I would eat a lot of cow. A LOT of cow. An interruption of food supplies from afar is only tolerable if we've planned ahead and can fill in with local/sustainable/resilient agriculture.

Westerners also live within a dynamic landscape prone to disturbance. If Salt Lake City goes down in an earthquake, Federal Emergency Management Agency (FEMA) can (we hope) feed people via trucks and airlifts. If some part of the global food trade were to shut down, however, hundreds of thousands of community gardens and networks of backyard farmers ready to share their harvests, not warehouses full of emergency provisions, could prove the difference between crisis and catastrophe.

Does homegrown agriculture sound unrealistic? In 1943, barely two years into World War II, 20 million American victory gardens were producing a staggering 30–40 percent of the nation's vegetables.<sup>8</sup> Thousands of abandoned urban lots were being cleared and planted by tenement neighbors working together. The Office of Civilian Defense encouraged and empowered such projects, but the phenomenon was also self-organizing because citizens on the home front *wanted* to participate.<sup>9</sup> Home gardening was, after all, a delicious way to be patriotic. Today it could be an appealing invitation to be resilient.

I suspect that resiliency is ultimately a matter of scale, distribution, modularity, and redundancy—building resilient communities and economies will involve deeper challenges to prevailing assumptions and habits than just learning how to garden together. But I believe we have at least begun to shift away from a culture of reduction and fragmentation, from centuries of understanding how the earth makes wealth, to understanding how the earth creates health. It is a shift from mindless and blind growth for growth's sake to a recognition that ecosystem and watershed viability require reciprocal relationships and constraint, and that such reciprocity and constraint imply stewardship, thrift, temperance, precaution, fairness, generosity, care, solidarity, and—yes—*love*.

When I addressed this conference in 2005, I said that, ultimately, we save what we love—that caring for a landscape to which we feel keenly connected is the very ground of our commitment to ecological citizenship. That is still the case—we need to experience the land firsthand. But we also need tools, even those of us who care deeply.

I want to suggest to you this afternoon that the people who are working towards sustainability have tools and concepts that lead them on, tools that people who resist change do not have. When I was working with rural people who lived downwind from chemical weapons testing and toxic waste incinerators, I could not

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<sup>8</sup> Mike Davis, *Home-Front Ecology: What Our Grandparents Can Teach Us About Saving the World*, 92 SIERRA 4, 54, 52–71 (2007).

<sup>9</sup> *Id.* at 56.

enlist them in campaigns to make polluters accountable until they understood that the closest link between them and their environment was their own bloodstreams. That decisions about what we allow into our air, water, and soil get translated into flesh and bone and daily experience. That consciousness had to precede commitment.

Getting people to live sustainably isn't going to happen because we shake our fingers at them and say "No, no! You are behaving badly, foolishly, greedily, or even self-destructively . . ." That woman you see pushing the pallet out the door of Costco with a package of toilet paper the size of a parade float is going to hear that message as pointy-headed scolding. She is going to use that TP anyway and what is the alternative? If we make her feel bad enough, she may go listen to Rush Limbaugh because he makes her feel better about herself.

She needs a new context for understanding her consumption and, above all, she needs to become ecologically literate. Ecological literacy is key. The ecological sciences are the very basis for our environmental laws and policies. The emerging global movement to deal with global climate chaos and restore the earth's operating systems is premised on understandings gained through the environmental sciences. Ignorance of those sciences undermines the basis for changes that are urgently needed.

Ecological science, for example, shows us the value of biodiversity in the resilience of stressed ecosystems and the important role that keystone species play in keeping ecosystems vital. If you do not accept evolutionary theory, you are likely to also reject the need to protect biodiversity. Saving owls and restoring wolves may strike you as the crazy idea of extremists, elitists. You are also less likely to recognize when a natural system, like the earth's climate, is getting pushed to a tipping point. To go back to that dance analogy, if you are ecologically illiterate, you cannot get the beat and you do not know the moves. You cannot do the dance if you cannot see the dance floor.

The fundamental contradiction of our time is this: we have built an all-encompassing economic engine that requires constant unending growth—a contraction of even a percent or two is a crisis. But we are embedded in ecosystems that are indeed limited. There is only so much fertile soil, so much fresh water, so many fish in the ocean, the atmosphere can only absorb so much CO<sub>2</sub> and stay benign. As Kenneth Boulding memorably remarked, "[o]nly a madman or an economist thinks exponential growth can go on forever in a finite world."<sup>10</sup> But certainly not an ecologist. The bottom line of ecoliteracy is understanding the reality of those limits and the self-destructive impact of unrestrained growth.

To say that we must learn to live within limits is not to say our lives will be diminished but that they will acquire context. Context creates meaning, insight, purpose, depth, and fullness. And to say that ecosystems have limits must also be qualified. As long as an ecosystem is intact and vital, it can be an inexhaustible

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<sup>10</sup> Kenneth Boulding, *Shadow of the Stationary State*, in *THE NO GROWTH SOCIETY* 89, 97 (Mancur Olsen & Hans-Martin Landsberg eds., 1973).

source of sustenance, pleasure, and beauty. A wonderful model for what I am describing here was recently proposed by Wendell Berry. As Mr. Berry reminds us, art does not enlarge itself by limitless expression but, rather, is enriched within boundaries. A painting, however large, is bounded by a frame or a wall. A musical composer or a playwright must reckon with an audience's capacity to sit still and pay attention. Within such limits, the artist achieves elaborations of pattern and the sustaining relationships of the parts to each other and to the whole. Such bounded contexts do not limit meaning or resonance for the viewer or listener. Ecosystems survive by the same inexhaustible, ever-changing intricacies, the same bounded potentialities.

Eco-literacy, then, replaces a delusional context—the notion that humans live above and beyond the boundaries of the natural/physical realm without need for restraint, responsibility, respect, or reverence—with a context that sees us embedded in that natural realm and that realm embedded in us, in our bones, our lungs, our guts, our hearts. It replaces an orientation that engenders alienation with one that fosters affiliation.

We need environmental science in our schools more than ever. A generation of students who are ecologically illiterate will be ill prepared to meet their future. They won't understand what is happening around them or how to heal the damage we have done. They will not be able to create new technologies that mimic nature's models for recycling waste and energy. They will walk into the future without a map they can read. Every politician I know wants computers in every classroom. Fine. Now how about a garden for every school—soil as well as cyber? Your life, after all, is enhanced by cyber but it is dependent on soil.

I am confident we can become ecoliterate and quickly. Just look at how we have become computer literate. If I told you just two short decades ago that I liked to Google and blog, you would have wondered if I had regressed and lost my adult vocabulary, so strangely unfamiliar would those terms—Google and blog—be back then. “Come again?” you might say. “Ya know, I like to surf the web on my laptop,” I'd reply, “Do what on your what?” I might follow with examples of favorite sites like Wikipedia, YouTube, EBay, and Yahoo. At this point you would be humoring me with a nervous smile while you scanned the horizon for an escape route in case my incoherent demeanor was a sign of some underlying psychosis. If I ran on about how I collect tunes on my iPod and like to twitter, or if I asked to take a photo of you with my cell-phone to download onto a Blackberry, you would be sure I was a deluded babbling.

Imagine your account of this conversation later: “First he went on about playing with his lap at some sort of wicked hootenanny—hooray or something like that—and he said he kept music in a peapod and liked to shiver. When he wanted to take a picture of me with some telephone in his skin so he could rub it on a strawberry . . . well, that's when I got out of there.”

Logically enough, words that are invented to name new things and activities follow what they describe. But words can also shape new behaviors—pull them from mind into being. Words like “baptize,” “market,” or “democracy” help create



what they describe. Words can merely light up what we are passing by or they can illuminate the path ahead.

Language is both a filter and a lens. It shapes perceptions and actions fundamentally because the articulation of reality is more primal than any strategy. A vocabulary implies a story about how the world works and why. A society that incessantly talks about “productivity” but rarely about “resilience” will be productive, not resilient. We chatter endlessly about opinion polls and stock market percentages but the chance that you will hear or read the phrase “carrying capacity” in popular discourse is next to nil.

Hopefully, ecological fluency leads us away from reduction, fragmentation, and an obsession with prediction and control. The self-organizing, emergent, ever-morphing, complex, dynamic, interconnected, nonlinear world that ecological fluency describes is not a world of things, but a realm where relationship and process reign—a dance.

If we can so rapidly acquire the new skills and understandings that we have gained by adopting computers and the WorldWideWeb into our worldview and into our daily lives, then why can't we also become ecologically literate and just as conscious of those other world-wide webs that enfold us? We could also acknowledge nature's operating systems in our shared language.

Hopefully, not too many years from now if I use terms like ecotone, threshold, keystone species, biodiversity, nutrient cycle, and carrying capacity, others around me will instantly and easily understand me, even if I am riding on the bus with strangers. This is more likely to happen if we consciously use such terms and teach the concepts they describe.

So, those of us who are already ecologically literate and know that vocabulary, have a responsibility to use it, share it, explain it, teach it, and spread it, especially among others who are not yet ecologically aware. Be bold—help everyone on the bus learn and talk about what you already know . . . maybe, just maybe, we can save the planet one word at a time.

I will end here by thanking you once more. Keep integrating your concern for both the vitality of the natural realm and the human realm that is embedded within it. Keep weaving. Keep trying to give us better measures for what we are creating together—for what we call the economy—rather than Gross Domestic Product. Keep reminding us that the purpose of an economy is to meet human needs in ways that make our lives more meaningful and richer in relationships, and not just to make and buy more stuff. And do not shy away from engaging politically—to take what you learn and share it openly, applying and testing it out in a messy, complicated, contradictory world that will sometimes receive it with rough hands and a tenuous grasp. Practice that awkward dance of mutuality that is the very signature of a democratic culture—the dance where we share, learn, listen, reconcile, invite, reciprocate, step towards one another and embrace.

If we take our dancing lessons to heart, we may become not only resilient but grateful, humble, and reverent. Wisdom and grace, or business as usual? The choice is here and now.