

## **The Sustainable Ways Interview**

**Social Ecologist and Author Stephen R. Kellert Shares His Views of Sustainable Design**

*Editors' Note: Stephen R. Kellert is the Tweedy Ordway Professor of Social Ecology at the Yale University School of Forestry and Environmental Studies.*

**Sustainable Ways (SW):** The word “sustainable” as a perspective or even a movement means a lot of different things to different people. What are essential characteristics of sustainability or sustainable development in your view?

**Stephen R. Kellert (SRK):** To me, several issues come to the fore. One is *what* are we trying to sustain? Two [is] the definition of sustainable as something that [implies] the indefinite future. And three is the environmental dimension. If sustainable development is only meant to be an economic term, that is, that we’re going to sustain a healthy economy, or let’s say a certain GNP, that doesn’t necessarily have anything to do with sustaining a healthy and intact natural environment. [In regard to] the issue of what are we trying to sustain, most discussions of sustainability tend to focus on material and physical sustainability. The problem with that is it only covers a portion of the values that are important to people in terms of quality of life, so I would include emotional, intellectual, and spiritual dimensions. The second [aspect] of the term sustainability concerns what it means in a temporal dimension. For example, the area of sustainable design and development mostly means minimizing or avoiding adverse environmental impacts, whether it be the amount of resources we use or the toxics and pollutants we generate. That is important, but it doesn’t necessarily guarantee that you will maintain something indefinitely into the future. If people don’t resonate with an environment, building, or community, they won’t necessarily have a sense of commitment to or relationship with it. They may become tired of it and move elsewhere, and that’s not a particularly sustainable accomplishment in the long-term sense of wanting to be there and recycling that structure generation after generation. So in the case of sustainable construction or development, if you can be sustainable only by building something new, then you’ve, of course, contradicted yourself. Something new always involves new resources...and more consumption of energy, space, and materials, no matter how well you do it. Sustainability has to maintain a certain continuity of connection to a building or community.

**SW:** Do you have a sense of why we see sustainability in such a narrow way?

**SRK:** I think it’s a deeply ingrained bias of our society to look at things in a narrow, materialistic way. I also think that we have an inclination to support those things that can either lend themselves to technical solutions or quantification. For example, trying to achieve energy efficiency, as difficult as that may be, nonetheless lends itself more easily to a technical solution and something that can be quantified, as opposed to trying to enhance people’s well-being, especially their mental or spiritual well-being—that is much more difficult to articulate, let alone to submit to a kind of standardized procedure or methodology.

**SW:** That leads us to a question concerning your own well-known biophilic values typology that speaks to the innate human tendencies to affiliate with nature. What are ways we might use the values typology to broaden that spectrum of consideration toward more authentic

sustainability?

**SRK:** I'm obviously biased toward my own perspective, but I do think it provides a broader approach. It suggests that these inclinations to attach emotional, intellectual, and spiritual value to the natural world are inherent tendencies and, as a consequence, are deeply related to our long-term well-being as individuals in this society, confer adaptive benefits, and are not merely decoration or amenity values. For example, aesthetics, which we know is deeply emotional, is also physical and spiritual, and there's a good reason why every human—so far as I know—has an inclination to attach aesthetic value to the natural environment...We need to recognize it and understand it and incorporate it into the way in which we design and develop our buildings or our communities. The biophilic values provide a kind of template that can point us toward different dimensions of our interdependency [on the natural world] and can be used as a sort of checklist, in the broadest sense of the word, to make sure that our designs and developments touch upon those different aspects.

**SW:** We've appeared before decision-making bodies such as city councils or county commissions and often [in regard to] the development under question, we've tried to bring that perspective of the importance of the natural environment. Do you see ways the biophilic values might begin to make their way into mainstream thinking, particularly among architects and decision-makers and the like?

**SRK:** That's a great question, and that's where the problem often lies. For example, [when] you're speaking before a commission with certain regulatory standards and approaches, it's very difficult to talk about these things and have them taken seriously because they don't lend themselves to a sort of narrow calculus ... Yet when decision-makers omit these considerations, they often get themselves in trouble. They make decisions that offend people and provoke them to protest in extralegal ways...or in legal ways through the courts because they feel things that are deeply important to them have been excluded from the decision-making process. So how do you get these [biophilic aspects] more extensively considered? It's a good question; I'm not sure of the methodology that would work. I think there are various methodologies that need to be considered. Education is obviously one of those which is very long-term and very subtle, but it's fundamental. I think in the shorter term we need to generate data. Until we provide the empirical proof that the consideration of these factors matters, it will be difficult to get them incorporated into discourse that [biophilic aspects] actually enhance people's well-being, productivity, and commitment, and result in more sustainable outcomes. For example, I just completed a proposal with the Rocky Mountain Institute, which is an illustration of the intent to do this, again, focusing on buildings, but buildings within the context of community...The main title is "Bringing Buildings to Life," and the subtitle is "Creating Healthy and Productive Places by Connecting to Nature." And the subtitle of that is "Developing Scientific Basis for the Practice of Biophilic Building Design." What we want to do is a three-phase project which develops the theory and understanding of what we mean by biophilic building design, and then to demonstrate that the variety of built environments—whether it be residential, commercial, manufacturing, educational, or health related—that incorporate this kind of design tend to be healthier and more productive in terms of the experience of people who use and occupy them. We have a whole phase of the project which tries to implement changes in the practice of architecture and design engineering that capitalizes on the outcomes. This data has been developing in recent years through studies of natural light and natural ventilation and other kinds of biophilic design factors, but this will be far more comprehensive and ambitious. Without this

kind of empirical demonstration with fairly rigorous methodologies in a variety of building contexts, geographic locations, and uses of buildings, [as well as] in different demographic groups, we won't have the ability to provide a persuasive picture that really matters in an instrumental way to have these biophilic values systematically addressed in the built environment.

**SW:** You've spoken in many ways in your books about the importance of weaving nature into the daily lives of citizens, whether that's the neighborhood or the places they work and so forth. Are there other things that community members can be doing—even while you're assembling the empirical data that you were just speaking of—that can help us begin to do those kinds of things?

**SRK:** There's a lot going on. The most challenging environment is the urban environment. Our traditional paradigm of urbanization has meant massive consumption, waste, and pollution, as well as separation and alienation of people from nature. Nearly 80 percent of us in the U.S. live in a metropolitan area now, and it's suggested that 80 percent of everything that has been constructed has occurred in the last 50 years. So both from the population and consumption side, the urban area is really where the foremost challenge occurs in this regard. One of the difficulties of the urban environment is that especially the large, urban mega-cities around the world tend to rely ever increasingly on vertical structures. Most of our evolutionary experience of the natural world has been on a horizontal plane, so how do you build into a 65-story office building an experience of nature that is any more than superficial or vicarious? There have been some interesting designs that have occurred in recent years. There is a fascinating design by Sir Norman Foster of a headquarters for a multinational bank in Frankfurt, Germany, which has what he calls winter gardens every thirteenth floor. He only touched the surface of what can occur there, but that represents some possibility. [There is also] the extraordinary promise of green roofs combining the low environmental impact and biophilic design objectives of restorative environmental design, particularly in an urban context...Green roofs can help mitigate heat island effects, improve energy efficiency, lessen heating and cooling loads, and enhance biodiversity. Also, there's no reason why green roofs can't be experientially more positive and aesthetically rich environments, especially given that rooftops represent the largest available habitat in most metropolitan areas for the photosynthetic effects of sunlight. The possibility of doing something with that habitat is exciting.

**SW:** Can you say more about what you refer to as restorative environmental design?

**SRK:** Restorative environmental design seeks to construct buildings and landscapes in ways that minimize harmful impacts on the natural environment while also providing people with positive opportunities for beneficial contact with nature in places that also have ecological and cultural meaning...The development of this new paradigm will also require the emergence of a new biocultural ethic toward the natural world.

**SW:** And that ethic is rooted in the biophilia hypothesis?

**SRK:** Biophilic values constitute threads of relationship between people and nature that foster an ethic of care for the natural world. This biocultural, environmental ethic stems not from charity or kindness toward nature, but from an understanding of how human welfare is

advanced through [many] ties to the natural world.

**SW:** Is there any other thing you'd like to say to students, mentors, and faculty in regard to sustainability in its many guises, such as things we might look for or just pay attention to?

**SRK:** There are some very eloquent and articulate statements that we need to [reread]. So much of it is a 'going-back-to-the-future' kind of thing, where some of our greatest poets [and] our most inspiring people like John Muir, Henry David Thoreau, and Henry Beston have really articulated some of these issues so well. We need to reread that material and bring it to a more modern context. We [also] need to enhance our recognition that we are just another biological creature and see ourselves in that way. I think it was Judith Heerwagen who said that some of our most alienating work environments, in the sense of separating us from nature, are often in the modern office building where people are in these very bland, hostile environments with no access to windows or any experience of the outside or natural environments. Ironically, if you tried to do that to a caged animal in a zoo, you would violate legal statute, and would be prevented from doing so. We don't allow zoo animals to be in these barren, alienating, unnatural environments. And yet we allow ourselves to be, and it's such a glaring example of how we don't see ourselves like that tiger in the cage, that we're just as much dependent upon those experiential connections as the tiger is. We lose track of that because we see ourselves as somehow apart or separate from nature. We need to maintain that broader understanding of who we are and where we fit into the natural scheme.