

The Ecology of Hope  
By Cheryl Charles, Ph.D.

Keynote Address to the 35<sup>th</sup> Annual Conference  
Of the  
North American Association for Environmental Education  
St. Paul, Minnesota  
October 14, 2006

Good morning. It is a pleasure to be here to address you, and to have been here for the duration of this Annual Conference since Wednesday night. There is so much substance, spirit, enthusiasm and positive energy among you. So much good work, as always, is underway. I commend you, thank you, and am inspired by you all.

I've keynoted this conference twice before, in the 1980s, and again in the 1990s. I am honored to be here today.

I'd like to have us think together about four major topics. I will make some comments, show a short set of images to music, and then I'd love to open the floor to conversation, your comments, questions and ideas.

In the past two years, made compelling for lots of reasons—including where I am on the “aging boomers continuum”—I've been thinking a lot about my own contributions to a living legacy and our generation's contributions to a legacy. I have always been one who followed my heart—and entertained logic, experience and scholarship to temper my choices. At this point in my life, more than ever, I want my work to touch my soul—to re-awaken my commitment. To touch one's soul is to touch mind, body and spirit in ways that release the passion—the

passion and the peaceful resolve to do whatever we can, with all of you and others, to leave the world a better place than it is now.

So, I've been thinking about this and making some changes in my life path to follow my heart, tempered by logic, experience, conviction, and maybe a splash of stubborn.

For me, the four most important things I offer for your consideration—and the four things I am going to spend the rest of my life immersing in, are:

- Re-Connecting Children and Nature;
- Caring for Communities;
- Designing for Life; and
- Nourishing a Planetary Perspective.

Each of these, in combination with the others, helps to form what I am calling “**The Ecology of Hope.**” Together, if we DO these things, I think these four have the most power and potential to re-connect people and nature in healthy ways for the long term.

Ecology is a term my grandfather, Perl Charles, first brought to my life. He was born in 1899 and traveled with his family to the western US by train, wagon and on foot at a time when people sought New Mexico as a place to, it was hoped, recover from a grave illness, in this case, Great Grandmother's tuberculosis. The family, with four very young children, settled in New Mexico in 1907. Grand dad, as were many in the Charles family, was a life-long conservationist. And we, like many of you in this room, are members of a family that grew up close to and on the land. Granddad taught me what all of you know and that is, in an ecology, all parts of any environment, living and non-living, exist in relationship to one another. The parts interact dynamically, and no one part stands alone. As poets and naturalists through time have observed, everything is connected to

everything else. Everyone here knows that, but everyone outside of this building does not—and **that ancient wisdom is more and more at risk every day.**

That reminds me to share an observation I heard this year at a national meeting of the Council on Competitiveness—a gathering replete with national and international business leaders focused on keeping the US competitive economically on the world stage. One of the speakers said, “I know I am speaking to the choir here.” And then he said, “It’s okay to speak to the choir—as long as the choir gets bigger and bigger and bigger.” All of us here—a choir of common sense and deep connection to the living world—have a significant opportunity, right now, to grow this choir and have its voice heard throughout the world. A choir of common sense. A universal choir of hope.

We have to believe we can make a difference, really. We have to believe that people of all faiths, ethnicities, economic circumstances, and age can work together to make a difference for the health of all life to come.

Everyone here has a unique understanding of what’s needed. Everyone here is grounded in the ecology of living systems. You live it. You love it.

You believe in the future, or you would not work as you do, everyday, to conserve what’s precious—from living systems of all kinds to human ecologies. Every one of you here has a special niche, a unique role—and, we are all connected. We have an opportunity now—to connect our community of shared interest, our ecology of hope, with more and more and more communities of shared interest throughout this nation, and around the world. For all of our challenges, this is a very exciting time.

There are many factors that contribute to humans’ capacity, and likely need, for having hope. Without hope, we die—if not immediately physically, we do in terms of dreams, aspirations, and spirit, all of which are fundamental to hope. I believe,

among other factors, that hope is derived from the exercise of will. Success in exercising will, on whatever scale, develops a sense of efficacy—that is, a perceived belief that I or you can make a difference. Combine the exercise of will with the experience of efficacy and hope is the result. The perceived belief that you or I can make a difference is tied to what, in psychological literature and research, is called an “internal locus of control.” If one’s locus of control is internal, then we believe we can take action that will make a change and get results. If one’s locus of control is external, then we tend to believe it won’t matter what we do—everything is beyond our control, out of our hands, and we can’t make a difference. The enormity of the things that seem beyond our control can foster an external locus of control—which, in some circumstances is a coping mechanism—but, ultimately, it tends to be self-defeating.

So, for many reasons, beginning with the enormity of the challenges we face—from what some call “eco-anxiety” to the malaise of the culture of depression to the ravages of lost biodiversity and global climate change to the disillusion of youth and the growing perception that things are beyond control—we, who can, need to demonstrate the positive power of the Ecology of Hope. We can exercise the will, we can create opportunities for success, we can cultivate a sense of efficacy, and we can nourish an internal locus of control in ourselves and others by fostering successful links between conscious choices and positive results.

How? In the big picture, with details for each, we can: re-connect children and nature, care for communities, design for life, and nourish a planetary perspective.

Before I speak to each of these, here is some news released recently, October 11, 2006, from the World Future Society ([www.wfs.org](http://www.wfs.org)). In a 12 page report, highlighting 70 major global developments, the World Future Society has released its forecasts for 2007 and beyond. Of the top ten for 2007, these are the top five:

1. **Generation Y will migrate heavily overseas.** For the first time in the history of the United States, a significant proportion of the population will leave the US to live overseas—particularly those in the age group born between 1978 and 1995.
2. **Dwindling supplies of water in China** will impact the global economy. The most water-intensive industries and densest populations in China are in regions where water is scarcest.
3. Workers in the US will increasingly choose time over money. Nearly one-third of US workers recently polled said they would prefer more time off rather than more hours of paid employment.
4. China and India. By 2025, both countries will be stronger, wealthier, freer and more stable than they are today. India, in part because of its democratic government and relative transparency, is predicted to be the more economically viable farther out.
5. This fifth forecast, I will read to you verbatim. **“Children’s ‘nature deficit disorder’ will grow as a health threat. Children today are spending less time in direct contact with nature than did previous generations. The impacts are showing up not only in their lack of physical fitness, but also in the growing prevalence of hyperactivity and attention deficit. Studies show that immersing children in outdoor settings—away from television and video games—fosters more creative mental activity and concentration.**

### **First Ecosystem Element: Re-Connecting Children and Nature**

There is a movement emerging, and every one of you is part of it, in your own way, with your own passions, persistence, dedication, expertise and energy. **It is a movement to reconnect children and nature.**

There are some related forces, and possibly other movements at work, like the “Fair Health” movement, with its many social justice and civil rights elements. There is a new green business movement, hopefully more than a superficial fad.

Today, there are companion, possibly parallel, and maybe even convergent forces at work. There are movements emerging that all have something to do with the human-nature connection.

For now, back to where I would like to begin—**the emerging movement to reconnect children and nature**. It is grassroots. It is diverse. It is spontaneously generating and it is self-organizing. It is what author, journalist, futurist and child advocate Richard Louv calls “a doorway issue”—the issue of reconnecting children and nature gets people through a door together who might not otherwise do so.

Let me say a few quick words about Richard Louv, since I will cite his work in various ways throughout this keynote.

Rich, as perhaps everyone here knows, wrote a book that was published in 2005, titled *Last Child in the Woods: Saving Our Children from Nature Deficit Disorder*. If you've not read it, you probably have at least heard of it. Keep in mind that this is Rich's sixth or seventh book. This one has a life of its own, and its reach is growing, and growing, and growing. That is good news for all of us. The book has opened door after door after door to give voice for us all to build on its momentum, resonance, and inspiration. The messages in *Last Child in the Woods*—combined with the evidence all around us for what can be called “nature deficit disorder”—are among the energies fostering, nourishing, compelling and creating this emerging children and nature movement. For the record, Rich is quick to say that “nature deficit disorder is not a medical diagnosis, but a description of the human costs of alienation from nature.”

The children and nature movement that is emerging is common sense. It touches and resonates. We have—all of us—an immense and important set of opportunities. We, as members of this movement, can help move it along to

fundamentally change policies, lifestyles, the health and wellbeing for children now, and all of life in the future.

I don't think I need to review the data with you. A few key points are worth repeating as we all learn to get better and better about communicating the importance of nature in our lives.

Children and youth today have little direct experience with the out-of-doors.

They especially don't play in natural settings in unstructured, free-form playtime. There are always exceptions, but, on the whole, the defining experience of today's youth and children is in-doors, at home or in school, or in a car.

There are many reasons—adults' fear for their children's safety, what Richard Louv and others call, fear of "stranger danger." Fear of liability; restrictive covenants, including rules against building tree houses are signs of the time. There is even a growing movement in the United States to prevent children from running and playing on the school grounds, including during recess. One of my colleagues reports recently seeing a sign on a playground in Florida, "Children—Do Not Run." An elementary school in Wyoming recently prohibited tag at recess. The National Program for Playground Safety reports that dodge ball has been out at some schools for years, but banning games like tag is a newer development.

Parents are busy, maybe overly busy. Children need leisurely, un-scripted, genuinely playful, and exploratory hours to find the wonders in their own backyards and neighborhoods. Committed to hectic schedules and without enough support for what I call a new common sense, well-intended parents drive in circles to shuttle their children to the four walls of schools and other supervised programs with, again, little unstructured time for natural play.

And schools are often of little help—despite the best efforts of so many of you in this room and our colleagues around the world. Particularly in the last decade, with the narrow emphasis on testing, we've lost some ground. But, with this huge swell of the new common sense—this resonance to reconnect children and nature—there is hope.

There are other forces at play, as you know. A host of lifestyle changes in US society in the past 20 to 30 years has contributed to a sedentary society of youth, who, according to a recent study conducted by the Kaiser Family Foundation, are spending as much as 60 hours a week involved in electronic media.

The lifestyle changes show up in many ways—from the pervasive influence of urbanization, the electronic umbilica of cell phones and Ipods, and the diminished time for family outings in the out-of-doors.

These are only a few of the indicators of massive changes underway in the past two to three decades in the United States. Diminished health, higher stress, higher aggression, reduced cognitive and creative capacities, lower school achievement, blighted sense of efficacy, and diminished productivity are among the documented negative impacts of a disconnect and lack of direct experience with nature and natural elements in our surroundings.

Turning to the direct and documented evidence of the benefits from the child and nature connection, there are many. A variety of researchers indicate that children's cognitive flexibility and creativity are enhanced if they have the experience in childhood to problem-solve in natural settings. Beyond cognition, there are mental health benefits.

With people of all ages, the results are dramatic. People's overall health, peacefulness and general wellbeing will be enhanced to the degree that we spend some time on a regular basis in the out-of-doors. This clearly is

“preaching to the choir” in this room, but, again, we need to grow the choir. Many, many more people need to hear the good news that just opening the door and going for a walk can diminish stress and foster good health—that is, if the neighborhood is safe, and has even a modest amount of foliage and greenscapes.

So there are immediate physical payoffs for those of us who get outside, but there is obviously more. If we are in the out-of-doors, and on a regular enough basis to watch the seasonal changes, as one example, we learn about “place.” We learn about the natural cycles and changes of an ecological setting. To the extent that any of us does that on a regular basis, we are going to be more inclined to have a more complex and informed understanding of that natural system—and potentially other natural systems. We will be far more likely to care about the health of living systems over time, to make informed decisions, and to effect responsible actions.

Beyond a caring and informed public, direct experience in the out-of-doors tends to be a precursor to career choices that involve work related to everything from architecture to science to conservation. One of the many things I am worried about is the impact of the significant numbers of looming retirements on informed decision-making in all fields.

So there are many reasons for opening the doors for children to play again in the out-of-doors. The need is urgent. The benefits will be enormous, for now and in the future.

Richard Louv, in *Last Child in the Woods: Saving Our Children from Nature Deficit Disorder*, writes:

“For eons, human beings spent most of their formative years in nature. But within the space of a few decades, the way children understand and experience nature has changed radically. A child today can likely tell you about the Amazon

rain forest, but not about the last time he or she explored the woods in solitude, or lay in a field listening to the wind and watching the clouds move . . . Healing the broken bond between our young and nature is in everyone's self-interest, not only because aesthetics or justice demand it, but also because our mental, physical and spiritual health depend upon it."

An amazing array of people is embracing the book and its message—from architects to physicians, parents to CEOs. A real estate developer in California has given literally hundreds of copies of the book to clients and so are others around the country. From People magazine to National Public Radio, the book and its message has touched a chord of common sense. Rich is bringing an eloquent and powerful voice to a yearning for balance and intimacy with the natural world, while there is still time to do something about it. And, among young people, the message is inspiring HOPE and a sense of belonging, a sense of not being alone.

Here is an excerpt from an email Rich Louv received a few weeks ago from a 13 year old, which I am sharing with you with permission to do so:

"It's now twelve a.m. and I do have school tomorrow but I cannot sleep if I do not tell you what I am thinking right now. I grew up in the 90s where of course, there was a lot of technology and a lot of gadgets . . . I cannot say that I never owned any of these things when I was young. I cannot say I didn't enjoy them at the time. Thinking back upon it, even though as a kid I did enjoy spending most of my time outside, I realize that while I was playing tomagotchi, or gameboy, I was missing out on being outside. I have many friends and acquaintances. However, deep down, I find that I do not relate to them, or most people around me. . . I would much rather sit in the park than sit on the computer. . . I have a brother . . . He's actually my half brother. He and I have always had a connection. Much like me, he feels alone in the world. . . The only other whole connection I have in this world is nature. It's beautiful, it's escape, it's free, it understands me, and I

understand it, however not in words. Nature is something you must feel and see, something you must be one with. Something that, as long and hard as you think and look, does not have answers in words, but in emotion. . . I believe what my imagination tells me about the earth. For example, science class last year, we had to learn about clouds. It made me sad because . . . I don't want to know if there is water in them from reading a text book. I want to lay on some grass, look above and see the clouds, feel the earth beneath my back. All of this I felt I had to express to you because I found your book today, in the library. . . I thought to myself, I've been thinking of this, possibly I can relate to this author. See, fiction or not, I believe that many authors are the people who also feel alone in the world because of the way they think, which is why a book is a place for friends, for connection. . . Truly, thank you.”

I read *Last Child in the Woods* when it first came out. I reached out to Rich, not knowing him, to ask him to participate in a National Conservation Learning Summit held in November of 2005 at the National Conservation Training Center in Shepherdstown, West Virginia, sponsored by the Paul F-Brandwein Institute and a host of federal and non-profit organizations. We convened the Summit to address many of the issues I am raising with you. All of the advance materials, and the Summit proceedings, from video to print, are available on the Brandwein website, by the way, at [www.brandwein.org](http://www.brandwein.org).

More recently, in September of this year, a second gathering was held at the National Conservation Training Center in Shepherdstown—this one convened by Rich Louv; Rick Lemon, the Director of the National Conservation Training Center of the US Fish and Wildlife Service; and Larry Selzer, President of The Conservation Fund. It built on both the 2005 Summit and the success of Rich's message—the title, *A National Dialogue on Children and Nature*. A number of folks here, active members of NAAEE, were participants in both. The most recent event is intended to lead to a host of projects and visibility, another current in the movement to re-connect children and nature.

Martin LeBlanc, here at this conference in his role as National Youth Director for the Sierra Club, and a sponsor of this NAAEE conference, and others of us, have helped Rich found the Children & Nature Network (C&NN), a new-non-profit educational and advocacy organization. Martin and I are among the Founding Members of the Board of Directors.

The Children & Nature Network is, from the beginning, looking to fill gaps and connect the good works and resources of many, rather than inventing it all from scratch. And, may I quickly say, we are lean, just getting underway, and trying to figure out how we can be the most help without duplicating efforts. We want to coalesce, not compete. We will bring diverse players, leaders, and grassroots talents from broad-based communities of interest. We will and are bringing many folks together who don't usually enter a door together, much less sit around the same table. Throughout this growing movement, your expertise will be needed—and valued—even more than ever.

The mission of the Children & Nature Network is to give every child in every community a wide range of opportunities to experience nature directly, re-connecting children with nature's joys and lessons, its profound physical and mental bounty. The Children & Nature Network will provide a critical link between researchers and individuals, educators and organizations dedicated to children's health and wellbeing. The Network will also promote fundamental institutional change. The Network will publish, convene, communicate, and collaborate.

We will coalesce, synthesize, connect and celebrate the many good works and good people who are working to re-connect children and nature. Not at all averse to the power of communications technologies, we have established a web site, [www.cnaturenet.org](http://www.cnaturenet.org). In fact, some of the proceedings of the September National Dialogue on Children and Nature are posted on the Children & Nature Network

web site and more will be added. The site will be a powerful repository of research and resources, and will be the portal through which to provide a new news service that Rich Louv will edit. You can register to receive this free e-newsletter and news of other resources at the web site now. Though still early in formation, as I indicated, we are getting underway and will be providing regular and ongoing access to tools of all kinds.

One of our major goals is to nourish and support the non-partisan, pro-active campaign that is emerging to Leave No Child Inside. The campaign is being echoed and replicated, endorsed and championed by allies throughout the nation. It is bubbling up all over—spontaneously generating, self-organizing, as a natural phenomenon. Here are some of the places the campaign to leave no child inside is emerging: Seattle, The Bay Area, New Mexico, Connecticut, Florida, Missouri, Cleveland, Cincinnati, New England and more.

The book, *Last Child in the Woods*, has not created the children and nature movement. It is simply a force that is acting as a natural and powerful collaborative energy. It has, in every sense, unleashed a “force of nature.”

### **Second Ecosystem Element: Caring for Communities**

We can't re-connect children and nature without paying attention to the nature of communities. My husband, Bob Samples, has written a significant handful of seminal books in the past 35 or so years, including a classic, *The Metaphoric Mind*. Through our many years of collaboration, the most recent of our joint efforts is the book, *Coming Home: Community, Creativity and Consciousness*. In that book, we say, “Healthy communities are the foundation for peace in the world.” We believe that “healthy communities inspire and sustain, and make possible a future of promise for generations to come. Healthy communities are cultural and natural systems where life and learning are nourished and the actions of members enable a peaceful and sustainable future.”

One of my mentors, Founder of Common Cause and Former US Secretary for Health, Education and Welfare, John Gardner, said:

“The traditional community could boast generations of history and continuity. Only a few communities today can hope to enjoy any such heritage. The rest, if they are vital, continuously rebuild their shared culture and consciously foster the norms and values that will ensure their continued integrity.”

I have seen a heightened yearning for a sense of community during the past 20 years. There is a yearning for a sense of belonging, for a sense of place. This yearning is poignant and precious during these times in which we are bombarded with fragmenting, polarizing, divisive forces at every turn. Some are cultural forces of fragmentation; some are manifested in physical surroundings in many settings, where an integrated, comprehensive, balanced approach to community design, conservation and restoration is **not** consciously applied and, in fact, is non-existent. The characteristics of contemporary society have allowed us to separate and isolate without counterbalancing experiences to create a functioning whole out of the parts. Generational differences are in the mix as well. Many children and youth are feeling, and demonstrating, the breakdown of community health. As they lose faith and hope, everyone’s future is at risk.

Learners of all ages need knowledge, skills, attitudes, experiences and commitment to enable us to live as a community of the whole with culture and nature in balance. We need to reinvigorate a sense of community grounded in the basics of democratic practice. We need to rekindle confidence in the efficacy of individuals and groups of people working together for the common good. We need to understand how to live as individuals among others, in communities of communities, with enough sense of shared meaning in life to prevent our differences from overwhelming our commonality. Despite all the signs of stress and breakdown, I believe strongly in the power of will, efficacy, and hope. And I think, from what I am seeing with these community-based coalitions that are

forming to “Leave No Child Inside,” **this movement to re-connect children and nature can serve to strengthen the fiber of civic culture in our towns and cities, suburbs and rural regions.**

Quoting John Gardner again, he said, “The forces of disintegration have gained steadily and will prevail unless individuals see themselves as having a positive duty to nurture their community and continuously re-weave the social fabric.”

There are a variety of processes and values that tend to make that possible. Bob and I have developed a Community Building Institute program, much of which is reported in *Coming Home*. Healthy communities tend to demonstrate:

- Respectful civic discourse
- Inclusive, cross-sector communication and collaboration
- Visionary policies and practices
- Cultural and ecological harmony
- Inter-generational learning
- Sustainable practices
- Attention to the aesthetic

There are many good resources for inclusive and respectful civic discourse. The Healthy Communities movement in the US is one of many sources. Margaret Mead and many others were early contemporary champions of inter-generational learning. We need more of that, especially with an aging population and a generation of youth too removed from people and nature. I won't elaborate on either subject for now.

As in the movement to re-connect children and nature, there are some wonderful things going on that are designed to improve and sustain the health of communities. And some of these efforts have direct connections to the interconnections of ecological and human dimensions of healthy communities.

For example, one of the participants in the recent National Dialogue on Children and Nature is Dr. Gail Christopher. Gail is the Senior Vice President for Health, Women and Families at the Joint Center Health Policy Institute. The Health Policy Institute was founded in 2003 with a grant from the W.K. Kellogg Foundation. The mission of the Institute is to “ignite a Fair Health movement that gives people of color the inalienable right to equal opportunity for healthy lives.” Gail says, “Persistent, seemingly intractable health disparities call for a galvanized, consolidated effort to mobilize diverse communities for action.” Gail says that health is a “vital civil rights issue for the African American community and other communities of color.” So the Health Policy Institute has established a variety of commissions, alliances, partnerships and publications to help achieve a Fair Health movement. There are a host of exciting examples, literally in development now. For example, they have launched a Place Matters project. Working with the International City Management Association and the National Association of Counties, they are profiling relevant conditions and circumstances in counties throughout the US with the highest percentage or highest number of people of color. They are benchmarking conditions in order to achieve a goal of all residents having an equal opportunity to live healthy lives. One of Gail’s colleagues says this about the concept, Place Matters: “Your health is affected by the quality of the air you breathe, the conditions of the building you live in, or the school in your neighborhood, the safety of your neighborhood, and the stress level of your job.” One thousand counties across the US have been selected to participate—with a focus on building community leadership about health disparity issues and best practices for addressing them. I’ve read descriptions of some of the work underway, coming out of one of the early meetings held three weeks ago in Chicago. They are great—inspiring and practical—with diverse elements. One in the Mississippi Delta is attacking obesity, for example, with a focus on safe neighborhoods for walking, with paths and community gardens. Boston is looking at some similar elements, with a safe and healthy food chain in the mix. You can learn more about this and other programs at [www.jointcenter.org](http://www.jointcenter.org).

### **Third Ecosystem Element: Designing for Life**

Like the importance of re-connecting children and nature, a conscious approach to designing for life—including redevelopment of urban and suburban environments with children and nature in mind—is a common-sense, breakthrough and profoundly necessary approach to helping put everything in balance again, subject the many of us having the vision and commitment to see and effect its implementation. The new ingredient, around throughout all of evolutionary history, but given a name in the last two decades, is biophilia. The name is gaining resonance—in fact, some cache. There was a front page feature article in a section of the *New York Times* one month ago, in September of 2006, featuring homes, communities, buildings and businesses, adopting biophilic design.

In 1984, the scholar, E.O. Wilson defined biophilia as “the innate tendency to focus on life and life-like processes.” It may be thought of as a genetic, therefore inherent, desire for positive contact with nature. In 1993, Wilson and Stephen R. Kellert, Tweedy Ordway Professor Social Ecology at Yale, collaborated to edit and produce a major piece of work, *The Biophilia Hypothesis*. Through Wilson’s and Kellert’s scholarship and influence, recognition of the power of the biophilia hypothesis continues to grow. Biophilic design, put to work, is a transformative tool for helping us all to re-connect children and nature; to live healthy, peaceful, and productive lives; and to naturally re-establish the health of communities.

We should acknowledge that Dr. Kellert was recognized at this NAAEE conference, a recipient of the NAAEE’s Award for Excellent in Research. In Dr. Kellert’s latest book, *Building for Life: Designing and Understanding the Human-Nature Connection*, he describes what he calls restorative environmental design, which includes both green engineering and biophilic design. He states: “Restorative environmental design incorporates the complementary goals of minimizing harm and damage to natural systems and human health as well as

enriching the human body, mind and spirit by fostering positive experiences of nature in the built environment.”

He also says, “The human body, mind and spirit evolved in a complex matrix of interactions that to this day continues to affect our ability to think critically, to be creative, to discover, to show compassion, to care, and to realize a just and purposeful existence. As conventionally designed and developed, modern urban society has not only greatly diminished the material productivity of natural systems but also separated us from positive contact with nature as an irreplaceable source of our physical and psychological existence. Only by recognizing and harmonizing the natural and human built environments can we arrest and reverse these ominous trends and restore the biological basis for our well-being.”

Biophilic design differs from green engineering, which is also a laudable trend. Green engineering is a wonderful movement, becoming mainstream, in which low-impact, environmentally friendly technologies are used. Architects and engineers throughout the world are increasingly using such technologies, fostered in part by the “Leadership in Energy Design,” or LEED, certification that awards recognition for excellence in these areas. Green engineering is certainly a step in the right direction. It is not, however, enough.

Biophilic design holds the promise for restoring aesthetics, health, wellbeing, culture and nature in harmony in whole communities, one building, person and life space at a time, all fit together in an ecology of living diversity.

Green engineering, or what Dr. Kellert calls Low Impact Environmental Design, combined with biophilic design, including what he calls the Organic and Vernacular, are the elements of what Restorative Environmental Design. He says, “Restorative environmental design seeks to repair the relationship between nature and humanity in a world increasingly marred by environmental

impoverishment and social and psychological alienation.” Kellert has been talking, with some persistence and persuasion I think, with the US Green Building Council that developed the LEED certification to encourage them to include elements of biophilic design in their LEED certification. Now, you can have a LEED certified building that is energy-wise but still not as nourishing, stress-reducing, productivity enhancing or healthful as one that combines green engineering with biophilic design. Progress may be made in November in Denver when the US Green Building Council meets. In the meantime, more and more architects, engineers, city planners and citizens are becoming savvy about the enormous and common sense potential of “designing for life.”

Another inspiring example of leadership put to work to design for life is that of noted architect, Ed Mazria. Ed has been a visionary for decades. He has ramped up his planetary perspective in recent years. He has founded Architecture 2030, and his idea for the “2030 Challenge” was endorsed by the 78,000 member American Institute of Architects in January of 2006. The 2030 Challenge is an aggressive plan for slowing the growth rate of greenhouse emissions and reversing it over the next ten years by designing high-performance and carbon-neutral buildings. That can be done through green engineering, but can certainly be done with many more benefits if achieved through Restorative Environmental Design, incorporating both the biophilic and the green engineering. As recently as June 5, 2006, quoting from a press release, “the US Conference of Mayors adopted the 2030 Challenge for all buildings. Cities are committing to implement an immediate 50% fossil fuel greenhouse gas (GHG) emission reduction standard for all new and renovated buildings and setting benchmarks and timelines to increase the reduction standard for new buildings to carbon-neutral by 2030, meaning they will use no fossil fuel, GHG emitting energy to operate.”

Green engineering is excellent, the 2030 Challenge is outstanding, and I think combining these with biophilic design is transformative. These solutions are

accessible, attractive and make sense. They apply to individual buildings—from homes to schools to businesses. They apply to entire communities. They are among the eminently sensible changes and directional shifts that all of us have within reach to establish, and continually re-establish, the foundations for an ecology of hope.

#### **Fourth Ecosystem Element: Nourishing a Planetary Perspective**

Change is a result of consciousness. If consciousness is what we pay attention to, as neuroscientist Karl Pribram has said, then creating a shift in consciousness is as simple as paying attention to different things. It is up to each of us, and begins within each of us. My husband of 33 years, Bob Samples, has said:

“Consciousness is the dance of the spirit, the song that connects, the hope for the future.” Bob has long been a champion of the spirit, and has consistently urged all who would listen to turn to natural systems, to nature, for perspective and inspiration. He says, “We need to reground ourselves in the ways of wild ecologies . . . It is nature that will guide us to the kind of realistic, dynamic equilibrium that we need in order to heal the rifts between culture and nature.” I would add, to heal the rifts between children and nature, between communities and nature, from our homes and neighborhoods to the planet as a whole.

In the end, and for the future, we need a new common sense—and, I believe, a collective consciousness—about the big issues that will sustain us all, and the planet itself, for future generations.

There are enormous opportunities available in cultivating a world consciousness. One place to begin is with those young people, particularly in developing countries where they are taking a stand for protecting environmental quality as they work to bring their countries into more prosperous and democratic economies. Much of the leadership for achieving democracy in emerging nations has stood on a platform of both environmental quality and human rights.

One of the breakthroughs I believe we need to make is to create a whole new level of cooperation. We need an authentic and powerful change of consciousness. We have to figure out how to bring together the many like-minded people who see and sense these problems, and, if given the right opportunities and encouragement, could work together to help address them. And, we need to enfranchise those who, at the moment, think they are at odds with this thinking. Or, perhaps more important, we need to work to be open to working with those we may think we are at odds-with.

As my husband, Bob Samples, again has said, “There is no sector that can’t benefit from enlightenment.” He wants us to pay attention to what we can’t do, or can’t achieve, or can’t accomplish if we hold such preconceptions we can’t open the door to dialogue. With that as a transition—an obvious one at that—the corporate and business sectors are modeling, in increasing ways, a planetary perspective. The language of sustainability, supported by changes in consciousness and corporate practice, is moving throughout the world in some significant ways. Much more is needed, but good work is underway and is multiplying.

I have spent the last ten years in a senior role in the financial services sector, in a membership organization of 100 of the largest financial institutions in the US. The organization is called BITS, and we are the Business Strategy and Technology Group of The Financial Services Roundtable. Our members account directly for \$50.5 trillion in managed assets, \$1.1 trillion in revenue, and 2.4 million jobs in the nation’s economy. Our consortium works at the interface between emerging technologies, financial services and commerce. We foster collaboration among highly competitive organizations and individuals to serve the common good. We have focused on works that individual institutions cannot accomplish on their own—tangible things like reducing fraud and maintaining the safety and soundness of the financial services critical infrastructure in the face of

human and natural disruptions, from 9/11 to Katrina. One of our members, ABN AMRO, recently received the World Environment Center's 2006 Gold Medal for International Corporate Achievement in Sustainable Development, in part because of its role in creating, implementing and encouraging others to implement the Equator Principles. The Equator Principles are a set of guidelines used to foster responsible lending and project financing, with a fundamental commitment to ecologically and socially responsible impacts. Today, more than 40 financial institutions have adopted these Principles.

In terms of my present personal involvement on a global scale, I am serving a multiple-year appointment as Co-Chair, with Hans Van Ginkel, Rector of the United Nations University, of the Education for Sustainable Development Working Group of the World Conservation Union's Commission on Education and Communication ([www.iucn.org](http://www.iucn.org)). You probably know that the World Conservation Union was established in 1948. More than 80 nations, more than 1000 organizations, and thousands of individuals are members. I am a member of a 20 person Steering Committee for the Commission on Education and Communication. There are six Commissions:

- **Species Survival Commission** advises the Union on the technical aspects of species conservation and mobilizes action for those species that are threatened with extinction.
- **World Commission on Protected Areas** promotes the establishment and effective management of a worldwide representative network of terrestrial and marine protected areas.
- **Commission on Environmental Law** advances environmental law by developing new legal concepts and instruments, and by building the capacity of societies to employ environmental law for conservation and sustainable development.
- **Commission on Environmental, Economic and Social Policy** provides expertise and policy advice on economic and social factors for the conservation and sustainable use of biological diversity.

- **Commission on Ecosystem Management** provides expert guidance on integrated ecosystem approaches to the management of natural and modified ecosystems.
- Finally, the **Commission on Education and Communication**, which Keith Wheeler of the United States chairs, and for which I serve as a member of the Steering Committee, “champions the strategic use of communication and education to empower and educate stakeholders for the sustainable use of natural resources.” Our work is cross-cutting, so, whereas we have projects of the Commission, we also serve as a communications and education resource for the other five Commissions and for the Secretariat of the World Conservation Union.

The Commission recently launched a World Conservation Learning Network, chaired by Dr. Bradley Smith, Dean of Huxley College of the Environment, Western Washington University. The World Conservation Learning Network is dedicated to connecting universities, non-profit organizations, governments, and business in regions of the world with a focus on Poverty Reduction through Sustainable Development.

On behalf of Keith and the other members of the Secretariat and the Commissions of the World Conservation Union, we invite all of you—including those already involved and active—to use the resources of the IUCN, to share them, and to develop—as was once considered I believe—a strategic relationship between NAAEE and the IUCN. In candor, there are many US participants in the Commissions. We certainly encourage anyone with interest to apply to become a member, and especially urge those of you representing other areas of the world to get engaged. A strategic planning group associated with the Steering Committee for the Commission on Education and Communication is meeting in a few weeks in Switzerland at the IUCN’s world headquarters in Gland. We are focusing on a strategy to mobilize knowledge management and change management processes. This will be designed to employ and leverage

the work and wisdom of good people throughout the world even more effectively. To learn more about this, and all the work underway through the Commission on Education and Communication, you can register at the CEC's interactive web site. Start with [iucn.org](http://iucn.org), and then click on the CEC logo to start the process. Although I am relatively new to work with the organization, IUCN has been doing good work for a long while, and, in fact, is the only NGO with an observer's seat at the United Nations. There is much more on the horizon, with the next World Congress of the IUCN scheduled for Barcelona in 2008.

### **Our Living Legacy**

There is, however, a time urgency involved in addressing all of these issues and in implementing the strategies I am suggesting today. A year ago I said that I believe we have one decade to turn this around, one decade to make a necessary difference. Lately, I think we have five years to lay the groundwork and mount the change. Thank you for what each of you has done, and will continue to do in your own way—with, as Pete Seeger told us Wednesday night at this NAAEE conference, “love, wisdom and courage.” And, he said, “Miracles do happen.”

Jeffrey Sachs, scholar and economist, closes his book, *The End of Poverty: How We Can Make It Happen in Our Lifetime*, with this statement:

“Let the future say of our generation that we sent forth mighty currents of hope, and that we worked together to heal the world.”

I will tell you personally, from the depths of my heart, that I am going to do whatever I can to turn this around, joined at the heart with you and others, to reconnect children and nature, to make connections for civic health, to encourage biophilic and restorative environmental design, to foster collaboration among and within diverse sectors and across communities, and to actively spread the word about ways to alleviate poverty on the planet through sustainable development and informed economics. I don't want our generation to be the one that truly left

the world far worse than when we found it. I want ours to be a generation that left a legacy of leadership and an Ecology of Hope.

\*\*\*\*\*

## **Resources**

### ***Books***

*Last Child in the Woods: Saving Our Children from Nature Deficit Disorder*, by Richard Louv. Chapel Hill: Algonquin Books, 2005.

*Building for Life: Designing and Understanding the Human-Nature Connection*, by Stephen R. Kellert. Washington, D.C.: Island Press, 2005.

*Coming Home: Community, Creativity and Consciousness*, by Cheryl Charles and Bob Samples. Fawnskin, CA: Personhood Press, 2004.

*The End of Poverty: How We Can Make It Happen in Our Lifetime*, by Jeffrey Sachs. New York: The Penguin Group, 2005.

### ***Web Sites***

Paul F-Brandwein Institute: [www.brandwein.org](http://www.brandwein.org)

Children & Nature Network: [www.cnaturenet.org](http://www.cnaturenet.org)

Hawksong Associates (Cheryl Charles and Bob Samples):  
[www.hawksongassociates.com](http://www.hawksongassociates.com)

Health Policy Institute: [www.jointcenter.org](http://www.jointcenter.org)

World Future Society: [www.wfs.org](http://www.wfs.org)