

Conserving Land; Preserving Human Health

Evidence suggests that children and adults benefit so much from contact with nature that land conservation can now be viewed as a public health strategy

by Howard Frumkin, M.D., and Richard Louv

Public health professionals know

that protecting watersheds is one of the best ways to assure clean, safe drinking water—so protecting the sources of clean water protects public health. Clean air is also part of a healthy, wholesome environment. Air pollutants contribute to cardiovascular disease, respiratory disease and allergies. Therefore, protecting air quality is protecting public health.



What about land? Do people benefit from parks and green spaces? When we protect land, do we protect public health? Intuition, experience and theory suggest the answer is yes.

People are drawn to gardens, forests and other natural spots for recreation and for vacations. Homes near parks typically gain in value. The designers and operators of hotels, spas and golf courses know that beautiful grounds attract customers. In the words of University of Michigan psychologist Rachel Kaplan, “Nature matters to people. Big trees and small trees, glistening water, chirping birds, budding bushes, colorful flowers—these are important ingredients in a good life.”

This intuition is not new. Henry David Thoreau wrote of the “tonic of wilderness.” A century ago, John Muir observed that “Thousands of tired, nerve-shaken, over-civilized people are beginning to find out that going to the mountains is going home; that wilderness is a necessity; and that mountain parks and reservations are useful not only as fountains of timber and irrigating rivers, but as fountains of life.”

A theoretical basis for the notion that nature contact is good for health has been expanding. In 1984,



Harvard biologist E.O. Wilson introduced the concept of biophilia, “the innately emotional affiliation of human beings to other living organisms.” Wilson pointed to the millennia of human and prehuman history, all embedded in natural settings, and suggested that we still carry affinities and preferences from that past. Building on this theory, others have suggested an affinity for nature that goes beyond

living things to include streams, ocean waves and wind.

More recently, environmental psychologists Rachel and Stephen Kaplan have demonstrated that contact with nature restores attention, and promotes recovery from mental fatigue and the restoration of mental focus. They attribute these beneficial qualities to the sense of fascination, of being immersed “in a whole other world,” and to other influences of the natural world.

From Theory to Evidence

In addition to intuition and theory, we now have evidence. And increasingly the evidence suggests that people benefit so much from contact with nature that land conservation can now be viewed as a public health strategy. What does the evidence show?

Some of the most recent studies and reports pertain to children at play. Playtime—especially unstructured, imaginative, exploratory play—is increasingly recognized as an essential component of wholesome child development. Play in natural settings seems to offer special benefits. For one, children are more physically active when they are outside—a boon at a time of sedentary lifestyles and epidemic obesity. And studies at the University of Illinois show that children with Attention-Deficit Disorder have fewer symptoms,

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and enhanced ability to focus, after outdoor activities such as camping and fishing—when compared to indoor activities such as doing homework and playing video games. Anthropologists, psychologists and others have described the special role of nature in children’s developing imagination and sense of place.

Adults, too, seem to benefit from “recess” in natural settings. Researchers in England and Sweden

almost one full day), less need for pain medications, and fewer negative comments in the nurses’ notes, compared to patients with brick views. In another study, patients undergoing bronchoscopy (a procedure that involves inserting a fiber-optic tube into the lungs) were randomly assigned to receive either sedation, or sedation plus nature contact—in this case a mural of a mountain stream in a spring meadow, and a continuous tape of complementary nature sounds (e.g., water in a stream or birds chirping). The patients with nature contact had substantially better pain control.

In fact, the idea of “healing gardens” in hospitals, which dates back many centuries, may reflect longstanding knowledge that contact with nature is therapeutic, not only for patients but also for family, friends and health professionals. Horticultural therapy offers patients the chance to work with plants, and research is beginning to show benefits for heart disease patients, dementia patients and others.

Another line of evidence comes from wilderness experiences—from organized programs such as the National Outdoor Leadership School and Outward Bound, and from less formal hiking and camping trips. Sometimes these are used therapeutically for psychological disorders, developmental and cognitive disabilities, cancer and other conditions. But healthy people seem to benefit as well. For example, inner-city children show increases in self-esteem and well-being after spending the summer in rural camps. Adults who participate in wilderness excursions describe “an increased sense of aliveness, well-being and energy,” and note that the experience helps them make healthier lifestyle choices afterwards.

New Strategies for Promoting Public Health

Nature contact yields surprisingly broad benefits. This contact may occur on a very small scale—plants in the workplace or trees outside the apartment building—



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have found that joggers who exercise in a natural green setting with trees, foliage and landscape views, feel more restored, and less anxious, angry and depressed than people who burn the same amount of calories in gyms or other built settings. Research is continuing into what is called “green exercise.”

Fascinating evidence also comes from studies of medical treatment. An often-quoted 1984 study took advantage of an inadvertent architectural experiment. On the surgical floors of a 200-bed suburban Pennsylvania hospital, some rooms faced a stand of deciduous trees, while others faced a brown brick wall, and patients were essentially randomly assigned to one or the other kind of room after their surgery. Patients in rooms with tree views had shorter hospitalizations (on average, by

or it may occur on a larger scale—a nearby park, a riparian corridor in a city or a wilderness area. In a remarkable body of research in inner-city housing projects in Chicago, investigators found that the presence of trees outside apartment buildings predicted less procrastination, better coping skills, and less severe assessment of their problems among women, greater self-discipline among girls, less crime, and less violence and better social relationships. In two recent nationwide surveys in Holland, people who lived within one to three kilometers of green space reported significantly better health than those without such access, after researchers controlled for socioeconomic status, age and other factors. Overall, contact with nature seems an important component of a healthy, wholesome life.

For these reasons, in the same way that protecting water and protecting air are strategies for promoting public health, protecting natural landscapes can be seen as a powerful form of preventive medicine. Of course, there is still much we need to learn, such as what kinds of nature contact are most beneficial to health, how much contact is needed and how to measure that, and what groups of people benefit most.

But we know enough to act. We need to promote land conservation as a way to advance public health, both for people today and for future generations. In an increasingly urbanized society, we need to envision, design and create “green cities,” where urban dwellers have nearby access to parks and green spaces.

We need to promote dialogue among people from different ethnic cultures, as well as those individuals who work separately and speak different professional languages, such as pediatricians and landscape architects; public health professionals and park and recreation officials; bike and pedestrian advocates; and arborists, hunters, anglers, residential developers and environmentalists. We need imaginative social policy, such as the initiative recently announced by New Mexico’s Parks Division and Public Education Department that will bring most of the

state’s fifth-graders to a state or national park or wilderness area during the 2007–08 school year.

In developing these initiatives, we need to be especially mindful of the neediest among us—children, poor people, people of color, people with disabilities, and others who may have the least access to natural settings, and who may need it the most.

More than anything, we need a vision of healthy,



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wholesome places, a vision that extends from densely settled cities to remote rural spreads, from the present to the future, from the most fortunate among us to the least fortunate, from the youngest child to the oldest adult. Conservation of land is central to this vision. Such places will promote our health, enhance our well-being, nourish our spirits, and steward the beauty and resources of the natural world. 🌿

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