



6. CHILDREN IN NATURE

THE NEED of children to interact with nature as a necessary part of their healthy development.

The Baby Boomers may have been the last generation of “free range kids,” allowed to roam without supervision, play in nearby woods creeks, climb trees, build forts, and generally explore nature at will. In recent years, a sharp decline in unstructured outdoor play among children has sparked a new concern in Tennessee about getting children back in touch with nature.

Richard Louv’s 2005 book *Last Child in the Woods: Saving Our Children from Nature Deficit Disorder* presents evidence that the current generation of children is growing up in ways that are very different from those of the past. Louv cites an extensive body of research showing that unstructured play in nature is essential for a child’s healthy physical and emotional development and that such exposure has become increasingly less common for the current generation of children. The

result - what Louv calls “nature-deficit disorder” - is reflected in the rising incidence of a host of disorders in the young: ADD/ADHA, teen depression and suicide, and obesity. On the other side of the coin, he offers an impressive list of creative thinkers whose formative years were shaped by a deep fascination with nature and wildlife.

Louv cites a number of reasons for the fundamental change in the way children are growing up today:

- More Americans live in suburban areas, where the native vegetation has been replaced by lawns, and where they have to drive to get to a park or a natural environment. In addition, existing parks often discourage visitors from leaving the trail, climbing trees, etc.
- Children are kept inside by parents fearful of traffic or sexual predators, or of nature itself, whereas previous generations were allowed to roam freely.
- Outdoor play is more often offered in the form of organized sports, which take place on grass fields, not in the natural environment of a creek or woodlot.

Another major cause is that children today are simply more interested in other things. In the 2009 TRAB Survey, 48% of parents reported that computers, television, and electronic games were the primary reason their children did not spend more time outdoors. Screen viewing has come to dominate the leisure hours of the young. According to the Kaiser Family Foundation (KFF):

- Two-thirds of infants and toddlers watch a screen an average of 2 hours a day.
- Children under age 6 watch an average of about 2 hours of screen media a day, primarily TV and videos or DVDs.
- Children and teens 8 to 18 years spend nearly 4 hours a day in front of a TV screen and almost 2 additional hours on the computer (outside of schoolwork) and playing video games.

For adults who grew up playing outside, it can be hard to imagine why any child would prefer to stay indoors and stare at a screen. In the TRAC discussions of this problem, a general consensus arose that entertainment media are simply more immediately engaging than nature and that recreation providers need to do a better job of competing for the interest of young people. Research into television and computer use points to far more disturbing implications. Studies reported in *Scientific American* (“Television Addiction

Is No Mere Metaphor,” February, 2002) suggest that heavy television viewing has many symptoms in common with addiction and substance abuse, including failed attempts to quit and withdrawal symptoms. Reported findings include:

- TV’s addictive power springs from our biological “orienting response”—an instinctive reaction to any sudden or novel stimulus. This involuntary physiological response is part of our evolutionary sensitivity to movement and potential predatory threats. The basic techniques of television production - cuts, edits, zooms, pans, sudden noises - activate the orienting response, thereby holding attention on the screen, independent of the actual program content.
- In Gallup polls in 1992 and 1999, seven out of 10 teenagers said they spent too much time watching TV.
- Survey participants commonly reflect that television has somehow absorbed or sucked out their energy, leaving them depleted.
- Researchers studied a mountain community that had no television until cable finally arrived. Over time, both adults and children in the town became less creative in problem solving, less able to persevere at tasks, and less tolerant of unstructured time.
- Computer games create a strong reinforcement loop by minutely increasing in difficulty along with the increasing ability of the player, providing a near-perfect match of challenge to skill.
- For a growing number of people, the life they lead online may often seem more important, more immediate and more intense than the life they lead face-to-face.

Television addiction may also be a major factor in the recreation behavior of adults as well as the young. The 2009 TRAB Survey found that 50% of Tennesseans feel they do not have enough time to participate more in outdoor recreation; yet, judging from other findings, they still find the time for several hours of television watching per day.

Nature is the ultimate non-programmable reality; it does not respond to undo buttons or remote controls. Louv suggests that, having missed the chance to interact and bond with nature as children, the next generation of adults may neither know nor care about such things as the environment, biodiversity, or sustainability. At a moment in history when mankind is urgently called upon to become more sensitive to the needs of the planet, nature deficit disorder could produce a whole generation of future adults who may be unprepared to rise to the challenge.

What the parks and recreation community clearly can do is make interaction with nature a regular part of the lives young people. This plan addresses two strategies for accomplishing that goal:

- Parks and nature centers can provide opportunities for hands-on environmental study as a key component of structured academic learning. This strategy is described in this plan's initiative on **Environmental Education**.
- Parks and communities can find new ways to encourage unstructured play in natural settings, especially for younger children while they are forming their first impressions of nature. Strategies for doing so are discussed in this section of the plan.

Integrating Nature into Parks

The 2009 TRAB Survey found that, for 68% of Tennessee children, outdoor play occurred most often in a neighborhood park. This finding points to park design as a critical factor in addressing nature deficits in children. Almost any community park can be retrofitted to make it a place where unstructured nature play can occur.

The first step is to make parks places that attract more frequent visits, because simply putting more natural features in a park does not ensure that they will be used. A 2008 survey of community park design research for the President's Council on Physical Fitness and Sports noted that "an emerging trend in community park design is to include a wide variety of features

(trails, skate parks, picnic pavilions, boulder climbing areas, tennis courts, playgrounds, and open land) in close proximity to one another in order to promote intergenerational park activity." This trend recognizes the fact that different age groups are attracted to different components of a park. Young children gravitate toward playground equipment, because it allows them to do physical activities like climbing, sliding, and swinging that they generally cannot do at home. Once introduced to a neighborhood playground, a child will often beg to be taken back. For older children, the hooks can be features like skate parks, climbing areas, and mountain bike trails, which can offer a sense of adventure. And of course sports fields draw large numbers of children to parks as well. For parents, the presence of shade trees, comfortable seating, and attractive planted areas close to where children play can make them more likely to frequent a local park, and bring their children with them.

Once these hooks are present close together in a local park, the potential has been created to enrich the child's experience with elements of nature. Research into the integration of nature into parks at North Carolina State University suggests that, again, good design is the key to success. This research has resulted in a set of design guidelines for what are called "naturalized playgrounds."

The naturalized playground movement represents a dramatic shift away from the traditional industrial playground based solely on manufactured equipment and artificial surfaces. By combining playground equipment with natural elements, this new model provides a greater diversity of play opportunities and meets the needs of a broader range of children and their families. This integration of natural and built components has been found to create richer play experiences, to elicit higher levels of physical activity, and to attract more children to use parks. These playgrounds often include curvy pathways to connect active play for children and provide social strolling by adults. One additional benefit is to provide a resource for nature-based professionals

to offer outdoor educational programs. Naturalized playgrounds can produce more unstructured play in nature in two ways: playground equipment serves as the initial attractor for children, who then transition into nature play; and the natural environments are more attractive and comfortable for adults, encouraging caregivers to spend more time outdoors with their children. This new playground model represents a promising way to address the nature deficit problem in younger children.

This model can be applied to larger parks as well. A traditional park design focus on large expanses of lawn has tended to relegate natural elements to small flower beds or to the periphery, when it has not eliminated them altogether. By integrating natural elements in closer proximity to developed features, and designing them as places to play, not just to look at, parks can be more successful in luring young people into nature play experiences. Even highly developed sports fields can serve this purpose by offering younger children places to play nearby in nature while an older sibling is competing on the field.

A critical question in integrating nature into park design is: what kinds of natural elements are most effective in attracting and holding the interest of children? Findings of the National Survey of Recreation and the Environment may suggest an answer. Though this survey does not include children, it does reveal high and strongly increasing interest in viewing wildlife among adults. In the latest version of this survey, 55% of Tennesseans reported participating in wildlife observation, a figure that has risen by 22% since the 2003 data. Watching wildlife was, in fact, the highest participation activity of all forms of interaction with nature in the survey. What is true for adults in this case could easily be as true or more so for children. Indeed, the presence of animals may be the single aspect of nature most appealing to children.

Micro-Habitat Enhancement

Discovering a praying mantis, a Luna moth, or a caterpillar, watching a bird build a nest, catching a frog or turtle, seeing lightning bugs appear at dusk – these



are experiences that can engage children intensely. For that reason, the value of a neighborhood park or any community setting as a place to experience nature can depend in a major way on how well it functions as a micro-habitat that supports a diverse animal population. As with any habitat, a micro-habitat will contain a diversity of animals only if it has appropriate food sources.

The complex evolutionary relationships between insects and plants are often unappreciated. It is easy to assume that bugs simply feed on whatever leaves are available. In fact, evolutionary survival has dictated that most plant species have had to develop chemical and other defenses to make them unappetizing or even poisonous to most insects. Insects have responded with specialized adaptations to these defenses, giving each species the ability to tolerate the leaves of a limited number of plant species. Monarch butterfly caterpillars, for example, are specialized to feed on milkweed. Thus a particular insect will be present in a micro-habitat only if one of its particular food sources is present.

Plant and tree species that evolved on other continents, even in other regions of North America, cannot provide a functioning habitat, because the local insect populations have not evolved the ability to eat them. Bugs are the base of the habitat food pyramid, providing sustenance for birds – especially during nesting season – as well as frogs, lizards, small mammals, and so forth. A park that does not provide food for local insects may look beautiful but be a sterile desert from a wildlife perspective.

A park's value as a natural habitat entirely depends, therefore, on whether it contains locally native species of plants and trees; and the more varieties it contains, the greater the park's biodiversity. Flowering native plants can be just as showy as their foreign cousins, and a strategic plant selection can provide year-round food sources to attract local animals and migrating birds in all seasons.

Recognizing the connection between native plants and biodiversity, TDEC has instituted a native-plants-

only policy for the State Parks. This is a practice that can also enhance the value of local parks as places for children to interact with nature. Applying it to urban street trees as well can help make an entire community a haven for wildlife.

In recent years a small native plant industry has become established in Tennessee, but its ability to provide for the needs of local parks and communities is limited. To improve the availability and competitiveness of native plant nurseries, a model to consider is Missouri's Grow Native! Program. This is a joint program of the state's Departments of Conservation and Agriculture designed to increase the demand for native plants. The program also encourages farmers to grow and market native plants as a way to increase profitability.

Tennessee's ECO Coalition

In 2008 an organization was formed in Tennessee to address the issues raised by Richard Louv's book. The Every Child Outdoors-Tennessee (ECO) coalition has set out to make unstructured play in nature a part of growing up in Tennessee. The organization was formed by a stakeholders group made up of members from the Tennessee Environmental Education Association, Tennessee State Parks, Metro Nashville Parks and Recreation-Warner Parks Nature Center, the Tennessee Wildlife Federation, the Tennessee Wildlife Resources Agency and more than 100 other groups, including local, state and national organizations and agencies, governments, non-profits and businesses representing health, natural resource, education, hunting and fishing, recreation and youth stakeholders. The goals of this organization include:

- To raise awareness of the benefit of outdoor experiences for children through media campaigns.
- To provide resources to increase children's outdoor experiences by creating a clearinghouse and a network of partnerships.
- To increase outdoor learning and stewardship opportunities for children through partnerships with parks and non-profit groups.

- To improve children’s health by promoting opportunities for outdoor experiences.
- To expand access to the outdoors for children through school and community infrastructure planning, development and policy.

ECO Centers

Periodic trips to a State Park can complement a child’s regular encounters with nature in a local park. State Parks offer outstanding opportunities for children to expand a budding interest in nature into new envi-



ronments, but their parents have to be willing to take them there. The 2009 TRAB Survey asked respondents about reasons they might be reluctant to visit a park, and found a remarkably high level of fear of ticks, biting and stinging insects and even of the woods themselves. Fully 75% of women expressed one or more of these fears as a reason for staying away. This can be a major deterrent, because, as the saying goes, “if Mama ain’t happy, ain’t nobody happy.” It appears that overcoming nature deficits in children may require more attention to helping parents feel more confident in the natural environment.

TDEC is currently in the early stages of addressing this point. Paris Landing State Park, in partnership with the Tennessee ECO Coalition, is exploring a proposal to develop an ECO Center at the former Camp Hazelwood, located near the park on Kentucky Lake. The purpose of this center will be to help children and parents develop outdoor skills and knowledge needed to make them comfortable in the woods. Skills to be taught will include wildlife observation and nature study, way-finding, camping, outdoor cooking, water sports, fishing, hunting, adventure recreation, and clothing and equipment. What makes the ECO center concept unique is that it blends the functions of a nature center with outdoor skills training. Individuals or families will come to the center for weekends or longer programs. The camp infrastructure makes this an ideal location for a residential program. If successful, this center may be the pilot project for additional ECO centers in other parts of the state.

The ECO Center concept may have promise for closing a critical gap that exists between people and nature in Tennessee. Becoming comfortable in nature is a long process of acquiring skills and building confidence, usually with the help of a parent, friend, or mentor. A child without access to that kind of influence has virtually no opportunity to develop the necessary skills, and as a result is more likely to view the natural world as alien and possibly dangerous. An ECO center has the potential to introduce a lifelong appreciation of

getting out in nature to many young people, and can especially benefit urban minority youth.

Pittsburgh’s Walls Are Bad program offers a model for extending this concept to reach more people across the state. That program works to encourage greater participation in outdoor recreation by matching up individuals with non-profit organizations that provide trips and training in a wide variety of outdoor pursuits.

Farms as Nature Centers

Tennessee’s farmland has great potential for helping to connect children with nature. Every county in the state has family farms that contain uncultivated natural habitat areas, such as woodlots, streams and creeks, caves, springs, ponds, and wetlands. Cultivated areas, pastures, and fallow fields also provide habitat for birds, insects, and other creatures. For many communities that do not have a natural-habitat park, nearby farms are the only places close to home where families might have an opportunity for interaction with nature. As natural magnets for children, farms have the ability to attract visitors, but they may often need technical assistance in creating safe, meaningful experiences for the public. The Department of Agriculture’s Pick Tennessee Products program promotes various kinds of agri-tourism enterprises as a way to help farmers become more profitable. Adding a Farm Nature Center component to this program could provide important new opportunities for Tennessee’s families and children.

2015 Action Plan

TDEC, through its PARTAS service, should provide local parks and recreation departments with technical assistance and research-based guidelines for designing new parks and playgrounds or retrofitting existing ones to incorporate opportunities for unstructured play in nature. Guidelines should include best uses of native plants to provide viable habitats. PARTAS should seek to partner with the ECO Coalition in this effort.

TDEC should also consider placing a priority in its local park grants program on projects that integrate

natural micro-habitat areas in close proximity with other park and playground features.

TDEC and the Department of Agriculture should establish a partnership to encourage increased use of native plants by parks and communities and greater availability and competitiveness of native plant nurseries in Tennessee, following the Missouri Grow Wild! model. This effort should include outreach to urban foresters to encourage the use of appropriate native street trees.

Paris Landing State Park and the ECO Coalition should pursue the proposal to develop Tennessee's first ECO Center on Kentucky Lake. If this model proves successful, it should be expanded to other sites across the state.

TDEC, TWRA, the Tennessee Wildlife Federation, and other members of the ECO-Tennessee coalition should urge passage of the Tennessee Children's Outdoor Bill of Rights and a Governor's Proclamation during the 2010 General Assembly.

The Outdoor Recreation and Conservation Education section within the State Parks Resource Management Division should take the lead in Tennessee in establishing outreach programs with schools, inner city neighborhoods and community centers to re-connect more children and families with the natural world.

2020 Vision

Tennessee's children will have high-quality, close-to-home opportunities for unstructured play in nature; families will become more engaged in nature and the outdoors; and school children will learn to appreciate the natural world and the need for environmental stewardship.

Coordination Links

Tennessee Recreation One-Stop. The website will provide easily accessible information on local opportunities for families to expose their children to interaction with nature, including naturalized playgrounds and parks, local greenways, and stream and creek play places. It will also contain social networking links to organiza-

tions that provide nature-based outdoor recreation and training for adults and families

Quality Growth. The Quality Growth Toolbox will include guidelines for incorporating wildlife habitat corridors into community design through the use of native plants in parks and street trees. The Toolbox will also encourage communities to provide public access to streams and creeks, making additional opportunities for play in nature available.

Recreational Waters. Providing greater public access to local streams and creeks will make more opportunities available for meaningful, close-to-home interactions with nature.

Tennessee Children's Outdoor Bill of Rights

With recent concerns about youth detachment from the outdoors, lack of physical exercise and increased health risks, ECO-Tennessee has drafted a Tennessee Children's Outdoor Bill of Rights, which defines a list of experiences from which every child in Tennessee would benefit.

The Tennessee Children's Outdoor Bill of Rights states that every Tennessee child, before entering high school, should have the opportunity to:

- Walk in the woods
- Play outside
- Explore nature
- Watch wildlife
- Grow a garden
- Splash in the water
- Camp under the stars
- Learn to swim
- Climb a tree
- Go fishing
- Fly a kite
- Visit a farm