

Synopsis of 2010 Research Papers

THE KEY BENEFITS



National Recreation
and Park Association

Parks Offer a Wide Array of Benefits Beyond Just Physical

Across the country in municipalities large and small, park and recreation advocates and administrators face a contradiction for which the solution calls for compelling data. The situation facing U.S. parks is stark: A societal resource more popular and beneficial than at any time in history is pitted against those who would cut funding to these very resources. Until recently, much of what we know in support of parks was either anecdotal, dated, or too geographically diverse to sway municipal decision makers. It's therefore essential to have current, vetted information.

The following report summarizes the key categories in which parks and recreation contribute to building of healthy, vibrant communities. This white paper outlines in six main areas the latest research into the benefits provided by parks: physical health, mental health, social functioning, youth development, environment, and economic impact. A guide to the full sourcing for this report appears at the end of this report.



Physical Health

More than one-third of adults in this country are clinically obese and the statistics for children are just as grim—one third of American children are overweight and one in six is obese. Obese children are two to three times more likely to be hospitalized. It's an epidemic with complex aspects. Yet, it's clear that increased physical activity is an important part of the solution. Recognizing the importance of physical activity, First Lady Michelle Obama launched "Let's Move Outside," a campaign to combat childhood obesity and promote family health. The campaign helps families locate parks and plan physical activities.



Leisure is the part of life where the most physical activity should occur. While exercise trends come and go, people tend to stick with physical activities that they enjoy most. Parks provide the venues for these activities—organized sports, running, biking, gardening, hiking, swimming, among many others.

Multiple studies indicate that time outdoors is the strongest correlate of children's physical activity. However, many children are deprived of outdoor time for lack of sufficient local options. One-third of Americans say that there are not enough playgrounds in their community to serve the number of children who live there. More so in poorer communities, where many residents don't own cars, and thus face more obstacles in traveling to parks. A study of California youth found that one in four reported having no access to a safe park. Low-income youth without access to a safe park were significantly more likely to be physically inactive.

Parks play a key role in the well being of seniors. A study of elderly residents of Tokyo found that those living in neighborhoods with walkable green spaces lived longer and reported better functional status than those in less green neighborhoods. A study of 500 older adults in Portland, Oregon, found that greater availability of local facilities and green space resulted in higher levels of basic physical activity. An elderly woman credited her community garden in Florida with giving her the will to live again.

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Benefits can be derived just from a lasting view of nature. In some cases, a green environment can provide physiological benefits beyond those derived directly from physical activity. A study of glucose levels in diabetic individuals revealed that exposure to nature has a unique impact on physical health: Diabetic individuals taking 30-minute walks in a forest experienced lowered blood glucose levels far more than the same amount of time spent

doing physical activity in other settings. The half-hour forest walks resulted in larger drops in blood glucose than three hours of cycling. Studies in hospitals have shown that merely enjoying a view of nature can provide physical benefits. Patients in hospital rooms with a view of nature generally recover more quickly, require less pain medication, and have fewer post-surgical complications than patients in rooms with urban views. Exposure to nature clearly has a soothing effect on our bodies, and parks provide this.

Mental Health

In addition to enhancing physical health, the presence of neighborhood parks and tree-lined streets promotes psychological well-being. Numerous studies demonstrate that access to green views and environments can improve cognitive functioning, impulse control, resilience to stressful life events, and overall mental health. Conversely, studies report a link between low nature access with increases in deficit/hyperactivity disorder (ADHD), clinical depression, stress, and anxiety.

In addition to the anecdotal calming benefits of a walk in the park, there's ample scientific evidence reinforcing the notion that green access reduces stress and anxiety. Scientists in the Netherlands examined the prevalence of anxiety disorders in more than 345,000 residents and found that people who lived in residential areas with the least green spaces had a 44 percent higher rate of physician-diagnosed anxiety disorders than people who lived in the greenest residential areas. The effect was strongest among those most likely to spend their time near home, including children and those with low levels of education and income.



Time spent in the lushness of green environments also reduces sadness and depression. In the Dutch study, the prevalence of physician-diagnosed depression was 33 percent higher in the residential areas with the fewest green spaces, compared to the neighborhoods with the most.

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Access to parks benefits cognitive skills, such as concentration and the ability to deal with major life challenges. Even a small amount of greenery can have a major impact. In a large-scale study conducted in the Robert Taylor Houses in inner-city Chicago, researchers found

a variety of cognitive advantages among residents whose buildings had nearby trees and grass. These residents reported less procrastination in facing major challenges and rated such challenges as less severe. Follow-up tests showed that the enhanced effectiveness of residents in greener buildings was caused by an improved ability to concentrate.

One of the most significant groups to benefit from greenery are children with ADHD. In one study, researchers found that a 20-minute walk in an urban park benefited concentration performance of children with ADHD. The performance boost was at least as large as the peak performance boost shown for two widely prescribed ADHD medications. Researchers aren't the only ones who have tracked these benefits. In a nationwide survey, parents of kids with ADHD rated after-school activities in outdoor settings as significantly more helpful than those not in these settings.

Social Function

Throughout all of history, human beings have lived in or around nature. In 1900, 87 percent of the world's population still lived in rural areas, and it was only in the last 100 years that people have migrated to cities. While cities provide their residents with economic, educational, and cultural benefits, their design often overlooks the fact that human beings are hardwired to live closely with nature.



One of the best examples of this is New York City's Central Park. In the mid-1800s, the New York City population quadrupled in size. Residents were clamoring for as much green space as possible to counteract the congestion of city life. From this outcry for a public space Central Park was born. That was the United States in the 1800s—in the 21st Century, parks and green space are all the more urgently needed.

Cities are here to stay, but it's important for city residents to still feel as connected as possible to the natural environment. When people are connected to nature, it contributes to feeling less isolated and less focused on themselves. As a result, they become more eager to form connections with their neighbors. A greater sense of community and social ties emerge, as do increases in generosity, trust, and civic-mindedness. Loneliness, aggression, and crime decrease.

Researchers studying a Chicago housing project learned that residents whose buildings had views of trees and grass exhibited lower levels of aggression and violence than their neighbors who only had views of concrete and asphalt. Another study conducted in an inner-city Chicago low-rise apartment development found similar results in buildings with

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more vegetation: lower rates of homicide, assault, robbery, theft, burglary, and arson. Buildings with high levels of vegetation had 52 percent fewer total crimes than buildings with low levels of vegetation.

Studies of both housing projects found that common spaces with trees and grass received far more use than common spaces without them—leading to an increase in neighborhood social ties among the people sharing the common space. People living adjacent to green spaces knew more of their neighbors, reported a stronger feeling of belonging, and were more supportive of each other.

Youth Development

Cities across the country recognize their responsibility to play a role in nurturing the development of their adolescent residents in the form of building cognitive, social, and emotional skills that will allow them to contribute to society as they grow older. Many municipalities are recognizing that resources can be more effectively utilized if youth are perceived as resources to invest in, rather than problems to be policed.



In inner-city areas, effective youth programs provide positive environments when the only other alternatives can be devastating. Community violence occurs less frequently among youth who live in neighborhoods rich in youth-serving organizations. Students who participate in at least one hour of extracurricular activities per week are 49 percent less likely to use drugs and 37 percent less likely to become teen parents. Just one hour a week can provide a positive impact on the life of a teen.

Parks and recreation agencies have unique advantages that support the development of life skills in adolescents. Adult-supervised, structured park programs can provide the types of activities that allow adolescents room to develop positive social relationships, learn conflict resolution, build on academic success, and become more civic-minded. Park programs can help youth build optimism, self-confidence, and a sense of autonomy.

Parks departments are particularly useful to youth development because natural environments have positive effects on self-discipline and resilience, a particularly important skill in marginalized neighborhoods. The stronger a young person's ability to resist distraction, the better his or her chances of getting good grades and avoiding drugs and

alcohol. Studies show that children living in greener environments are more resilient and respond better to such stressful life events as family strife, divorce, and bullying.

Environmental

Fredrick Law Olmsted, the founder of American landscape architecture, described New York's Central Park as the "lungs of the city." Scientists recently confirmed the important role that urban parks serve in improving air quality. These parks contain more than 370 million trees, which improve air quality through air-pollution removal, carbon storage and removal, and temperature reduction.



Poor air quality affects 127 million people in the United States: aggravated respiratory and cardiovascular disease, decreased lung function, increased severity of respiratory symptoms, and increases in cancer rates. Senior citizens and children are at higher risk for air pollution-related health effects. City parks play a major role in combating

these problems. Urban trees in the lower 48 states are estimated to remove 783,000 tons of pollution per year, with an estimated annual value to society of \$5.6 billion.

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Tree-dense parks also help to reduce air temperature. Because of the heat island effect, cities are generally warmer than their surrounding areas. Consequently, summer heat waves can be more serious, even deadly. More than 600 hundred Americans die each year from exposure to extreme heat. Parks provide city dwellers with some measure of cooling relief during heat waves.

Economic Impact

It's clear that parks have a tremendous economic impact. Their positive effects on physical health, mental health, social well-being, youth development, and the environment all have real monetary benefits in the long-run.

By promoting physical activity, parks are one of the most direct ways to put a dent in the approximately \$147 billion direct and indirect costs of the obesity epidemic. Spending on

parks departments is one of the most cost-effective ways to lower long-term health expenditures, particularly in low-income communities that often rely on Medicaid. Even a small increase in spending can provide significantly increased amounts of physical activity, studies show.

Park-associated mental health benefits also have an economic impact.

ADHD in its youth costs the country more than \$30 billion annually in treatment and medication. Parks can play a role in reducing this amount, by easing the effects in children with ADHD and potentially reducing the overall number of such diagnoses.

Parks and other green areas improve neighborhood social ties. Social scientists believe these connections serve an especially critical function in low-income inner-city communities, particularly among female heads of household. In these groups, neighborhood social ties can provide a safety net that serves as a resource during sudden economic troubles, thereby preventing the need to turn to government-funded social services.

Parks and recreation departments can play a large role in youth development. Improved youth development programs have obvious long-term economic benefit, since they help adolescents grow into productive taxpayers.

Parks provide a sizable economic impact related to the environment. It is estimated that the carbon dioxide storage of urban trees in the continental United States store is worth approximately \$16 billion. These same trees provide an annual benefit of about \$5.6 billion by removing pollutants from the air.

Parks provide other direct economic benefits to local governments. Larger parks attract tourists, who spend money in nearby hotels, shops, and restaurants. Even modest facilities attract visitors for events such as high-school athletic tournaments. The greenery of parks can also improve the property values of nearby homes, which increases tax revenues. A variety of studies demonstrate that urban parks, natural areas, and preserved open spaces positively affect property values.

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Greater park and recreation investment at the national, state, and local level can save the country money in the long-run. The public generally agrees: About one-third of the public believes too little is spent on parks and recreation, while only 6 percent believe too much is being spent.



Nationwide, there are more than 12,000 local park and recreation departments that manage over 105,000 public parks. It is often unrecognized just how important a resource these parks are for their communities. Parks and recreation departments are one of the leading weapons in the battle against obesity. They benefit local residents' psychological well-being by reducing anxiety and depression, and increasing resilience and concentration. Parks help young people build necessary life skills and help adults function as part of the social community. Parks improve the local air quality and help the overall environment. All these benefits help municipalities' bottom lines.



Sources:

“The Benefits of Physical Activity: The Scientific Evidence” by Dr. Geoffrey Godbey and Dr. Andrew Mowen. 2010. National Recreation & Park Association.

“Measuring the Economic Impact of Park and Recreation Services” by Dr. John Crompton. 2010. National Recreation & Park Association.

“Parks and Other Green Environments: Essential Comp. of a Healthy Human Habitat” by Dr. Frances E. (Ming) Kuo. 2010. National Recreation & Park Association.

“Air Quality Effects of Urban Parks and Trees” by Dr. David J. Nowak and Dr. Gordon M. Heisler. 2010. National Recreation & Park Association.

“The Rationale for Recreation Services for Youth: An Evidence Based Approach” by Dr. Peter A. Witt and Dr. Linda Caldwell. 2010. National Recreation & Park Association.

All five reports are available under the heading Research Papers at <http://www.nrpa.org/research-papers>.



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