

The Benefits of Parks:

Why America Needs More City Parks and Open Space

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Forward

At the turn of the 20th century, the majority of Americans lived in rural areas and small towns, relatively close to the land. At the beginning of the 21st century, 85 percent of us were living in cities and metropolitan areas, and many of us are in desperate need of places to experience nature and refresh ourselves in the out-of-doors.

The emergence of America as an urban nation was anticipated by Frederick Law Olmsted and other 19th-century park visionaries, who gave us New York's Central Park, San Francisco's Golden Gate Park, and similar grand parks in cities across the nation. They were gardeners and designers-but also preachers for the power of parks, fired from within by the understanding that they were shaping the quality of American lives for generations to come.

In the view of these park visionaries, parks were not "amenities." They were necessities, providing recreation, inspiration, and essential respite from the city's blare and bustle. And the visionaries were particularly concerned that parks be available to all of a city's residents-especially those who did not have the resources to escape to the countryside.

As population shifted to the suburbs after World War II, this vision of parks for all faded. Many cities lost the resources to create new parks. And in the new suburbs, the sprawling landscapes of curving cul-de-sacs were broken mostly by boxy shopping centers and concrete parking lots.

The time has come for Americans to rededicate themselves to the vision of parks for all the nation's people. As the nation's leading conservation group creating parks in and around cities, the Trust for Public Land (TPL) has launched its Parks for People initiative in the belief that every American child should enjoy convenient access to a nearby park or playground.

This white paper outlines how desperate the need is for city parks-especially in inner-city neighborhoods. And it goes on to describe the social, environmental, economic, and health benefits parks bring to a city and its people. TPL hopes this paper will generate discussion about the need for parks, prompt new research on the benefits of parks to cities, and serve as a reference for government leaders and volunteers as they make the case that parks are essential to the health and well-being of all Americans.

You will find more information about the need for city parks and their benefits in the Parks for People section of TPL's Web site (www.tpl.org/pforp) where you can also sign-up for Parks for People information and support TPL's Parks for People work.

TPL is proud to be highlighting the need for parks in America's cities. Thanks for joining our effort to ensure a park within reach of every American home.

Will Rogers *President*, the Trust for Public Land

Executive Summary

City parks and open space improve our physical and psychological health, strengthen our communities, and make our cities and neighborhoods more attractive places to live and work.

But too few Americans are able to enjoy these benefits. Eighty percent of Americans live in metropolitan areas, and many of these areas are severely lacking in park space. Only 30 percent of Los Angeles residents live within walking distance of a nearby park. Atlanta has no public green space larger than one-third of a square mile.

Low-income neighborhoods populated by minorities and recent immigrants are especially short of park space. From an equity standpoint, there is a strong need to redress this imbalance. In Los Angeles, white neighborhoods enjoy 31.8 acres of park space for every 1,000 people, compared with 1.7 acres in African-American neighborhoods and 0.6 acres in Latino neighborhoods. This inequitable distribution of park space harms the residents of these communities and creates substantial costs for the nation as a whole.

U.S. voters have repeatedly shown their willingness to raise their own taxes to pay for new or improved parks. In 2002, 189 conservation funding measures appeared on ballots in 28 states. Voters approved three-quarters of these, generating \$10 billion in conservation-related funding.

Many of the nation's great city parks were built in the second half of the 19th century. Urban planners believed the parks would improve public health, relieve the stresses of urban life, and create a democratizing public space where rich and poor would mix on equal terms. By the mid-20th century, city parks fell into decline as people fled inner cities for the suburbs. The suburbs fared no better, as people believed that backyards would meet the requirement for public open space.

Over the past couple of decades, interest in city parks has revived. Governments and civic groups around the country have revitalized run-down city parks, built greenways along rivers,

Despite the importance of exercise, only 25 percent of American adults engage in the recommended levels of physical activity, and 29 percent engage in no leisure-time physical activity. The sedentary lifestyle and unhealthy diet of Americans have produced an epidemic of obesity. The Centers for Disease Control and Prevention has called for the creation of more parks and playgrounds to help fight this epidemic.

Numerous studies have shown that parks and open space increase the value of neighboring residential property. Growing evidence points to a similar benefit on commercial property value. The availability of park and recreation facilities is an important quality-of-life factor for corporations choosing where to locate facilities and for well-educated individuals choos-

America Needs More City Parks

U.S. Cities Are Park-Poor

The residents of many U.S. cities lack adequate access to parks and open space near their homes. In 2000, 80 percent of Americans were living in metropolitan areas, up from 48 percent in 1940.¹ The park space in many of these metropolitan areas is grossly inadequate.

In Atlanta, for example, parkland covers only 3.8 percent of the city's area. Atlanta has no public green space larger than one-third of a square mile.² The city has only 7.8 acres of park space for every 1,000 residents, compared with a 19.1 acre average for other medium-low population density cities.³ The story is much the same in Los Angeles, San Jose, New Orleans, and Dallas.

Even in cities that have substantial park space as a whole, the residents of many neighborhoods lack access to nearby parks. In New York City, for example, nearly half of the city's 59 community board districts have less than 1.5 acres of parkland per 1,000 residents.⁴

Low-Income Neighborhoods Are Desperately Short of Park Space

Low-income neighborhoods populated by minorities and recent immigrants are especially short of park space. Minorities and the poor have historically been shunted off to live on the wrong side of the tracks, in paved-over, industrialized areas with few public amenities. From an equity standpoint, there is a strong need to redress this imbalance.

In Los Angeles, white neighborhoods (where whites make up 75 percent or more of the residents) boast 31.8 acres of park space for every 1,000 people, compared with 1.7 acres in African-American neighborhoods and 0.6 acres in Latino neighborhoods.⁵

This inequitable distribution of park space harms the residents of these communities and creates substantial costs to the nation as a whole. The health care costs alone are potentially enormous. Lacking places for recreation, minorities and low-income individuals are significantly less likely than whites and high-income individuals to engage in the regular physical activity that is crucial to good health.

Among non-Hispanic white adults in the United States, 34.9 percent engage in regular leisure-time physical activity, compared with only 25.4 percent of non-Hispanic black adults and 22.7 percent of Hispanic adults.⁶ And adults with incomes below the poverty level are three times as likely as high-income adults to never be physically active.⁷

Even where the government or voters have allocated new money for park acquisition, there is significant risk that wealthier and better-organized districts will grab more than their fair share. The Los Angeles neighborhood of South Central-with the city's second-highest pover-

ty rate, highest share of children, and lowest access to nearby park space-received only about half as much per-child parks funding as affluent West Los Angeles from Proposition K between 1998 and 2000.⁸

Case Study: New Parks for Los Angeles

With 28,000 people crammed into its one square mile⁹ of low-rise buildings, the city of Maywood in Los Angeles County is the most densely populated U.S. city outside the New York City metropolitan area.¹⁰ Its residents-96 percent are Hispanic and 37 percent are children-are often packed five to a bedroom, with entire families living in garages and beds being used on a time-share basis.

The Trust for Public Land (TPL) has been working in Maywood since 1996 to purchase, assemble, and convert six separate former industrial sites into a seven-acre riverside park. The project will double Maywood's park space.¹¹

Before TPL began its work, the future park site was occupied by a bandoned warehouses and industrial buildings, covered in garbage, graffiti, rusted metal, and barrels of industrial waste. $\rm U$ Angeles and has since expanded the program to New York, Las Vegas, Boston, Charlotte, Miami, and Camden and Newark, New Jersey. TPL's GIS system uses census, demographic and other data to map out areas of high population, concentrated poverty, and lack of access to park space.

With GIS technology, TPL can now pinpoint the areas of fastest population growth, study landownership patterns, and acquire key parcels before development demand drives up property prices or destroys open space. Further, GIS helps TPL create contiguous park space, protecting natural habitats and connecting larger parks with linear greenways, rather than create a patchwork quilt of open space.¹⁴

The Public Wants More Parks

taking public funding with them. Cities and their parks fell into a spiral of decay. Cities cut park maintenance funds, parks deteriorated, and crime rose; many city dwellers came to view places like Central Park as too dangerous to visit.¹⁸

The suburbs that mushroomed at the edges of major cities were often built with little public park space. For residents of these areas, a trip out of the house means a drive to the shopping mall.

Beginning around 1990, many city and town councils began forcing developers to add open space to their projects. Still, these open spaces are often effectively off-limits to the general public; in the vast sprawl around Las Vegas, for example, the newer subdivisions often have open space at their centers, but these spaces are hidden inside a labyrinth of winding streets. Residents of older, low- and middle-income neighborhoods have to get in their cars (if they have one) and drive to find recreation space.¹⁹

A Revival Begins

More recently, city parks have experienced something of a renaissance which has benefited cities unequally. The trend began in the 1970s and flourished in the 1990s as part of a general renewal of urban areas funded by a strong economy. It coincided with a philosophical shift in urban planning away from designing around the automobile and a backlash against the alienating modernism of mid-20th-century public architecture, in favor of public spaces that welcome and engage the community in general and the pedestrian in particular.

Government authorities, civic groups, and private agencies around the country have worked together to revitalize run-down city parks, build greenways along formerly polluted rivers, convert abandoned railroad lines to trails, and plant community gardens in vacant lots.

The Park at Post Office Square in Boston shows how even a small but well-designed open space can transform its surroundings. Before work on the park began in the late 1980s, the square was filled by an exceptionally ugly concrete parking garage, blighting an important part of the financial district. Many buildings on the square shifted their entrances and addresses to other streets not facing the square.²⁰

Completed in 1992, the 1.7-acre park is considered one of the most beautiful city parks in the United States. Its immaculate landscaping-with 125 species of plants, flowers, bushes, and trees-its half-acre lawn, its fountains, and its teak and granite benches lure throngs of workers during lunchtime on warm days. Hidden underneath is a seven-floor parking garage for 1,400 cars, which provides financial support for the park.²¹

"It clearly, without any question, has enhanced and changed the entire neighborhood," says Serge Denis, managing director of Le Meridien Hotel Boston, which borders the park. "It's absolutely gorgeous." Not surprisingly, rooms overlooking the park command a premium.²²

Access to Parks Increases Frequency of Exercise

Strong evidence shows that when people have access to parks, they exercise more. In a study published by the CDC, creation of or enhanced access to places for physical activity led to a 25.6 percent increase in the percentage of people exercising on three or more days per week.³³

A group of studies reviewed in the American Journal of Preventive Medicine showed that "creation of or enhanced access to places for physical activity combined with informational outreach" produced a 48.4 percent increase in frequency of physical activity.³⁴

The same group of studies showed that access to a place to exercise results in a 5.1 percent median increase in aerobic capacity, along with a reduction in body fat, weight loss, improvements in flexibility, and an increase in perceived energy.³⁵

When people have nowhere to walk, they gain weight. Obesity is more likely in unwalkable neighborhoods, but goes down when measures of walkability go up: dense housing, well-connected streets, and mixed landuses reduce the probability that residents will be obese.³⁶

Exposure to Nature and Greenery Makes People Healthier

Beyond the recreational opportunities offered by parks, a growing body of research shows that contact with the natural world improves physical and psychological health.

One important study reviewed the recoveries of surgical patients in a Pennsylvania hospital. The rooms of some patients overlooked a stand of trees, while others faced a brown brick wall. A review of ten years of medical records showed that patients with tree views had shorter hospitalizations, less need for painkillers, and fewer negative comments in the nurses' notes, compared with patients with brick-wall views.³⁷

The benefits extend to psychological health. "The concept that plants have a role in mental health is well established," according to a review of previous studies by Howard Frumkin in the American Journal of Preventive Medicine. "Horticultural therapy evolved as a form of mental health treatment, based on the therapeutic effects of gardening. It is also used today in community-based programs, geriatrics programs, prisons, developmental disabilities programs, and special education."³⁸

Further, "research on recreational activities has shown that savanna-like settings are associated with self-reported feelings of 'peacefulness,' 'tranquility,' or 'relaxation,'" Frumkin writes. "Viewing such settings leads to decreased fear and anger...[and] is associated with enhanced mental alertness, attention, and cognitive performance, as measured by tasks such as proof-reading and by formal psychological testing."³⁹

An extensive study published in 2001 in the Netherlands set out to determine the link

between green space and health. The study overlaid two extensive databases, one with health information on more than 10,000 residents of the Netherlands, and the other a landuse database covering every 25-by-25-meter square in the nation, allowing researchers to know which people lived near city parks, agricultural land, and forests and nature areas.⁴⁰

The study produced several key findings. First, "in a greener environment people report fewer health complaints, more often rate themselves as being in good health, and have better mental health," the study found. Second, "when it comes to health, all types of green seem to be equally 'effective'"; the study found the same benefit from living near city parks, agricultural areas, and forest.⁴¹

A ten percent increase in nearby greenspace was found to decrease a person's health complaints in an amount equivalent to a five year reduction in that person's age.

Important theoretical foundations were laid in this area by Harvard biologist Edward O. Wilson, who in 1984 hypothesized the existence of biophilia, "the innately emotional affiliation of human beings to other living organisms."⁴²

Others have extended this idea to postulate "an affinity for nature that goes beyond living things, to include streams, ocean waves, and wind."⁴³ This affinity may stem from evolutionary roots: "For the great majority of human existence, human biology has been embedded in the natural environment," Frumkin writes. "Those who could smell the water, find the plants, follow the animals, and recognize the safe havens, must have enjoyed survival advantages."⁴⁴

Economic Benefits of Parks

Increased Property Values

"The real estate market consistently demonstrates that many people are willing to pay a larger amount for a property located close to parks and open space areas than for a home that does not offer this amenity," writes John L. Crompton, a professor at Texas A&M University who has published extensive research on parks and recreation.⁴⁵

In his 2000 report, Crompton reviewed 25 studies investigating whether parks and open

Repeated studies over the years have confirmed that people prefer to buy homes close to parks, open space, and greenery. One key study looked at the effect of proximity to greenbelts in Boulder, Colorado. The study showed that, other things being equal, there was a \$4.20 decrease in the price of residential property for every foot one moved away from the greenbelt, and that the average value of homes next to the greenbelt was 32 percent higher than those 3,200 feet away.⁴⁸

The same study showed that the greenbelt added \$5.4 million to the total property values of one neighborhood. That generated \$500,000 per year in additional potential property taxes, enough to cover the \$1.5 million purchase price of the greenbelt in only three years.⁴⁹

In a 2001 survey conducted for the National Association of Realtors by Public Opinion Strategies, 50 percent of respondents said they would be willing to pay 10 percent more for a house located near a park or other protected open space. In the same survey, 57 percent of respondents said that if they were in the market to buy a new home, they would be more likely to select one neighborhood over another if it was close to parks and open space.⁵⁰

In this time of budget austerity, one point is crucial: to protect the positive economic impact of parks, the parks must be well maintained and secure. A park that is dangerous and ill kept is likely to hurt the value of nearby homes.⁵¹

Property Values in Low-Income Urban Areas

A University of Southern California study found that the positive relationship between park

rustic features such as meadows, orchards, fields and pastures, stream valley habitat, and woodlands. $^{\rm 54}$

Effects on Commercial Property Values

Its name is Bryant Park, but by 1980, the 133-year-old square behind the New York Public Library was known as "Needle Park," for the drug dealers who plied their trade behind its spiked iron fence and thick shrubbery. With an average of 150 robberies a year in Bryant Park, citizens entered at their peril.

But after a 12-year renovation, the park reopened in 1992, becoming the site of major fashion shows, a jazz festival, outdoor movies, and an outdoor café, and attracting thousands of visitors each day. Within two years of the reopening, leasing activity on neighboring Sixth Avenue had increased 60 percent over the previous year, with brokers referring to the park as the "deal-clincher."⁵⁵

The park revived demand for space in neighboring office buildings. Between 1990 and 2000, rents for commercial office space near Bryant Park increased between 115 percent and 225 percent, compared with increases of between 41 percent and 73 percent in the surrounding submarkets, according to a study conducted by Ernst & Young. The same report, which analyzed 36 neighborhood parks in all five boroughs of New York City, concluded that "commercial asking rents, residential sale prices, and assessed values for properties near a well-improved park generally exceeded rents in surrounding submarkets."⁵⁶

A similar story played out in Atlanta, where Centennial Olympic Park was built as the central space for the 1996 Summer Olympics. Property value in the immediate area was \$2 per square foot in the early 1980s; by the end of the 1990s, that value had risen to \$150 per square foot.⁵⁷

Economic Revitalization: Attracting and Retaining Businesses and Residents

In May 2001, Boeing Co. announced its decision for the location of its new corporate headquarters, after a heated three-way battle among Chicago, Dallas, and Denver. In choosing Chicago, Boeing officials cited, among other reasons, the city's quality of life, including recreation opportunities, its downtown, and urban life.⁵⁸

The choice sent Dallas into a long-overdue bout of introspection. Dallas took a good hard look at itself and decided it needed more downtown park space. "The Boeing relocation had a profound impact on people's attitude toward the quality of life in our city in general, and the quality of our downtown environment in particular," says Willis Winters of the Dallas Park and Recreation Department.⁵⁹

Downtown Dallas is ringed by highways and lined with office towers-with estimated vacancy

rates of more than 30 percent-but bereft of green space.

percent of the particulate matter, 8 percent of the nitrogen dioxide, and 0.05 percent of the carbon monoxide. $^{\rm 73}$

Trees and the soil under them also act as natural filters for water pollution. Their leaves, trunks, roots, and associated soil remove polluted particulate matter from the water before it reaches storm sewers. Trees also absorb nutrients created by human activity, such as nitrogen, phosphorus, and potassium, which otherwise pollute streams and lakes.⁷⁴

Trees also act as natural air conditioners to help keep cities cooler, mitigating the effects of

experience a sense of community.

Reducing Crime

Access to public parks and recreational facilities has been strongly linked to reductions in crime and in particular to reduced juvenile delinquency.

Recreational facilities keep at-risk youth off the streets, give them a safe environment to interact with their peers, and fill up time within which they could otherwise get into trouble.

ately around the gardens rose a median of \$91, compared with no change in the larger U.S. Census areas surrounding the gardens and a \$4 drop for St. Louis as a whole.⁸⁹

Advocates of community gardens say they increase residents' sense of community ownership and stewardship, provide a focus for neighborhood activities, expose inner-city youth to nature, connect people from diverse cultures, reduce crime by cleaning up vacant lots, and build community leaders.

"The garden can take credit for bringing the neighborhood together," says Annie Thompsodeh toAdvocj get3

But too few Americans are able to enjoy these benefits. The lack of places for regular exercise has contributed to America's epidemic of obesity among adults and children, an epidemic that will have dire consequences on both our health and our finances.

Building a basketball court is far cheaper than building a prison block. Yet because we have not invested in city parks, many children have nowhere to play outdoors [and may turn to crime]. A generation of children is growing up indoors, locked into a deadened life of television and video games, alienated from the natural world and its life-affirming benefits.

We call on Americans to join the effort to bring parks, open spaces, and greenways into the neighborhoods where all can benefit from them. While government plays a vital role in the creation of public parks, governments cannot do the job alone. Achieving this vision will depend on the planning and transactional skills of nonprofit groups like TPL; on the input of neighborhood groups and community leaders in designing the parks; and on the financial support and moral leadership of community-minded individuals and businesses.

Working together, we can help many more Americans experience the joys of jogging down a tree-lined path, of a family picnic on a sunny lawn, of sharing a community garden's proud harvest. We can create the green oases that offer refuge from the alienating city streets-places where we can rediscover our natural roots and reconnect with our souls.

Notes

1. Frank Hobbs and Nicole Stoops, *Demographic Trends in the 20th Century* (Washington, D.C.: U.S. Census Bureau, November 2002), p. 33, http://www.census.gov/prod/2002pubs/censr-4.pdf.

2. Peter Harnik, *The Excellent City Park System* (San Francisco, Calif.: The Trust for Public Land, 2003), p. 38. 3. Ibid., p. 37.

4. *Conserving Open Space in New York State* (New York State Department of Environmental Conservation and Office of Parks, Recreation, and Historic Preservation, November 1995), p. 73, cited in Diane Englander, New York's Community Gardens-A Resource at Risk (San Francisco: The Trust for Public Land, 2001), p. 3, http://www.tpl.org/content_document/nyc_community_gardens.pdf.

5. Stephanie Pincetl et al., "Toward a Sustainable Los Angeles: A 'Nature's Services' Approach" (Los Angeles: University of Southern California, Center for Sustainable Cities, March 2003), p. 36, http://www.usc.edu/dept/geography/ESPE/documents/report_haynes.pdf.

6. "Regular leisure-time physical activity" is defined as engaging in light to moderate leisure-time physical activity for at least 30 minutes five or more times per week, or engaging in vigorous leisure-time physical activity for at least 20 minutes three or more times per week. Centers for Disease Control and Prevention (CDC), "Early Release of Selected Estimates Based on Data from the 2002 National Health Interview Survey" (Atlanta: CDC, National Center for Health Statistics, June, 2003),

http://www.cdc.gov/nchs/data/nhis/earlyrelease/200306_07.pdf.

7. High-income adults are defined as those with incomes four or more times the poverty level. Patricia M. Barnes and Charlotte A. Schoenborn, "Physical Activity Among Adults: United States, 2000," *Advance Data from Vital and Health Statistics* (Atlanta: Centers for Disease Control and Prevention, National Center for Health Statistics, May 14, 2003), p. 6, http://www.cdc.gov/nchs/data/ad/ad333.pdf.

Childhood Education International, 2002,http://www.udel.edu/bateman/acei/playpaper.htm.
85. Henriette van Praag et al., "Running Enhances Neurogenesis, Learning, and Long-term Potentiation in Mice," *Proceedings of the National Academy of Sciences* 96, no. 23 (November 9, 1999): 13427-13431, http://www.pnas.org/cgi/content/full/96/23/13427. See also press release at http://www.hhmi.org/news/sejnowski.html.
86. Badge Blackett, senior project manager, The Trust for Public Land, interview by author, July 10, 2003. See also The Trust for Public Land, "Greening New England's Mid-Sized Cities," October 10, 2000, http://www.tpl.org/tier3_print.cfm?content_item_id=1305&folder_id=905.
87. Frances E. Kuo et al., "Fertile Ground for Community: Inner-City Neighborhood Common Spaces," *American Journal of Community Psychology* 26, no. 6 (1998), webs.aces.uiuc.edu/herl/docs/KuoSulColeyBrunson.pdf.
88. Mark Tranel, "The Whitmire Study" (unpublished draft report, Gateway Greening, July 2003), p. 6. For limited information, see http://www.stlouis.missouri.org/gatewaygreening/WhitmireStudy.htm.
89. Ibid., p. 3.
90. Jane Weissman, ed. *City Farmers: Tales from the Field* (1995), cited in Englander, New York's *Community*

Gardens, p. 7.

91. Ibid., p. 1.

Bibliography

American Forests. "The State of the Urban Forest: Assessing Tree Cover and Developing Goals." September 1997.

———. "Urban Forests-Trees Working Where People Do." http://www.americanforests.org/gray-togreen/.

Arendt, Randall. "Enhancing Subdivision Value through Conservation Design." Common Ground, National Association of Realtors, summer 2001. http://www.realtor.org/SmartGrowth2.nsf/Pages/enhansubdivisions?OpenDocument.

Beattie, Jeff, Cheryl Kollin, and Gary Moll. "Trees Help Cities Meet Clean Water Regulations." *American Forests*, summer 2000.

http://www.americanforests.org/downloads/graytogreen/treeshelpcities.pdf.

Centers for Disease Control and Prevention. "Defining Overweight and Obesity." http://www.cdc.gov/nccdphp/dnpa/obesity/defining.htm.

-----. "Health Consequences." http://www.cdc.gov/nccdphp/dnpa/obesity/consequences.htm.

———. Increasing Physical Activity: A Report on Recommendations of the Task Force on Community Preventive Services. October 26, 2001. http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5018a1.htm.

———. National Center for Chronic Disease Prevention and Health Promotion. *Physical Activity and Health: A Report of the Surgeon General, 1996.* http://www.cdc.gov/nccdphp/sgr/pdf/sgrfull.pdf.

------. National Center for Health Statistics. "Physical Activity Among Adults: United States,

2000." By Patricia M. Barnes and Charlotte A. Schoenborn, in

Loe Hicks, Victoria. "44-acre park plan unveiled for downtown Dallas." *Dallas Morning News*, July 11, 2003.

Maywood, California. "About Maywood." 2003. http://www.cityofmaywood.com/home/aboutMaywood.cfm?sec=home&subSec=about.

Michaels, Dave. "Panel Backs Aid for Downtown, Victory; Task Force Pushes Tax Dollars for Projects, Asks Developers to Cooperate." *Dallas Morning News*, January 24, 2002.

Minneapolis, Minneapolis Park & Recreation Board. "2003-2004 Impacts of the

The Trust for Public Land. *Healing America's Cities: How Urban Parks Can Make Cities Safe and Healthy.* San Francisco, 1994.

The Trust for Public Land. "Land for Great River Resource Center Acquired by New Park District." Press release, March 28, 2002.

http://www.stlouis2004.org/html/newsreleases/archives/2002/3-28-02 Land Acquired for Resource Center.htm.

The Trust for Public Land. "Maywood Riverfront Park Project." http://www.tpl.org/tier3_cdl.cfm?content_item_id=5848&folder_id=1525.

The Trust for Public Land and Land Trust Alliance. *LandVote 2002*. Boston, January 2003. http://www.lta.org/publicpolicy/landvote2002.pdf.

Ulrich, R. S. "View through a Window May Influence Recovery from Surgery." Science 224 (1984).

U.S. Census Bureau. "Population, Housing Units, Area, and Density (geographies ranked by total population): 2000."

http://www.factfinder.census.gov/servlet/GCTTable?ds_name=D&geo_id=D&mt_name=DEC _2000_SF1_U_GCTPHIR_US13S&_lang=en.

van Praag, Henriette, Brian R. Christie, Terrence J. Sejnowski, and Fred H. Gage. "Running Enhances Neurogenesis, Learning, and Long-term Potentiation in Mice." *Proceedings of the National Academy of Sciences* 96, no. 23 (November 9, 1999): 13427-13431. http://www.pnas.org/cgi/content/full/96/23/13427. See also press release at http://www.hhmi.org/news/sejnowski.html.

Weissman, Jane, ed. City Farmers: Tales from the Field, 1995.

Wilson, Edward O. *Biophilia: The Human Bond with Other Species.* Cambridge, Mass.: Harvard University Press, 1984.

Witt, Peter A., and John L. Crompton. "The At-risk Youth Recreation Project." *Journal of Park and Recreation Administration* 14, no. 3, 1-9. http://www.rpts.tamu.edu/Faculty/Witt/wittpub5.htm.

Wolch, Jennifer, John P. Wilson, and Jed Fehrenbach. "Parks and Park Funding in Los Angeles: An Equity Mapping Analysis." University of Southern California. Sustainable Cities Program. GIS Research Laboratory, May 2002. http://www.ceres.ca.gov/biodiversity/Meetings/archive/ej/USC.pdf.