

# **The Benefits of State Investments in Preservation Programs**

*A Compilation of Reports, Plans and other Studies Detailing the Benefits of Land  
Preservation, Farmland Preservation and Historic Preservation in New Jersey*

*A Project of the New Jersey Conservation Foundation  
in cooperation with*

*New Jersey- Keep It Green Coalition*

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## **Introduction**

The Garden State Preservation Trust (GSPT) is a national model for financing land conservation and one of the largest state-run efforts ever launched in the United States. The GSPT serves as the financing authority to secure funds for the state Green Acres Program, Farmland Preservation Program, and the New Jersey Historic Trust. The economic, social, environmental and health benefits that have resulted from expenditures from the Trust as well as the accomplishments realized in New Jersey because of the GSPT are measurable and remarkable.

Voters on November 3, 1998, approved Public Question #1 amending the New Jersey Constitution to dedicate \$98 million a year from the Sales and Use Tax for land preservation, historic preservation and park development. The dedication began in 1999 and continues until 2029. The objective was to fund a ten-year preservation program. The final 20 years of the dedication were in place to cover the debt payments on bonds that would be issued during the ten-year acquisition program to finance the appropriation. The acquisition period ends in 2009. Yet the work of land and historic preservation is unfinished. Unmet needs remain, and taking care of the lands and properties already preserved is one of those pressing needs.

To this end, the New Jersey Conservation Foundation in cooperation with the New Jersey- Keep It Green Coalition has developed a series of white papers about the statewide benefits, accomplishments and future needs for continued state funding for open space and farmland preservation, restoration and stewardship of natural and recreational areas, and historic preservation. This paper represents a compilation of research reports, studies, and plans that detail the benefits of open space and farmland preservation, restoration and stewardship of natural and recreational areas, and historic preservation.

## Summary

Statewide funding for farmland, open space and historic preservation is an investment in the economic, physical and environmental health of New Jersey residents. Land and historic preservation ...

- stabilizes property taxes within communities by balancing development and open space,
- supports diverse and vital segments of New Jersey's economy—from farming to commercial fishing to tourism-supported industries,
- contributes to the economic stability of our communities by retaining and enhancing land values,
- creates jobs—in tourism, engineering, planning, conservation and recreation-support industries and many other sectors,
- results in a more physically fit population by providing easily accessible recreation areas and facilities that encourage people to engage in outdoor activities,
- improves the physical and emotional health of residents by providing places for families and friends to play outdoors,
- contributes toward energy conservation by providing safe pedestrian and cycling transportation corridors and cooler cities during summer months,
- ensures New Jersey remains home for a diversity of plants and animals resulting in a healthier eco-system,
- improves the character of development by taming traffic and providing attractive neighborhoods,
- offers outdoor classrooms for people to learn about the complexity of the natural world, enhance our sense of wonder and better understand our roles as stewards,
- builds social cohesion by providing places for children to play, and families and individuals to mingle or participate in active or passive recreational activities,
- helps mitigate flooding, thus reducing need for costly structural measures,

- slows the rate of climate change by increasing vegetation that absorbs carbon and releases oxygen,
- replenishes groundwater to underground natural storage areas, helping to ensure adequate drinking water supplies,
- helps maintain a clean water supply when pervious ground cover, which filters contaminants from stormwater runoff, is maintained or increased,
- connects people with the wonders of the natural world, encouraging a sense of well-being,
- retains and enhances the character of New Jersey's vibrant communities,
- provides an alternative option for landowners not interested in developing their land or family farm and keeps the garden in the "Garden State"

### **Economic Benefits**

#### **Tax Stabilization: Open Space Pays**

The chase for ratables persists in many of New Jersey's municipalities in spite of a convincing body of evidence that municipal taxes typically increase as a result of new residential development. In fact, it has become increasingly clear that preserving land, in the long run, is far cheaper than having it developed. For example, in Wayland, MA, a professional analysis found that development of 1250 acres of open space would cost taxpayers \$328,350 a year more than the development added in new tax revenues. This represented a \$7.75 increase in the tax rate. On the other hand, to purchase the property would only add \$4.25 to the tax rate.<sup>1</sup>

The New Jersey Pinelands, the first of its kind National Reserve, was created by Congress under the National Parks and Recreation Act of 1978. The Pinelands National Reserve encompasses approximately 1.1 million acres covering portions of seven counties and all or parts of 56 municipalities. It is the largest body of open space on the Mid-Atlantic seaboard between Richmond and Boston and is underlain by aquifers containing 17 trillion gallons of pure drinking water. In 1983 the area was designated a U.S. Biosphere Reserve by UNESCO, an agency of the United Nations, and in 1988 it was recognized as an International Biosphere Reserve. Today, with the Pinelands Comprehensive Management Plan (CMP), the region is protected in a manner that maintains its unique ecology while permitting compatible development.<sup>2</sup> Growth within the Pinelands Preservation Area is strictly limited and as such, much of the Pinelands is permanently preserved open space.

In 1994, the Pinelands Commission compared local taxes in 13 towns within the Pinelands Preservation Area with 13 similar towns outside the Pinelands. The average per capita tax increase from 1970 to 1990 was 42% lower in Pinelands towns than in non-Pinelands towns.<sup>3</sup>

New data reinforces the positive gap between property taxes in the Pinelands region versus other regions. The average residential property tax bill grew more quickly in the Non-Pinelands again in 2006 (Pines +6.8% vs. 8.0% for the Non-Pines). The average total residential tax bills were almost \$700 lower in the Pinelands than in the Non-Pinelands in 2006. Despite the slowdown in real estate transactions, equalized property values rose in all regions of the state for the ninth consecutive year in 2006, with the Pinelands region registering an increase of 13% compared to an increase statewide of 10.8% for the year. Fueled by still increasing home values, effective tax rates fell for the sixth consecutive year across all regions in 2006. The Pinelands has experienced the steepest decline in taxes of any region over the last six years, with effective tax rates dropping 30% for the period while simultaneously a greater than average increase in property values.<sup>4</sup>

### **Cost of Community Services: Fiscal Impact of Open Space and Farmland Preservation**

Cost of Community Services (COCS) studies are a case study approach used to determine the average fiscal contribution of existing local land uses. A subset of the much larger field of fiscal analysis, COCS studies have emerged as an inexpensive and reliable tool to measure direct fiscal relationships. Their particular niche is to evaluate working (e.g., agricultural) and open lands on equal ground with residential, commercial and industrial land uses.

Agricultural land is converted to development more commonly than any other land use. American Farmland Trust (AFT) developed COCS methodologies in the mid-1980s to provide communities with a straightforward and inexpensive way to measure the contribution of agricultural lands to the local tax base. In 1998, AFT studied five communities in New Jersey and found the relative Costs of Community Services of three land categories. (See table below.)

As an example, in Freehold Township, for every \$1 it collects in residential property tax, the township spends \$1.51 towards police, public education, road maintenance and other municipal services. However, for the same \$1 collected from commercial/industrial properties, \$0.17 is spent on municipal services. And for every \$1 collected from privately owned natural resource lands (farms, forests and other open lands), it only costs the municipality \$0.33 in services.

### **Revenue-to-Expenditure Ratios in Dollars**

<u>Community</u>	<u>Residential</u>	<u>Commercial &amp; Industrial</u>	<u>Forests, Farms, &amp; Open Land</u>
Freehold Township	1 : 1.51	1 : 0.17	1 : 0.33
Holmdel Township	1 : 1.38	1 : 0.21	1 : 0.66
Middletown Township	1 : 1.14	1 : 0.34	1 : 0.36
Upper Freehold Twp	1 : 1.18	1 : 0.20	1 : 0.35
Wall Township	1 : 1.28	1 : 0.30	1 : 0.54

While it is true that an acre of land with a new house generates more total revenue than an acre of hay or corn, this tells us little about a community's bottom line. In areas where agriculture or forestry is a major industry, it is especially important to consider the real property tax contribution of privately owned working lands. Working and other open lands may generate less revenue than residential, commercial or industrial properties, but they require little public infrastructure and few services. COCS studies conducted over the last 15 years show working lands generate more public revenues than they receive back in public services. Their impact on community coffers is similar to that of other commercial and industrial land uses. On average, because residential land uses do not cover their costs, they must be subsidized by other community land uses. Converting agricultural land to residential land use should not be seen as a way to balance local budgets.

What is unique about COCS studies is that they show that agricultural land is similar to other commercial and industrial land uses. In every community studied, farmland has generated a fiscal surplus to help offset the shortfall created by residential demand for public services. This is true even when the land is assessed at its current, agricultural use.<sup>5</sup>

### **Property Values**

Setting aside open space and creating parks and greenways enhance the value of adjacent properties and result in increased tax revenue.

In an analysis of 40 national studies by Resources for the Future, the average home price increases up to 16% depending on the size of the open space, distance of the home to the open space and type of open space. The value for a vacant lot adjacent to open space increased on average by 35%.<sup>6</sup>

In Boulder, Colorado, a study of enhanced property values near open space showed an annual increase in property tax revenue of approximately \$500,000. In Salem, Oregon the land adjacent to open space was worth approximately \$1,200 more per acre than urban land 1,000 feet away from the green belt. Proximity to parks in urban areas has been shown to account for up to 15 - 20% of a property's value, according to the National Association of Homebuilders. In California, a one-time investment of \$330 million park bond

resulted in an estimated \$100 million annual increase in property values. Enhancement values appear to more than compensate for any losses due to adjusted taxation for the open space.<sup>7</sup>

“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. In some instances, the additional property taxes are sufficient to pay the annual debt charges on the bonds used to finance the park’s acquisition and development. “In these cases, the park is obtained at no long-term cost to the jurisdiction,” Crompton writes.<sup>8</sup>

In New York City, a report released by Friends of Hudson River Park, “The Impact of Hudson River Park on Property Values”, demonstrated how about twenty percent of the value of properties in the two blocks adjoining the Hudson River in Greenwich Village can be attributed to the Hudson River Park. Spread across all the properties in the study area, including those that did not change hands, the value attributable to the park is about \$200 million. The cost of building this section of the Park: \$75 million.<sup>9</sup>

It is important to note that adjacency to merely undeveloped land does not have an effect on property value. The open land must be permanently preserved or recognized as having intrinsic environmental value. In a study by the New Jersey Department of Environmental Protection, houses located in Environmentally Sensitive zones as defined by the Office of State Planning had selling prices between \$8,600 and \$34,000 higher than houses not located in such zones. However, the study found that proximity to similar yet *unprotected* forests and wetlands had *no* strong effect on property values across markets.<sup>10</sup>

### **Urban Open Space: Attracting People & Business**

In cities, people want to live near open spaces—they recognize and appreciate the value and are willing to pay for the amenity. This has been confirmed by studies that find a statistically significant link between property values and proximity to green space, including neighborhood parks and urban forested areas. One study found that the value of properties near Pennypack Park in Philadelphia increased from about \$1,000 per acre at 2,500 feet from the park to \$11,500 per acre at 40 feet from the park. Another found that the price of residential property—based on data from three neighborhoods in Boulder, Colorado—decreased by \$4.20 for every foot farther away from the city’s greenbelt.<sup>11</sup>

According to a 2003 study sponsored by the Boston Foundation and the Greater Boston Chamber of Commerce, following job availability, access to outdoor activities is the second most important factor for recent college graduates assessing whether to stay or leave the state.<sup>12</sup>

## **Savings in Drinking Water Quality and Quantity**

Increases in human population and changes in land use due to increasing development pressure threaten drinking water supplies by contributing to over withdrawal of ground and surface water systems. In turn, this over withdrawal degrades water quality and reduces recharge rates, which deplete aquifers and reduce safe yields of reservoirs, and increase the potential for significant cost to develop new supplies or provide for water treatment facilities.<sup>13</sup>

Whether located in rural, suburban, or urban areas, natural vegetation filters pollutants from stormwater and allows precipitation to replenish ground water supplies. Pervasive development can cover large areas with impervious surfaces (such as roads and rooftops) which shunt runoff away from drinking water aquifers and into culverts and streams. In these developed areas, there is simply not enough undeveloped open space to absorb rainfall.<sup>14</sup>

It is cheaper to protect the watersheds surrounding reservoirs and the rivers and streams that feed them than it is to treat pollutants in water drawn from reservoirs. The *Cahill Stormwater Report* showed this dramatically for water quality. State of the art, best management practices for stormwater control still allow 30% to 40% of the pollutants to get through the system. Suppliers in source areas with chemical contaminants paid \$25 more per million gallons to treat their water than suppliers in source areas where no chemical contaminants were detected. For every four percent increase in raw water turbidity there is a one percent increase in treatment costs. Increased turbidity, which indicates the presence of sediment, algae and other microorganisms in the water, is a direct result of increased development, poor forestry practices, mining or intensive farming in the watershed.<sup>15</sup>

Another study found that for every 10% increase in forest land cover, water treatment and chemical costs decrease by 20%.<sup>16</sup> Water quality maintenance is a major benefit of vegetated open space.<sup>17</sup>

Other studies quantify the value of naturally functioning ecosystems to the protection of drinking water. A study by Worldwatch Institute found that the estimated value of water storage and aquifer recharge of a single 557,000-acre Florida swamp equaled \$25 million annually.<sup>18</sup>

## **Commercial Fishing**

Healthy marine fisheries provide employment opportunities for commercial operations, food for local and regional markets, as well as recreational fishing opportunities for visitors and residents. Clean marine waters are needed to ensure the highest quality commercial fishing seafood catch and to maintain the health of the ocean and the sustainability of its resources. According to the National Marine Fisheries Service, the value of New Jersey's commercial seafood catch increased \$13 million in 2005. The harvest was worth \$159 million, up from \$146 million in 2004, the New Jersey Department of Agriculture announced. The National Marine Fisheries Service estimated that for

every one dollar of landed value, six dollars are generated in the overall economy, bringing the value of New Jersey's wild harvest to \$954 million.<sup>19</sup>

### **Economics of Tourism**

Travel and tourism expenditures in New Jersey surpassed \$38 billion in 2007.<sup>20</sup> Tourism's contribution to the state's employment is more than doubled that of the United States total. Tourism also generated \$7.3 billion in total tax revenue in 2007, a 2% increase from 2006. Nearly 500,000 jobs were created by the travel and tourism economic activity, accounting for 11% of the state's total employment. Seventy-one cents (\$.71) of every dollar spent by visitors stay within New Jersey. Visitors from other states represent the largest portion of tourism expenditures in New Jersey. Traditionally, travel and tourism hotspots in New Jersey have been the Atlantic City area, region around the Newark Airport and especially the Jersey Shore line. Visitation in the Delaware River region of western New Jersey and the northern Skylands region grew faster than the hotspots. If New Jersey seeks to remain a destination for tourists, resources that attract visitors from both outside of New Jersey and within must be protected.

### **Ecotourism**

Open space preservation is vital to the New Jersey economy. The 2006 National Survey of Hunting, Fishing, and Wildlife-Association Recreation found that 2.1 million people, including residents and nonresidents at least 16 years old, fished, hunted or watched wildlife in New Jersey in one year. Most (80%) of the participants engaged in wildlife-associated activity that included observing, feeding and photographing wildlife. In 2006, state residents and nonresidents spent \$1.7 billion on wildlife recreation in New Jersey. Of that total, trip-related expenditures were \$690 million (41%) and equipment purchases totaled \$804 million (48%). The remaining \$169 million (10%) was spent on licenses, contributions, land ownership and leasing, and other items. Most of the wildlife observation takes place around the home but over half a million residents travel to watch wildlife.<sup>21</sup>

In a study by the U.S. Fish & Wildlife Service, 34.8 million people visited a national wildlife refuge in 2006 generating \$1.7 billion in economic activity and creating \$27,000 jobs nationwide. A total of \$185 million in tax revenue was generated for municipal, county, state and federal governments from this tourism. The national study included a case study of the Edwin B. Forsythe National Wildlife Refuge near Atlantic City. Recreation visits to the refuge total 195,821 with visits fairly evenly distributed between residents (52%) and non-residents (48%). Residents spent \$991,000 and nonresidents spent \$1.8 million in a year on this recreation. Most of the visitors enjoyed non-consumptive recreation activities (trails, birding, water use) and accounted for 63% of the total expenditures of \$2.8 million. The report estimated that the economic activity generated in the area by refuge recreationists totaled \$4.4 million, including the creation of 41 jobs, \$1.4 million in job income, and \$714,500 in total tax revenue for the area. Non-resident visitors provided a \$2.9 million stimulus to the local

economy. The study suggests that every \$1 of budget expenditure for the refuge leveraged at least \$5 for the local economy.<sup>22</sup>

For those communities interested in attracting or maintaining the outdoor recreational tourist industry, the preservation of open spaces is of key importance. Open spaces (coupled with proper stewardship) protect natural resources, and it is the presence of natural resources that attracts tourists and recreation enthusiasts.

### **Agritourism**

Only by renewing efforts to preserve farmland and the rural spaces surrounding them will agritourism continue to develop as a viable tourist attraction in New Jersey.

Agritourism (the business of making farms travel destinations for educational and recreational purposes<sup>23</sup>) in New Jersey represents a natural progression in the evolution of many farm operations and is consistent with past and current state policies to support the farming industry. Equally as important, agritourism is a natural complement to production agriculture. However, the full potential of agritourism has not been realized in New Jersey. In a 2006 survey of farmers by the New Jersey Department of Agriculture, many farmers felt constrained by issues such as liability, lack of funding and state programs, and municipal and state regulation---in expanding from traditional farm operations. Yet tremendous opportunity exists to cultivate agritourism development in the state. Proactive policy and strategic investment of resources would alleviate constraints facing farmers interested in providing on-farm recreational or educational activities to the public.<sup>24</sup>

The farmers in New Jersey who have expanded into agritourism have shown entrepreneurial creativity, as revealed in the diversity of income producing activities offered. The 2006 survey found 92 different agritourism activities offered on New Jersey Farms—Arts Festivals, Bee-Keeping Classes, Farm Vacations, Lectures for Clubs, Music Events, School Farm Camping for Inner City Kids, etc.<sup>25</sup>

According to the 2007 Census of Agriculture, total reported income from agri-tourism and recreation services, including on-farm hunting and fishing activity in New Jersey, grew from \$1,229,000 in 2002 to \$24,700,000 in 2007. The number of farms providing agri-tourism grew from 204 in 2002 to 322 in 2007, a 58% increase.<sup>26</sup> The value of agricultural products sold directly to individuals for human consumption rose 57%, from in \$19,126,000 in 2002 to \$30,106,000 in 2007, representing almost 19% of the market value of total agricultural products sold in New Jersey. A total of 1,931 farms market directly to the individual consumer, up from 1,769 farms in 2002. (survey did not include nursery, greenhouse, floriculture, or Christmas tree sales).<sup>27</sup>

The National Agricultural Statistics Service reports that the trend in farm profitability in New Jersey has been downward-- 47.2% of farms reported net gains from farming in 1987 as compared to 38.3 percent in 2002. Agritourism, for many farmers, is, therefore, an important strategy for enhancing and stabilizing

farm incomes. The Food Policy Institute study showed that more than two-thirds of those farmers surveyed drew at least half of their income through agritourism activities and many of those farmers were faring well enough that they plan to expand their operations.<sup>28</sup>

“[Agritourists] valued a number of different attributes of their farm trips. Purchasing agricultural products and picking fruit and vegetables was important, but enjoying the rural scenery around the farm... [was] more important...In general, en route to a farm people would like to see more woodlands and grazing animals, about the same amount of farmland, and less development”<sup>29</sup>

### **Heritage Tourism**

New Jersey is blessed with a history of western settlement since colonial times and an awareness of its American Indian heritage. Subsequent milestones of our contributions to our nation’s history remain part of New Jersey’s cultural landscape. Revolutionary battle sites, iron mines, forges, silk mills, early settlements, architectural examples from every era of our history, canals, waterways, historic turnpikes, National Historical Landmarks and Parks, nationally listed historic sites and districts and National Heritage Areas—one does not have to travel far to interpret the fabric of the nation’s history.

Many sites that could contribute to the telling of our rich history are bulldozed instead of recognized and preserved or thoughtfully re-used. Many too stand neglected, lacking proper stewardship.

In 2003, despite widespread community concern and placement on both the Morris County Heritage Commission and Preservation New Jersey’s Top 10 Endangered Lists, the Bayley Ellard Carriage House in Madison was razed to make room for an assisted living facility. An adaptive reuse plan had been proposed, but failed to receive a necessary zoning variance. The 102 year old brick and limestone stable was built by Carrere & Hastings, designers of the New York Public Library. In 1902, its plan was featured in an issue of *Architectural Review*.<sup>30 31</sup>

Heritage-based travel, like all segments of the tourism industry, provides numerous economic benefits in destination areas. The attraction of new visitors to a site or area increases spending and may lead to the creation of new jobs and businesses, thereby stimulating the local economy both directly and indirectly. Taxes on spending benefit all members of a community, not just those directly involved in the tourism industry, through the improvement of physical infrastructure. Realization of the existence and significance of its unique resources by local residents is likely to enhance community pride and help strengthen sense of place and identity.

Heritage-based tourism can also be tied into the notion of sustainability. The creation of tourism attractions using existing assets—whether natural, cultural, or built—negates the need for the building of new facilities, allowing communities to “look to the past for a sustainable future.”<sup>32</sup>

The greenest building is the one already built. A prominent example is in downtown Morristown, NJ. In 1918 construction was completed on an Italian Renaissance palazzo style mansion for Theodore Vail, founder of the Bell System and AT&T. Soon after his death in 1922 the building was acquired by Morristown and used as its Town Hall. In the late 1980s, the town moved to a different building and the Vail Mansion lay vacant. Recently, the mansion was acquired by a developer and converted into commercial space, connected to a 35-unit luxury condominium. The original mansion and its façade have been restored along with the reflecting pond that bisects the mansion's park-like lawn. The colonnaded entrance to the public park includes a fully restored bronze World War I memorial---one of Morristown's many examples of public art and memorial statues. "I like to think of [adaptive reuse] as the preservation of our cultural patrimony, the recycling of our built environment," says David Abramson of the Vail project, a preservation and adaptive reuse specialist.<sup>33</sup>

Researchers found that heritage tourists stay 4.7 nights longer than the average tourist, and spend 78% more in restaurants than other travelers. A study specifically focused on heritage tourism in a nine-county area of western Pennsylvania found direct annual economic impacts of \$12.2 million and indirect impacts of \$5.6 million. This economic activity was found to support 337 jobs annually.<sup>34</sup>

### ***"Down the Shore"***

Good water quality, healthy beaches, and abundant recreational opportunities are essential to attracting visitors and sustaining coastal tourism.<sup>35</sup> New Jersey is home to 127 miles of coastline. New Jersey's beaches serve as a recreational outlet for the nearly 30 million residents of the region who live within a two-hour drive of the coast. It is estimated that 17.8 million trips are made to the New Jersey shore by visitors each year. In addition, 61% of New Jersey's 8.4 million citizens live within 25 miles of the shoreline. The New Jersey shore is the foundation for a \$50 billion coastal economy that includes tourism, fisheries, and aquaculture. Coastal tourism comprises more than half of New Jersey's \$27.7 billion tourism industry. Coastal tourism supports nearly 500,000 jobs while indirectly generating \$16.6 billion in wages and \$5.5 billion in state tax revenue. One out of every six jobs in New Jersey is related to the coastal zone, making coastal revenues the state's largest economic sector.<sup>36</sup>

In New Jersey, marine ecosystems provided the second-largest dollar amount of ecosystem services: \$5.3 billion per year for estuaries/tidal bays and about \$390 million per year for other coastal waters, including the coastal shelf out to the 3-mile limit.<sup>37</sup>

The largest known source of pollution to the nation's beaches continues to be contamination from stormwater runoff, which caused more than 10,000 closing and advisory days in 2007.<sup>38</sup> Loss of open space, the natural filter of stormwater runoff, due to overdevelopment in the vicinity of beach communities puts at risk one of New Jersey's most important economic engines.

## **Urban revitalization**

In cities throughout America, where an investment is made to create, expand or renovate a park, neighborhoods plagued by drug dealing and other street crime, boarded up storefronts and vacant apartments become vibrant, attracting new residents, stores to serve them and businesses eager to attract workers.

In 1980, Bryant Park, the square behind the main branch of the New York Public Library was a haven for drug dealers and had an average of 150 reported robberies a year. Because of this bleak distinction the square was commonly referred to as "Needle Park".

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." 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% and 225%, compared with increases of between 41% and 73% 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."

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.

The green space surrounding Portland, Oregon, helped build its reputation as one of the country's most livable cities. Companies like Hewlett-Packard, Intel, and Hyundai have been drawn to the region by the forests, orchards, and creeks on the outskirts of Portland's urban area. Quality of life is a determining factor in real estate values and economic vitality. A 1998 real estate industry report calls livability "a litmus test for determining the strength of the real estate investment market.... If people want to live in a place, companies, stores, hotels, and apartments will follow."<sup>39</sup>

## **Historic Preservation- "Recycle Your Aluminum Cans AND Your Historic Buildings"**

Research documents the very positive effect that historic-restoration has on local economies and the state as a whole. The Rutgers Center for Urban Policy Research found that \$1,000,000 spent in rehabilitating an older building creates 29.4 jobs - 13 in the construction industry and 19 in other parts of the economy. The economic impact of preservation construction surpasses that of new construction. Local officials who wish to increase economic opportunities in

their towns should be aware of the greater economic benefits of preservation construction.<sup>40</sup>

A study undertaken for the state of New Jersey, New Jersey Historic Trust 1998 (summarizing results from an extensive study conducted by David Listokin and Michael Lahr of Rutgers' Center for Urban Policy Research) maintains that: "Each \$1 million spent on non-residential historic rehabilitation creates two jobs more than the same money spent on new construction. It also generates \$79,000 more in income, \$13,000 more in taxes, and \$111,000 more in wealth." In the sector of heritage tourism—an important part of the economic contributions of historic preservation—the researchers found that heritage tourists stay 4.7 nights longer than the average tourist, and spend 78% more in restaurants than other travelers. The study also reports that "[p]reservation in New Jersey creates 21,575 jobs each year, 10,140 of them in the state", and concludes that historic preservation investments create more wealth and more jobs than an equal investment in either new construction or highway construction.

"Our research showed that preservation was often a superior economic catalyst compared with other investments. For example, in New Jersey, \$1 million in non-residential historic rehabilitation was found to generate 38.3 jobs nationally and 19.3 jobs in-state. In comparison, \$1 million in new nonresidential construction was found to generate fewer jobs: 36.1 jobs nationally and 16.7 jobs in-state...

"The results of the New Jersey investigation... show that the public cost of capital grants for historic rehabilitation that were distributed by the New Jersey Historic Trust was easily offset by state tax revenues resulting from those investments."<sup>41</sup>

"Virtually every analysis that has been done on the economic impact of [historic district] protection has indicated that values have maintained at worst, and usually are enhanced, because of historic district status," writes real estate and historic preservation expert Donovan Rypkema. In New Jersey, it was found that, "Properties listed on the national, state or local historic registers [throughout the state of New Jersey] have a market value of \$6 billion, of which about \$300 million can be attributed to the value-enhancing effect of historic designation."<sup>42</sup>

"After decades of declaring that communities had to choose between historic preservation and economic development, professionals in the field are finally realizing that is a false choice," Rypkema says, "That instead, historic preservation is an excellent vehicle for economic development," for both the short- and long-term. Property values for buildings in historic areas increase more on average than contemporary developments and tend to be more stable in turbulent times. The more stringent historic districts typically yield the greatest appreciation and price stability because they preserve the context of the neighborhood. "Nobody is paying a premium for the privilege of having to go and appear before some goofy historic district commission," Rypkema says. "Rather it is the assurance that the lunatic across the street isn't going to be

allowed to do something with his property that will have an adverse impact on the value of your property." There are other arguments for historic preservation, like sustainability, smart growth, attracting a creative class and affordable housing. For instance, 25 percent of the waste that ends up in landfills is from construction, the majority of which comes from razing buildings. To put that in perspective: tearing down one building erases the environmental benefit of recycling 1.344 million aluminum cans, Rypkema cites. "We've not only wasted an historic building, we've wasted months of diligent recycling by the good people of our community," Rypkema says. "Now why doesn't every environmentalist have a bumper sticker saying 'Recycle your aluminum cans AND your historic buildings.'"<sup>43</sup>

Amy Facca of the New York State Historic Preservation Office offers the following statistics in the state's 2008 Preservation Plan, "Historic preservation is a proven, incremental, asset-based approach to downtown revitalization in urban commercial districts, villages, and rural hamlets...Collectively, efforts in communities of all sizes and locations have resulted in 199,519 rehabilitation projects, 370,514 new jobs, 82,909 new businesses, and nearly \$45 billion in reinvestment... Dollar for dollar, historic preservation is one of the highest job-generating economic development options available... In New York State, \$1 million spent rehabilitating an historic building ultimately adds \$1.9 million to the state's economy."<sup>44</sup>

### **Investing in People**

Parks can help adults and young people to acquire work experience, as demonstrated by agencies that have provided "supported" employment opportunities to those in transition from welfare to work. Park maintenance is continuously needed; it offers job training opportunities as well as long term employment for members of the community.

The Garfield Park Alliance in Chicago offers a two-year docent program that helps prepare teens on the city's West Side for life after high school. Following a core training program that emphasizes leadership development, personal and social skills-building, and job readiness, participants move on to work as docents in the Garfield Park Conservatory, explaining exhibits to park visitors. The Alliance also worked with the Mayor's Office of Workforce Development to employ youth apprentices as artists in creating a tile mosaic at the nearby elevated rail station.

Parks also can help adults acquire work experience, as demonstrated by agencies that have provided "supported" employment opportunities to those in transition from welfare to work. In Brooklyn, Prospect Park's welfare-to-work program (and similar ones throughout New York City), work crews consisting of recent welfare recipients perform routine maintenance. Parks are a particularly fruitful area for such efforts because the work is low skill, continuously needed, and organized so that a single park employee can supervise a relatively large work crew.<sup>45</sup>

## **The Business of Land Preservation**

An entire business sector has grown up to support conservation transactions. The state requires a certain amount of due diligence work that has created or enhanced professional support firms and companies. These businesses employ trained and certified professionals who perform appraisals, environmental assessments, engineering studies, title work, legal review and advice, and surveys. A rule of thumb for most land transactions is that the due diligence work will cost from \$10,000 to \$15,000 per transaction.<sup>46</sup> According to the Garden State Preservation Trust annual report for 2007, a total of 316 open space and farmland projects took place. Using the minimum of \$10,000 per transaction, land preservation using state funds contributed at least \$3,160,000 to New Jersey's economy in one year. This does not count additional professionals in engineering, design and other fields required for recreation development and historic preservation projects. Nor does this figure include transactions undertaken by nonprofits and local government without state funding.

## **Land and Historic Conservation Creates Jobs**

The business of land conservation has created jobs in over 100 nonprofit organizations that work to protect open space and farmland preservation. Jobs are also created at the municipal, county and state government level to manage land preservation, especially if the local government collects taxes into a dedicated fund. There is no accounting of the number of land conservation professionals employed in the state.

In addition, most open space lands become a park, an area that invites and accommodates public recreation use. Park development ranges in intensity-- from highly developed including ball fields, ball courts, pools and support buildings to trails, benches, and signage. Much of this development, including maintenance and programming of these areas and facilities, creates a labor force.

A study produced in 2006 by the New Jersey Department of Environmental Protection, *Economic Value of New Jersey's State Parks and Forests*, stated that public recreation lands supported over 7,000 jobs in the state. "Public and private spending of \$279 million/year related to State parks and forests contributes to New Jersey's economy by supporting business and employment opportunities that result in the production of cash income. Because of multiplier effects, the above spending supported \$347 million/year in total sales; after deductions for sales of intermediate goods and services, those sales constitute \$198 million of New Jersey's Gross State Product (GSP). After deductions for non-income items, this portion of the GSP translates into \$126 million/year of personal income. The \$347 million of sales supported about 7,000 jobs."<sup>47</sup>

The development of two small parks in Brick Township illustrates how open space creates jobs. The project totaled \$1.5 million and employed 38 people, including a general contractor who oversaw earthwork, grading and drainage work (8 people) and various subcontractors for irrigation (4 people), electrical work (4 people), fencing (3 people), paving and striping (8 people), soils borings (2 people), colorcoating (3 people) and playground safety surface (6 people). If the project had included a building, the number of jobs would have doubled to include carpenters, masons, plumbers, etc. <sup>48</sup>

Redevelopment, especially in more populated areas, will often result in park creation. At times the park will result from and complement a redevelopment project; at others a particular location for a park will stimulate redevelopment investment. A 2008 survey of big cities by the Center for City Park Excellence found 75 parks created by redevelopment and housing authorities. The parks ranged in size from .2 acres to 46 acres to 106 acres. Development costs ranged from \$130,000 to \$48 million. <sup>49</sup>

A 2008 study commissioned by the National Parks Conservation Association found that every federal dollar invested in national parks generates at least \$4 in economic value to the public. It is estimated that investments in the parks' ready-to-go projects will help to improve safety and public access, restore national heritage treasures, and bring immediate economic benefit--including upwards of 57,000 new jobs—above and beyond the federal workforce already managing the national parks.<sup>50</sup>

### **Other Economic Stimulus Provided by Land Conservation**

In typical land conservation transactions, state funding is matched at least dollar for dollar from other sources. The match is raised from local government open space and farmland trust funds, private investments, foundations, federal dollars, landowner donations, and a variety of other sources. A strong state commitment attracts more investment in New Jersey from other sources.

Landowners receive cash when they sell their land or a conservation easement—cash that may be invested in the local economy. The public receives two benefits—those provided by the protected land and cash in the area's economy. Many landowners, particularly farmland owners, reinvest in their farming operation or make other improvements to the property. Others may invest in another income-producing activity or another development, further creating jobs and economic activity in the state. A survey of farmers in four Maryland Counties found participants used the money they were paid to preserve their land in ways that benefited the local economy, such as debt reduction, farm investment, farming operation financing, and additional land or farm equipment purchasing.<sup>51</sup>

Landowners experiencing personal financial crises can sell their land for conservation. The sale allows the landowner to avoid foreclosure, invest in home maintenance or pay bills in retirement or unemployment. According to

the Bureau of Labor Statistics and Bureau of Economic Analysis, an additional \$1 million in the output of goods and services produced by labor and property would create and/or maintain about 10.7 jobs.<sup>52</sup>

## **Environmental Benefits - Natural Capital**

### **Biodiversity & Wildlife Habitat**

Contiguous core forests, rural open space, connected greenways, and suburban and urban parks all play a role in encouraging diversity in plant and wildlife species. Healthy core forests sequester large amounts of carbon from the atmosphere. Large areas of non-fragmented open space are habitat to the kinds of wildlife that require large foraging areas, including many threatened and endangered species. They also provide the pathways for migratory birds and other species.

Biodiversity in urban areas provide many benefits. First, natural habitats serve the social need for a more aesthetic and healthy environment. Second, living plant communities modify the physical world in constructive ways: they clean and moderate the microclimate, promote groundwater infiltration, retard flooding and soil erosion, and provide habitat for wildlife. Third, living plant communities enhance property values in locales where people wish to live near green spaces.<sup>53</sup>

New Jersey has extremely diverse and ecologically significant natural communities. Larger, unfragmented forest tracts are among the largest on the mid-Atlantic coast and are home to resident bobcats, barred owls, and timber rattlesnakes and provide essential stopover habitat for most of the eastern U.S. migratory population of songbirds and raptors. Similarly, New Jersey's Atlantic and Delaware Bay coastal habitats are home to bald eagles, northern harriers, black rails, and piping plovers and are critical to millions of migratory raptors, waterfowl, shorebirds, butterflies, dragonflies, and fishes. Woods, wetlands, streams, and fields support a staggering array of wildlife species, including 73 state endangered and threatened species, some of which are recognized as globally rare.<sup>54</sup>

Without protected lands, New Jersey could not boast such diverse and significant natural communities. According to the NJDEP's 2008 Wildlife Action Plan, "habitat destruction is the greatest threat to New Jersey wildlife. It is equivalent to actually 'taking' or 'killing' wildlife since an organism deprived of its ability to feed or breed can no longer exist".<sup>55</sup> Acquisition of critical wildlife habitat has been, and continues to be, key to protecting New Jersey's biodiversity.

Biodiversity is not an isolated natural resource. Much depends on thriving and natural bio-systems. Ecotourism, for one, would not be possible. New Jersey's Wildlife Action Plan is predicated on the understanding that it is more economical to prevent a species from becoming rare than it would be to

recover a species once it has become classified as rare or endangered by state or federal statute.

As an example, the combined legal, regulatory, educational, habitat renewal and monitoring efforts to reestablish the bald eagle in New Jersey is costly. In hindsight, policies that retained the landscapes necessary for the diversity of our native species would have been a smart investment. In many places still, such policies are lacking.

### **Global Climate Change, Energy Savings and Air Quality Impacts**

Trees in our urban and suburban communities have been shown to have significant and multiple impacts upon air quality, reduction of greenhouse gas emissions and energy cost savings. Encouraging walking and biking as an alternative to automobile use, with interconnected greenways and parks, result in reduced carbon emissions.

Through transpiration and shade, trees lower air temperatures and simultaneously lead to reduced pollution emission and formation, reduced summertime energy use of nearby buildings and consequent pollutant emissions from power plants, increased human comfort, and reduced thermal stress. Trees directly remove pollution in the atmosphere through interception of particles and uptake of gases. Trees tend to reduce ozone. In addition, conversion of forest stands to urban development will most likely increase total volatile organic compound (VOC) emissions in the area due to the relatively high VOC emissions associated with urbanization.<sup>56</sup>

Aside from reducing the energy required to cool buildings, the preservation or planting of shade trees reduces energy costs. The evaporation from one large shade tree can equal the cooling effect of 10 room-sized air conditioners operating 24 hours per day<sup>57</sup>.

Mature tree canopies can reduce air temperature five to ten degrees, helping to counteract the urban heat island effect, according to the University of Washington's Center for Urban Horticulture. According to American Forests, Trees in Atlanta remove 19 million pounds of pollutants annually, a service worth \$47 million.<sup>58</sup>

In a U.S. Forest Service study, one tree in its 50-year lifetime provides \$62,000 in air pollution control.<sup>59</sup> A 2007 study completed for the New York City Parks Department found that electricity and annual natural gas saved annually from both shading and climate effects of trees provided energy cost savings of \$27.8 million or \$47.63 per tree. The study found net carbon dioxide reduction is 113,016 tons, valued at \$754,947 or \$1.29 per tree. New York City's street trees intercept rain, reducing stormwater runoff. Citywide, the average tree intercepts 1432 gallons of stormwater each year, valued at \$61 per tree. The estimated total annual benefits associated with aesthetics, property value increases, and other less tangible improvements are approximately \$52.5 million or \$90 per tree on average. All of these annual benefits add up to \$121.9 million, with an average of \$209 per tree. New York City spends approximately \$21.8

million in a typical year planting new trees and maintaining existing public trees (\$37/tree). New York City's street trees are a valuable asset, providing approximately \$100.2 million or \$172 per tree (\$15 per capita) in net annual benefits to the community. Over the years, the city has invested millions in its urban forest. Citizens are now receiving a return on that investment—trees are providing \$5.60 in benefits for every \$1 spent on tree planting and care.<sup>60</sup>

### **Water Quality and Quantity**

More than a third of the nation's streams, lakes, and estuaries are impaired by some form of water pollution. Most pollutants result from nonpoint source pollution activities, including runoff from agricultural lands, urban areas, construction and industrial sites, and failed septic tanks. These activities introduce harmful sediments, nutrients, bacteria, organic wastes, chemicals, and metals into surface waters. Damage to streams, lakes, and estuaries from nonpoint source pollution was estimated at about \$7 billion to \$9 billion a year in the mid-1980s. Nonpoint source pollution remains the nation's largest source of water quality problems.<sup>61</sup>

Forests reduce road runoff by both intercepting rainfall in its canopy and absorbing rain in the forest's soil base. The effects of heavy rainfall are moderated, reducing flooding and the need for expensive stormwater treatment facilities. Pollutants are filtered out of road runoff in the soil base as the runoff percolates towards underground wells, improving water quality.

In a study of runoff changes in Victoria, Australia, following the clearing of a forest, the average maximum increase in runoff occurred two years after clearing and was approximately equal to an additional 33 millimeters of runoff per year per 10 percent of area cleared.

Forests provide watershed stability and protect stream quality.<sup>62</sup> Legislation in New Jersey has created vast regional planning areas to protect the forests and natural resources that safeguard drinking water supply. The Kirkwood –Cohansey Aquifer beneath the surface of the Pinelands holds 17 trillion gallons of water replenished every year with 45 inches of rain. Half a million New Jersey residents enjoy some of the purest drinking water in the world from this Aquifer. The pineland forests are protected through federal and state legislation creating the National Pinelands Reserve. The Highlands region in north Jersey supplies half of New Jersey's population with clean drinking water. Passed in 2004, the Highlands Water Protection and Planning Act places growth restrictions within the region to protect the forests and natural systems that safeguard the water supply.

### **Preventing Floods**

According to the U.S. Army Corps of Engineers, flood damages in the U.S. average \$4.3 billion each year. But a protected floodplain contains no property to be damaged and acts as a permanent "safety valve" for flooding, reducing destruction to developed areas downstream. A 1993 study by the Illinois State

Water Survey found that for every one percent increase in protected wetlands along a stream corridor, peak stream flows decreased by 3.7 percent. Communities across the nation are learning that building in floodplains is an invitation to disaster, despite expensive dike and levee systems that simply increase flooding farther downstream. Expense piles on expense as residents and businesses demand costly drainage improvements, flood control projects, flood insurance, and disaster relief.

In the heavily developed floodplain of New Jersey's Passaic River, for example, inappropriate development resulted in \$400 million in flood damages in 1984 alone. One mitigation proposal envisions construction of a \$2.2 billion tunnel; another would require the purchase and condemnation of 774 homes. More and more governments at all levels are prohibiting development in floodplains or are acquiring floodplains for permanent flood protection.<sup>63</sup>

Other intact landscapes such as coastal vegetation can reduce the damage of wave action and storm surges<sup>64</sup>, no small consideration given New Jersey's coastline and the tourist dollars generated by beachgoers.

## Health Benefits

### **Psychological Well-Being**

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 land use 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.

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. 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."

Others have extended this idea to postulate "an affinity for nature that goes beyond living things, to include streams, ocean waves, and wind." 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."<sup>65</sup>

## **Disease Prevention and Improved Recovery Rates**

Natural environments have shown to have both direct and indirect impacts on preventing disease and decreasing disease recovery times. Although the research has not quantified the dollar value of these impacts, the correlation between maintaining natural environments and physical health is significant.

The pharmaceutical industry continues to discover new treatments for disease in the species found in natural environments within the continental United States. Rosy periwinkle was the first plant used in cancer treatment. Recently it was discovered that taxol, from the Pacific Yew in the Pacific Northwest ancient forests, combats breast cancer. Blood from the king crab is used in the diagnosis and treatment of meningitis. Research on the diet of the Hermit Thrush led to the discovery of new compounds that influence the heart rate, either slowing it or increasing it, with a possible application for the treatment of heart disease. A species of wild corn was used to stop the spread of a fungus that wiped out 15 percent of the U.S. corn crop in the 1970s.<sup>66</sup>

Once numerous on New Jersey's Atlantic beaches and the Delaware Bay coastline, the horseshoe crab was protected by a state legislated moratorium on its harvest as fish bait in March, 2008. The moratorium was enacted to protect the endangered red knot, a migratory shorebird that relies on horseshoe crab eggs as a food source. The horseshoe crab has proven to be invaluable to the pharmaceutical industry too. Its blood, which is extracted in a non-lethal procedure, turns color at the presence of the same bacteria that infect humans.<sup>67</sup>

To the extent that greenways can reduce automobile miles traveled, they help mitigate health problems associated with fossil-fuel consumption. One of these is respiratory disease resulting from increased air pollution. At the Third Ministerial Conference on Environment and Health, held in London in 1999, researchers presented results from a study on the health effects of air pollutants from traffic in Austria, France, and Switzerland and their related costs, and later republished the findings in a WHO report. They found that vehicle-related pollution caused more deaths than traffic accidents.<sup>68</sup>

Proximity to green environments has shown to have a positive effect on overall health and fosters a sense of well-being. 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.<sup>69</sup>

## **Overcoming Obesity**

More than half of all adults in the United States are considered overweight or obese. Obesity has been shown to increase the prevalence for coronary heart disease, gallbladder disease, and type 2 diabetes.<sup>70</sup>

Overweight and obesity continues to increase in children and adolescents. Overweight children and adolescents are now being diagnosed with impaired glucose tolerance and type 2 diabetes, and they show early signs of the insulin resistance syndrome and cardiovascular risk.<sup>71</sup>

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.

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. 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.

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 land uses reduce the probability that residents will be obese.<sup>72</sup>

## **The Green Effect on Attention Deficit Disorders**

About 2 million U.S. children suffer from attention deficit disorder (ADD), a condition that negatively impacts academic performance, peer relationships, and family harmony. In addition, children with ADD are at greater risk than their peers for low self-esteem, anxiety, and depression. Current treatments of medication and behavioral therapy have serious side effects or limited efficacy.

Researchers have discovered that children with ADD can concentrate on schoolwork and similar tasks better than usual after taking part in activities in green settings, such as walking through or playing in a park. And the greener a child's play area, the less severe the symptoms.<sup>73</sup>

## **Sustainable Communities**

### **Reduction in Crime, Incarceration and Juvenile Delinquency**

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.

In Fort Myers, Florida, police documented a 28 percent drop in juvenile arrests after the city built a new recreation center in the heart of a low-income community. Young people's school grades also improved significantly. Importantly, building parks costs a fraction of what it costs to build new prisons and increase police-force size. In Fort Worth, Texas, crime dropped 28 percent within a one-mile radius of community centers where midnight basketball was offered. In the areas around five other Fort Worth community centers where the programs were not offered, crime raised an average of 39 percent during the same period.<sup>74</sup>

The adjacency of greenery in a park might lessen boundary pushing or delinquent behavior, as indicated in research on low-income African-American boys. Young boys who live near trees and parks also did better in school, had better peer relationships, and interacted better with their parents.<sup>75</sup>

### **The “Most Natural” Classroom**

Public lands and recreation areas serve school districts and students by providing alternative sites and methods of learning. Research has demonstrated far-reaching benefits, including improved cognitive and social skills, higher scores on standardized tests, greater enthusiasm among teachers for instruction, and higher attendance records, when the environment is used as an integrating context for learning.

In Worcester, MA, Clark University students recently conducted a project that included detailed forest mapping with multi-season satellite imagery. The high-resolution maps developed through this forest-based research have a number of potential uses, such as targeted field sampling to address insect and disease problems, hiking guides, location of non-timber forest products, links to GPS for real-time forest interpretive programming as a tourist attraction, and general forest planning.<sup>76</sup>

### **Traffic Control**

Land conservation reduces traffic congestion by limiting development and providing travel alternatives via trails, bikeways, and greenways. Americans lose \$78 billion per year in the costs associated with traffic delays and wasted fuel.<sup>77</sup>

In the two years since its opening, the Eliza Furnace Trail [Pittsburgh] has proven to be a success among commuters and recreational users alike. Paralleling the former Baltimore and Ohio rail tracks, the trail runs adjacent to Western Pennsylvania's busiest interstate highway and runs through the Riverfront Office Park. As a connector to downtown Pittsburgh from the neighborhood of Greenfield, the trail has successfully decreased the number of motorized commuters. Its popularity has already initiated plans for expansion with the city's larger trail network. “We've proposed changing what is largely a recreational system of bike trails and paths to a fully commuter system,” said Richard Meritzer senior city planner in a June 11, 1999 interview with Post-

Gazette Staff Writer Don Hopey. Meritzer went on to say, “When it’s completed, anyone will be able to get anywhere in the city by bike.” The Eliza Furnace Trail has not only encouraged recreational activity, but it has encouraged the use of non-motorized transportation within the city.<sup>78</sup>

### **Community character**

Our land is our legacy, both as we look back to the past and as we consider what we have of value to pass on to future generations. Public awareness of the multiple benefits of working lands has led to greater community appreciation of the importance of keeping land open for fiscal, economic and environmental reasons. As a result, people increasingly are challenging the perspective that new development is necessarily the most desirable use of agricultural land—especially in rural communities and communities undergoing transition from rural to suburban.<sup>79</sup>

The preservation of a viable agricultural lifestyle and landscape is a commonly held goal in New Jersey. It is one of the major goals of both the State Development and Redevelopment Plan<sup>80</sup> and the Highlands Regional Master Plan.<sup>81</sup> Since its inception in 1985, the State Agricultural Development Committee’s Farmland Preservation Program, working in conjunction with County Agricultural Boards, has preserved 1,810 farms, or 176,435 acres, as of September, 2008.<sup>82</sup> Through the purchase of development rights the farm must remain in agricultural use for perpetuity. The benefits of these transactions are many; the agricultural landscape is preserved, the monies paid to the farmer helps buoy the local economy, and farming, as a lifestyle remains affordable. Small and beginning farmers are discovering that protected land may be their best hope for buying or leasing farmland because land is much less expensive after the development rights are gone.<sup>83</sup>

### **Social cohesion**

Parks help build and strengthen ties among community residents by bringing people together, including those who are otherwise divided by race or class, and by helping them work together on common projects. These ties—often labeled “social capital”—represent subtle but important assets for a community. They provide avenues through which information, values, and social expectations flow, and they empower people to tackle communitywide problems, embark on collective actions, and advocate effectively for their community. The promise of social capital as a vital ingredient in neighborhood health rests on a solid scientific foundation. Recent research demonstrates, for example, that a neighborhood’s collective efficacy—people’s connections with one another and their capacity to work together to achieve shared goals—can reduce crime and disorder, even in very poor communities. Research also points to the unique role that parks in particular can play in building the relationships that constitute social capital. For example, research on low-income housing developments has found that park-like public spaces encourage residents to

leave the isolation of their apartments, socialize with one another, and form lasting ties. Moreover, the higher levels of social capital that develop in these settings contribute both to individual health and well-being and to the security and livability of the development as a whole.<sup>84</sup>

“Friends of” organizations throughout New Jersey provide volunteer opportunities, engaging a spectrum of individuals to work together, enhancing the quality of their communities as well as finding a common civic and social focus. The Morris County (NJ) Park Commission alone has seven such groups; The Morris County Park Alliance, Friends of Historic Speedwell, The Willowood Foundation, Friends of the Frelinghuysen Arboretum, Friends of Fosterfields and Cooper Gristmill, the Mount Hope Conservancy and the Morris Trails Partnership.

The Great Swamp Watershed Association, spanning ten municipalities in Morris and Somerset Counties, relies on a dedicated cadre of volunteers; bringing together individuals, academic institutions, corporate sponsors and Boy and Girl Scouts. Volunteering has greatly augmented the efforts of the association’s limited staff with such projects as stream monitoring and restoration, invasive species control, trail creation and maintenance, advocacy and community education. Dedicated volunteer support has resulted in the equivalent of 2,000 person hours of work in 2008.<sup>85</sup>

Prospect Park in Brooklyn—through its Community Advisory Committee—provides an excellent example of how parks can help people work together to achieve common goals. The Community Advisory Committee has about 90 members, representing a wide range of organizations and interests from the neighborhoods that surround the park. The Committee meets monthly and consists of four working groups—operations, advocacy, education, and special events/membership. Twelve local officials also attend these meetings. In addition to the Committee’s numerous accomplishments in educational outreach, business support, and advocacy for new public funding, it has strengthened the park’s ties to the many ethnic and racial groups throughout Brooklyn. The park’s hosting of the weekend festival *Boricua*, for example, prompted representatives from the Puerto Rican community to organize a community group to plan and raise funds for future weekend festivals.<sup>86</sup>

City parks make inner-city neighborhoods more livable. They offer opportunities for recreation and exercise to at risk and low-income children, youth, and families who might not be able to afford them elsewhere. They also provide places in low-income neighborhoods where people can experience a sense of community. Research shows that residents of neighborhoods with greenery in common spaces are more likely to enjoy stronger social ties than those who live surrounded by barren concrete. For example, a study by the University of Illinois and the University of Chicago found that for urban public housing residents, levels of vegetation in common spaces predicted the formation of neighborhood social ties. “In inner-city neighborhoods where common spaces are often barren no-man’s lands, the presence of trees and grass supports common space use and informal social contact among

neighbors," the study found. "In addition, vegetation and [neighborhood social ties] were significantly related to residents' senses of safety and adjustment."<sup>87</sup>

### **Historic Preservation: Defining a Community's Sense of Place**

Community revitalization and historic preservation are uniquely compatible principles. When used together, they create sustainable, vibrant places to live, work and play. At its essence, preservation-based community development uses existing historic resources—the older and historic built environment—to improve the quality of life for residents of all income levels. Historic preservation can be employed to create and preserve affordable housing, generate jobs, retain existing businesses, attract new ones, increase civic participation and bolster a community's sense of place.<sup>88</sup>

Ten years ago, a 153-year-old farm was sold to a homebuilder, but eight of the 319 acres plus the farm's historic buildings were donated to the (Illinois) Lake County Forest Preserve District (LCFPD) for leisure and preservation opportunities. To ensure historic preservation of the site and the utmost in public benefit, the LCFPD embarked on a three-year, multi-million dollar project that has yielded tremendous community support. The design firm sought input from children, the park district and community representatives on how to transform the property. The result is an educational facility with a series of interactive exhibits that celebrate farm living in an accessible setting.

"Bonner Farm has become an important point of pride and recreation for the community since opening in 2004," says LCFPD President Bonnie Thompson Carter. "The farm buildings, exhibits and other features work well in combination with a neighboring community park, and parents and grandparents regularly bring youngsters to the farm and park for hours of fun and adventure. School field trips are finding out about the county's agricultural past, and an active group of volunteers are caring for the vegetable garden and other plantings. The entire project has really brought history alive in a very family friendly way."<sup>89</sup>

It is important for all communities, urban and rural, to recognize the value of preserving their physical heritage through historic preservation, which can provide economic and social benefits and give residents a sense of place.<sup>90</sup>

### **Scenic Areas: A Shared Wonder of Natural Beauty is Priceless**

In memorializing the National Park Service's "Wild and Scenic River" designation to a segment of the Delaware River in New Jersey, President Clinton wrote to U.S. Rep. Rush Holt, "As you know, the future of the Delaware River, the longest free-flowing river in the eastern United States, is vital to the economy of the regions surrounding this important waterway. Wild and Scenic River designation will encourage natural and historic resource preservation and protect precious open space. By allowing local municipalities to sustain and protect the Delaware River as one of our nation's national treasures, this law will help to ensure the vitality of these communities and the quality of life of their citizens."<sup>91</sup>

A scenic environment is a valuable resource. Scientific evidence has established that individuals experience significant physiological and psychological benefits from being able to view scenes of nature and other attractive sights. Moreover, when asked how much they value having access to such quality visual experiences, individuals consistently respond that it ranks as one of their highest priorities for quality of life. Evidence also shows that by undertaking initiatives to improve the appearance of their communities, local officials can not only improve citizens' quality of life but also their communities' potential for economic development.<sup>92</sup>

### **Motivating Citizens**

Quixotic as some ecological restoration work may seem, potential benefits are not merely numerical, that is, acres replanted, threatened species recovered, salmon returning, or salamanders counted. Andrew Light, geographer and ethicist at the University of Washington, identifies important non-numerical benefits of ecological restoration, namely, the fostering of social contact among people who engage, usually as volunteers, in litter clean-ups, clearance of invasive species, and nurturing of more robust biodiversity. Light's concept of "ecological citizenship" also postulates that individuals who engage in such restoration activities gain a strengthened psychic bond to the place and to nature.<sup>93</sup>

Preliminary research suggest[s] that continued participation in volunteer activities, particularly in environmental stewardship programs promotes a sense of attachment and increased appreciation for urban natural areas...Volunteers, both temporary and long-term, are strongly motivated by the opportunity to learn new knowledge and skills. Providing opportunities for volunteers to learn more about the cultural and natural history of parks in which they are working can help encourage volunteer participation. Volunteer activities as well as educational programs can also help increase the public's appreciation and acceptance of environmental restoration efforts.<sup>94</sup>

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<sup>1</sup> Byran, Todd A. *Developments and Taxes: Facts Versus Fiction*, Association of New Jersey Environmental Commissions

<sup>2</sup> New Jersey Pinelands Commission website,  
<http://www.state.nj.us/pinelands/reserve>

<sup>3</sup> Leonard W. Hamilton, Ph.D., Ed., *The Benefits of Open Space*, Great Swamp Watershed Association, 1997

<sup>4</sup> New Jersey Pinelands Commission, *Long-Term Economic Monitoring Program, 2007 Annual Report*, December, 2007

<sup>5</sup> American Farmland Trust, Farmland Information Center Fact Sheet, *Cost of Community Services Studies*, November, 2002

<sup>6</sup> *The Value of Open Space: Evidence From Studies of Nonmarket Benefits, Resources for the Future*

<sup>7</sup> Leonard W. Hamilton, Ph.D., Ed., *The Benefits of Open Space*, Great Swamp Watershed Association, 1997

<sup>8</sup> Sherer, Paul M., *The Benefits of Parks: Why America Needs More City Parks and Open Space*, the Trust for Public Land, 2006

<sup>9</sup> New York statewide coalition, "Friends of New York's Environment", *Economic Case for Environmental Protection Fund*, White Paper, November, 2008

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