THE ECONOMIC BENEFITS OF Parks AND Open Space

How Land Conservation Helps Communities Grow Smart and Protect the Bottom Line

BY

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AND

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Riverwalk
0.75 miles to next gate.
The Riverwalk is
closed to use when
this gate is shut.

Introduction

Too often we hear that communities cannot afford to "grow smart" by conserving open space. But accumulating evidence indicates that open space conservation is not an expense but an investment that produces important economic benefits. Some of this evidence comes from academic studies and economic analysis. Other evidence is from the firsthand experience of community leaders and government officials who have found that open space protection does not "cost" but "pays."

This casebook presents data and examples that can help leaders and concerned citizens make the economic case for parks and open space conservation. Some communities protect open space as a way to guide growth and avert the costs of urban and suburban sprawl. In others, new parks have invigorated downtown businesses and neighborhood economies.

Some communities work to conserve economically important landscapes, such as watersheds and farmland, or they preserve open space as a way to attract tourists and new business. And many communities are learning that conserved open space contributes to the quality of life and community character that supports economic well-being.

Too many community leaders feel they must choose between economic growth and open space protection. But no such choice is necessary. Open space protection is good for a community's health, stability, beauty, and quality of life. It is also good for the bottom line.

By
Will Rogers
President
Trust for Public Land

Phil Schermeister

TPL President Will Rogers.

Opposite: Chattanooga Riverwalk, Chattanooga, Tennessee.

Billy Weeks

Growing Smart

Open space preservation helps communities grow smart, preventing the higher costs of unplanned development.

In the future, livable communities will be the basis for our competitiveness and economic strength. Our efforts to make communities more livable today must emphasize the right kind of growth—sustainable growth. Promoting a better quality of life for our families need never come at the expense of economic growth. Indeed, in the 21st century it can and must be an engine for economic growth.

—Vice President Al Gore

Slavic Village was designed to offer affordable housing and a public park. The development also has brought economic renewal to its Cleveland, Ohio, neighborhood.

In many ways the 1990s were a great decade for Austin, Texas. Attracted by oak-covered hillsides and a relaxed, almost small-town, atmosphere, more than 800 high-tech companies have moved to the Austin region in recent years, swelling the local tax base. *Newsweek* recently dubbed Austin "the utopian workplace of the future," and *Fortune* has designated it the nation's new number-one business city.

However, this growth has not come without cost. Destructive urban sprawl has become a headline issue in Austin, where the population swelled from 400,000 to 600,000 in the last decade and where many residents fear that Austin's success carries the seeds of its own doom. A million people now live in the Austin metro area. Roads are clogged with traffic, air quality is in decline, sprawling development threatens drinking water, and the oak-dotted hillsides are disappearing beneath houses and shopping centers. In 1998, the Sierra Club ranked Austin the second most sprawl-threatened midsized city in America.[1]

But even if Austin is one of the nation's most sprawl-threatened cities, it has also begun to mount an admirable defense. A 1998 Chamber of Commerce report recognized Austin's environment as an important economic asset worth protecting, and the city council has launched a smart growth initiative in an attempt to save the goose that lays the golden egg. The initiative includes regulatory changes in an attempt to encourage denser development patterns. It also includes efforts to protect open space. Over the last decade, Austin voters have approved over $130 million in local bonds to help create parks and greenways and protect critical watershed lands.

Some of this money is going to the purchase of open space that will attract new residents to a 5,000-acre "desired development zone," says real estate developer and Austin City Councilmember Beverly Griffith. "We're identifying and setting aside the most sensitive, the most beautiful, the most threatened lands in terms of water quality, so the desired development zone will have a spine of natural beauty down the middle of it, and that will attract folks to live and work there."

"Planning for housing, open space, and recreation is what's going to enrich the desired development zone," Griffith says. "People will be able to work and live in the same area." ►

Eric Swanson

Town Lake, Austin, Texas, is one of many greenspaces that makes the city an attractive place to live and work.

Planning for housing, open space, and recreation is what's going to enrich the desired development zone. People will be able to work and live in the same area.

–Beverly Griffith
City Councilmember, Austin, TX

Eric Beggs

Beverly Griffith.

Ask William Moorish

"Before increasing the density of a community we like to increase the intensity of nature," says William Moorish, director of the Design Center for American Urban Landscape at the University of Minnesota. Moorish cites an example from the Lake Phalen neighborhood of St. Paul, Minnesota, where a 1950s shopping center is being torn down to uncover a lake and wetland. Plans call for restoring the wetland as the centerpiece of a mixed-use neighborhood already served by infrastructure and mass transit.

Open space makes higher-density living more attractive, Moorish contends. Every community should provide infrastructure to its residents, and Moorish would expand the definition of infrastructure to include open space and a quality environment. Currently, the design of much urban infrastructure—roads, bridges, power lines, airports, water treatment plants—strips the richness of nature from communities. By preserving open space we fashion a richer, greener, more complex infrastructure that makes cities more appealing places to live. This, in turn, will reduce the pressure to bulldoze economically valuable farmland and natural areas on the urban fringe.

Many community leaders expect that the taxes generated by growth will pay for the increased costs of sprawl, but in many instances this is not the case.

Smart Growth and Open Space

Austin is not alone in its efforts to protect open space as a way of supporting local economies and guiding growth into more densely settled, multiuse, pedestrian-friendly neighborhoods. Open space conservation is essential to any smart growth plan. The most successful higher-density neighborhoods—those most attractive to homebuyers—offer easy access to parks, playgrounds, trails, greenways and natural open space.

To truly grow smart a community must decide what lands to protect for recreation, community character, the conservation of natural resources, and open space. This decision helps shape growth and define where compact development should occur.

Many Americans believe that smart growth communities are more livable than are sprawling suburban neighborhoods. But accumulating evidence also suggests that smarter, denser growth is simply the most economical way for communities to grow. This is one reason that the American Planning Association, the U.S. Conference of Mayors, the National Association of Counties, and many business leaders are getting behind the smart growth movement.

Can conservation lower property taxes?

Does land conservation force a rise in local property taxes by removing land from the tax rolls?

The answer may be yes and no, according to a pair of 1998 studies by the Trust for Public Land. The studies examined the relationship between land conservation and property taxes in Massachusetts.

In fact, the study found, in the short term property taxes did rise after a land conservation project.

But in the long term, Massachusetts towns that had protected the most land enjoyed, on average, the lowest property tax rates—perhaps because they had less development, which requires roads, schools, sewer and water infrastructure, and other services.

Every community is different, the report cautions; decisions about conservation must be informed by a careful analysis of tax consequences and broader community goals:

"The challenge when evaluating future investments is to strike a balance between what improves a community, what residents can afford and what is fair. Planning for both conservation and development is an important part of achieving that goal."[2]

Increased density saves in infrastructure costs and contains sprawl.

Larry Orman

The Costs of Sprawl Outpace Tax Revenues

Sprawl development not only consumes more land than high-density development, it requires more tax-supported infrastructure such as roads and sewer lines. Police and fire services and schools also must be distributed over a wider area.

One study found that New Jersey communities would save $1.3 billion in infrastructure costs over 20 years by avoiding unplanned sprawl development.[3]

Another predicted that even a modest implementation of higher-density development would save the state of South Carolina $2.7 billion in infrastructure costs over 20 years.[4] And a third found that increasing housing density from 1.8 units per acre to 5 units per acre in the Minneapolis/St. Paul area would slash $3 billion in capital infrastructure costs over 20 years.[5]

Many community leaders expect that the taxes generated by growth will pay for the increased costs of sprawl, but in many instances this is not the case.

- In the island community of Nantucket, Massachusetts, each housing unit was found to cost taxpayers an average of $265 a year more than the unit contributed in taxes. "Simply stated, new dwellings do not carry their own weight on the tax rolls," a town report concluded.[6]
- And in Loudoun County, Virginia—the fastest growing county in the Washington, D.C. area—costs to service 1,000 new development units exceeded their tax contribution by as much as $2.3 million.[7]
- Studies in DuPage County, Illinois, and Morris County, New Jersey, suggest that even commercial development may fail to pay its own way. In addition to making its own demands on community resources, commercial development can attract costly residential sprawl.[8] ►

But do people want to live in clustered housing?

Many communities are saving money and land by encouraging—or even mandating—clustered housing.

In a typical clustered development, homes are built closer together on smaller lots and surrounded by protected open space or conservation land.

Clustered housing is cheaper for a community to service than houses on larger lots, largely because it consumes less land and requires shorter roads, shorter utility lines and less infrastructure of other types.

But do people really want to live in clustered housing?

A 1990 study attempted to answer this question for two communities in New England, where sprawl is rapidly overwhelming the original clustered development pattern of houses gathered around a village green and surrounded by farms, forests, and other open space.

Researchers used the rate of real estate appreciation as a measure of consumer demand for homes in two clustered developments in Concord and Amherst, Massachusetts. In both communities the average clustered home appreciated faster than comparable homes on conventional lots.

Clustered housing can allow a community to meet its land protection goals without endangering property values or the tax base while allowing construction of the same number of units, the report suggests.

"The home-buyer, speaking . . . through the marketplace, appears to have demonstrated a greater desire for a home with access . . . to permanently protected land, than for one located on a bigger lot, but without the open-space amenity."[9]

Ask Luther Propst and Chris Monson

Dominic Oldershaw

Luther Propst.

In eastern Pima County, Arizona, on the outskirts of rapidly growing Tucson, developers once wanted to build a 21,000-unit resort and residential community on the 6,000-acre Rocking K Ranch adjacent to Saguaro National Park.

But the project was scaled back to 6,500 clustered units after opposition from the National Park Service and local environmentalists threatened to derail the development. As part of the agreement that allowed the development to proceed, the most biologically important land was set aside as open space. Two thousand acres has been sold to the National Park Service.

The rest of the property will be managed with input from Rincon Institute, a community stewardship organization supported by homeowners and businesses in the new development and visitors to the resort. The Institute conducts long-term environmental research, helps protect neighboring natural areas and conducts environmental education programs.

"Initially the developers were skeptical, but they now see that a legitimate commitment to conservation is good for marketing," says Luther Propst, director of the Sonoran Institute, which helped negotiate the arrangement.

The developer agrees. "People will pay a premium for an environmentally well-thought-out community," says Chris Monson, president of the Rocking K Development Corporation. "Sometimes less is more, so we increased densities, clustered housing, and preserved open space. We think this makes our development look attractive. It also makes the units easier to sell."

Loudoun County, Virginia, near Washington D.C., is under intense development pressure.

Jeannie Couch

The Benefits of Land Conservation

Instead of costing money, conserving open space as a smart growth strategy can save communities money:

• Bowdoinham, Maine, chose to purchase development rights on a 307-acre dairy farm when research indicated that the costs of supporting the development would not be met by anticipated property revenues. "Undeveloped land is the best tax break a town has," concluded selectman George Christopher.[10]

• A study in Woodbridge, Connecticut, revealed that taxpayers would be better off buying a 292-acre tract than permitting it to be developed. "This town cannot afford *not* to buy land," wrote Robert Gregg, president of the Woodbridge Land Trust.[11]

"Land conservation is often less expensive for local governments than suburban style development," writes planner Holly L. Thomas. "The old adage that cows do not send their children to school expresses a documented fact—that farms and other types of open land, far from being a drain on local taxes, actually subsidize local government by generating far more in property taxes than they demand in services."[12]

For this reason, even groups that usually oppose taxation have come to recognize that new taxes to acquire open space may save taxpayers money in the long run. "People are . . . beginning to realize that development is a tax liability for towns, not an asset, because you have to build schools and hire more police officers. And that makes property taxes go up," Sam Perilli, state chairman of United Taxpayers of New Jersey, an antitax group, told the *New York Times*.[13]

Keep on ranchin'

Along the Front Range of the Colorado Rockies, communities from Fort Collins in the north to Pueblo in the south are racing to preserve the wide open spaces and quality of life that have attracted millions of new residents.

"A lot of employers move here for the climate, access to the mountains, the open space, and other quality of life issues," says Will Shafroth of Great Outdoors Colorado (GOCO), which funds open space projects using state lottery revenues. "But if we continue to develop and become a solid city between Fort Collins and Pueblo, we lose the very reason businesses come here to begin with. They're going to move off and find the next place, as they have in California and Florida and Texas and other places that have grown rapidly."

Larimer County, at the northern end of the Front Range, is typical. The county, which has been growing at 3.5 percent per year for the past 25 years, lost nearly 35,000 acres of farm and ranch land to development between 1987 and 1992.

"There is strong concern that we not allow our communities to grow together into one indistinguishable urban mass," says Tom Keith, chair of Larimer County's Open Lands Advisory Board, which was appointed by county commissioners to guide a new Open Lands Program.

Larimer County has taken several approaches to preserving its quality of life. In the early 1990s a committee appointed by the county recommended clustered rather than dispersed development on rural lands, and while the approach was not mandatory, 20 clustered projects were under way by 1997.

In 1995 Larimer County voters passed an eight-year, ¼ cent "Help Preserve Open Spaces" sales tax, which has brought in nearly $18 million to date. The money will be used for the purchase of land or development rights to keep open lands open and to keep farms and ranches in agricultural use. Other support for the program has come from GOCO.

As of 1998, Larimer County had protected 7,000 acres of the open space on which its quality of life and prosperity depend.[14]

Bill Gray

In Steamboat Springs, Colorado, TPL helped create an open space plan and supported a successful tax measure to protect working ranches.

AP/World Wide Photos

Sprawl development has led to traffic problems in Atlanta, Georgia.

There is no greater risk to land values than unrestrained development.

– Real Estate Research Corporation

New Jersey shows the way

- Number of open space bond acts approved by New Jersey voters, 1961-1995: **9**
- Funds for New Jersey's Green Acres land acquisition program generated by these bond acts: **$1.4 billion**
- Expected additional amount of state open space funding approved by New Jersey voters, November 1998: **$1 billion**
- Amount of open space these latest funds will help protect: **1 million acres**
- Approximate proportion of New Jersey's remaining developable open space this acreage represents: **50 percent**
- Number of New Jersey counties that passed open space funding measures in November 1998: **6**
- Of 21 New Jersey counties, the number that now have a dedicated source of open space funding: **16**
- Rank of New Jersey among states in population density: **1** [17]

Livable Communities: A Long-term Investment

In the long term, economic advantage will go to communities that are able to guide growth through land conservation and other smart growth measures. In some instances a community's bond rating may actually rise after it has shown it can control growth by purchasing open space.[15]

One 1998 real estate industry analysis predicts that over the next 25 years, real estate values will rise fastest in the smart communities that incorporate the traditional characteristics of successful cities: a concentration of amenities, an integration of residential and commercial districts, and a "pedestrian-friendly configuration."

But many low-density suburban communities will suffer lower land values because of poor planning, increasing traffic, deteriorating housing stock, and loss of exclusivity, the report predicts, concluding that "there is no greater risk to land values than unrestrained development."[16]

Attracting Investment

Parks and open space create a high quality of life that attracts tax-paying businesses and residents to communities.

Susan Lapides

Providence, Rhode Island, plans a system of trails and greenways to bring growth and investment to the city.

Open space pays . . .

In 1967, Boulder, Colorado, became the first U.S. city to pass a dedicated sales tax to fund the preservation of open space. Today Boulder enjoys an open space treasury of more than 40,000 acres, much of it in a ring of greenbelts that offer uncluttered views of the city's signature Rocky Mountain backdrop.[19]

As early as the 1970s, it was already clear that Boulder residents would pay a premium to live near these open spaces, with their trails and stream corridors, and that the resulting increase in taxes would more than pay for open space protection. In one neighborhood, total property values increased by $5.4 million after the greenbelt was built, generating $500,000 per year in additional property taxes—enough to recoup the greenway's $1.5 million purchase price in only three years.[20]

Boulder's experience confirms what many communities have discovered: open space conservation is a one-time investment that can boost property values and swell tax coffers long after the land is paid for. And in survey after survey home buyers identify nearby open space and trails as among the top features in choosing a home.[21]

Chattanooga, Tennessee, is fueling an economic revival with parks and greenways. This pedestrian-only bridge crosses the Tennessee River.

Billy Weeks

In the early 1980s, Chattanooga, Tennessee, was suffering a deep economic recession. Eighteen thousand manufacturing jobs had been lost due to factory closure and relocation. Surviving factories, burdened with outdated equipment, pumped out a smog so thick that residents sometimes drove with their lights on in the middle of the day.

Faced with rising unemployment and crime, polluted air, and a deteriorating quality of life, middle-class residents began to leave the city, taking with them the tax base that had supported police, sanitation, road repair, and other municipal services. Departing residents explained that they were moving to the cleaner, greener, and safer suburbs. To lure them back, local government, businesses, and community groups decided to improve Chattanooga's quality of life by cleaning the air, acquiring open space, and constructing parks and trails.

Largely as a result of these efforts, Chattanooga today is alive with economic activity. Where once there were rusting factories, there are now green open spaces surrounded by a bustling commercial and residential district. Where the Tennessee River sweeps through the city, abandoned warehouses have given way to an eight-mile greenway, the centerpiece of a planned, 75-mile network of greenways and trails. A former automobile bridge across the river has been dedicated to pedestrian use, sparking economic revival on both sides of the river. Downtown, an IMAX theater now caters to Chattanooga residents and tourists, and a new Tennessee RiverPark surrounds the new Tennessee Aquarium, which has injected an estimated $500 million into the local economy since opening in 1992.

In all, the environmentally progressive redevelopment of Chattanooga's downtown riverfront involved $356 million in public and private investment. In the eight years between 1988 and 1996 the number of businesses and full-time jobs in the district more than doubled, and assessed property values went up over $11 million, an increase of 127.5 percent. Over the same period, the annual combined city and county property tax revenues went up $592,000, an increase of 99 percent.[18]

"We certainly have had a revival, and the city takes pride in the fact that we have received a lot of attention for this turn-

Billy Weeks

David Crockett.

Making the city more pedestrian-friendly is really what's bringing it back to life.

–David Crockett
Chairman, Chattanooga City Council

around," says David Crockett, chairman of the Chattanooga City Council and president of the Chattanooga Institute, which focuses on new ways of building communities. "There is a feeling not that we've arrived, but that we are on the right path—and 'path' is a good word for it," Crockett says, "since our progress is closely linked to paths. People may point to some rightly celebrated projects, like the aquarium or the IMAX theater, but making the city more pedestrian-friendly is really what's bringing it back to life."

Ten years ago, Crockett found himself arguing for the importance of parks and open space to the city's economic future. "People asked why we should spend money on walking paths and parks when we have schools that need money and roads to fix and we need to create more jobs. But now we have moved beyond thinking of those as tradeoffs. It is understood that we invest in all of those things. There is consensus that we will continue to add more parks, open space, and walking areas to the city." ►

. . . and pays

➤ **SALEM, OR: Land adjacent to a greenbelt was found to be worth about $1,200 an acre more than land only 1,000 feet away.[22]**

➤ **OAKLAND, CA: A three-mile greenbelt around Lake Merritt, near the city center, was found to add $41 million to surrounding property values.[23]**

➤ **FRONT ROYAL, VA: A developer who donated a 50-foot-wide, seven-mile-long easement along a popular trail sold all 50 parcels bordering the trail in only four months.[24]**

➤ **SEATTLE, WA: Homes bordering the 12-mile Burke Gilman trail sold for 6 percent more than other houses of comparable size.[25]**

➤ **DENVER, CO: Between 1980 and 1990, the percentage of Denver residents who said they would pay more to live near a greenbelt or park rose from 16 percent to 48 percent.[26]**

➤ **DAYTON, OH: Five percent of the selling price of homes near the Cox Arboretum and park was attributable to the proximity of that open space.[27]**

➤ **SAN FRANCISCO, CA: Golden Gate Park increases the value of nearby property by an amount of from $500 million to $1 billion, in the process generating $5-$10 million in annual property taxes.[28]**

Give me land, lots of land

➤ **Corporate CEOs say quality of life for employees is the third-most important factor in locating a business, behind only access to domestic markets and availability of skilled labor.[29]**

➤ **Owners of small companies ranked recreation/parks/open space as the highest priority in choosing a new location for their business.[30]**

➤ **Seventy firms that moved to or expanded within Arizona chose the state for its "outdoor lifestyle and recreation opportunities."[31]**

William Poole

Golden Gate Park, San Francisco, California.

Ask Bank of America

In 1996 the Bank of America released "Beyond Sprawl: New Patterns of Growth to Fit the New California," a report about the effects of sprawl on California's economy. B of A had sponsored the report in partnership with the California Resources Agency, the Greenbelt Alliance, and the Low Income Housing Fund, but it was the involvement of the state's largest bank that lent the report particular credibility with businesspeople.

"Unchecked sprawl has shifted from an engine of California's growth to a force that threatens to inhibit growth and degrade the quality of our life," the report concluded. Among other costs, the report singled out the loss of farmland, the expense of supporting highways and other infrastructure in far-flung suburbs, and damage to the environment due to development pressure on remaining open land.[34]

In 1998 a report by the Center for the Continuing Study of the California Economy confirmed the Bank of America findings. "Land Use and the California Economy: Principle for Prosperity and Quality of Life" highlighted planned growth, open space preservation and higher-density development as ways of preserving quality of life to attract businesses and workers. "A high quality of life is not just an amenity for California residents," the report states. "It is increasingly a key determinant in attracting workers in California's leading industries." [35]

Critics warned that Portland, Oregon's urban growth boundary would stifle the economy. But the opposite has occurred.

photo: Phil Schermeister

Quality of Life: The New Engine of Economic Growth

The revival of Chattanooga illustrates the new role of parks, open space, and quality of life in attracting residents, businesses, and economic activity to communities. The riverfront location that once drew factories to the city now makes its economic contribution by attracting tourists and new residents.

As the nation moves toward a mixed economy based on services, light industry, consumer goods, and new technologies, businesses and their employees are no longer tied to traditional industrial centers. Today, businesses are free to shop for an appealing location, and they clearly prefer communities with a high quality of life, including an abundance of open space, nearby recreation, and pedestrian-friendly neighborhoods.

Consider the case of Portland, Oregon, which in 1980 established an urban growth boundary that strictly limited development at the city's fringe. Critics warned that the boundary would stifle development and damage the region's economy. But instead, the number of jobs in the metropolitan area has increased by 57 percent. High-tech companies and industries sprang up inside the urban boundary. Hewlett-Packard, Intel, and Hyundai were among those companies attracted by forests, orchards, and creeks on the outskirts of a livable urban area. According to the *New York Times,* employers wanted to attract "educated workers who were as interested in the quality of life as a paycheck."

"This is where we are headed worldwide," maintained an Intel spokesman. "Companies that can locate anywhere they want will go where they can attract good people in good places."[32]

Open Space for Quality of Life

Across the nation, parks and protected open space are increasingly recognized as vital to the quality of life that fuels economic health. For a 1995 poll, researchers from the Regional Plan Association and the Quinnipac College Polling Institute queried nearly 2,000 people from around the country about quality of life. The major elements cited as crucial for a satisfactory quality of life were low crime with safe streets and access to greenery and open space.[33]

Maintaining a clear edge between town and country is the most simple and critical step counties and cities can take to retain the rural character that has been the source of our wealth.

–Sierra Business Council

Sean Arbabi

The Sierra village of Downieville, California is a popular tourist destination.

Sierra Business Council

The Sierra Business Council's Tracy Grubbs.

Real estate industry analysts confirm quality of life as a determining factor in real estate values and economic vitality. One 1998 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."[36]

A 1996 report by Arthur Andersen consulting company found that mid- and high-level executives increasingly choose to work in locations that offer a high quality of life outside the workplace. Availability of quality education is of prime importance, Andersen reports. But not far behind comes recreation, along with cultural institutions and a safe environment. Proximity to open space is seen as an important benefit.[37]

A survey of businesses in California's Sierra Nevada Mountains cited nearby wildlands, open landscapes, and small-town charm as among the significant advantages of doing business there. "The quality of life in this region drives our economic engine," says Tracy Grubbs, director of special projects for the 450-member Sierra Business Council. The council's 1997 report concluded that "as the Sierra Nevada's population grows, maintaining a clear edge between town and country is the most simple and critical step counties and cities can take to retain the rural character that has been the source of our wealth." [38]

"There are businesses that have decided to locate in communities because of the presence of a greenways system," says Chuck Flink, president of Greenways, Inc., which helps communities plan these long, skinny parks. Flink points to Reichold Chemical Company, which brought 500 jobs to Research Triangle Park in Raleigh-Durham, North Carolina, and to Caterpillar, Inc., which located in Morgantown, North Carolina, after a 20-city search. "Both companies cited the presence of greenways as decisive factors in the location decision," Flink says.

Nationwide, easy access to parks and open space has become a new measure of community wealth—an important way to attract businesses and residents by guaranteeing both quality of life and economic health.

Voters say, just buy it!

More and more state, county, and municipal voters are deciding that the surest—and often the fairest—way to protect open space is to just buy it. Purchasing land or development rights as a way of guiding growth avoids expensive regulatory and legal battles while reimbursing landowners for the economic and other benefits the open space will bring the community.

In November 1998, voters nationwide faced 240 state and local ballot measures concerning land conservation, parks, and smarter growth—and approved 72 percent of them. Many of these were funding measures that will trigger, directly or indirectly, more than $7.5 billion in state and local funding for land acquisition, easement purchase, park improvements, and protection of historic resources.

Such successes show that voters are coming to understand that conservation and open space are investments, not costs. Recent ballot measures seeking funds for conservation and open space have received the highest rates of approval among ballot measures seeking approval for new capital expenditures. [39]

Revitalizing Cities

Urban parks, gardens, and recreational open space stimulate commercial growth and promote inner-city revitalization.

Susan Lapides

The Park at Post Office Square, on land formerly used for a parking garage, has become a magnet for new business investment in downtown Boston, Massachusetts. The garage is now underground.

For years, a two-acre parcel in the midst of Boston's financial district was occupied by an unsightly, 500,000-square-foot concrete parking garage. But in the early 1980s, at the urging of surrounding businesses, the city joined a unique public-private partnership to demolish the structure and create a privately funded underground garage covered by a graceful park. Today, the Park at Post Office Square features a spreading lawn, polished granite walls, teak benches, a 143-foot formal garden, a walk-through sculpture fountain, and a café. Each day as many as 2,000 people stream up the escalators from the garage to jobs in the surrounding high-rises.

"Post Office Square Park has changed Boston forever," wrote *Boston Globe* architecture critic Robert Campbell. "The business district used to be an unfathomable maze of street and building without a center. The park provides that center, and all around it, as if by magic or magnetism, the whole downtown suddenly seems gathered in an orderly array. It's as if the buildings were pulling up to the park like campers around a bonfire."

This rare open space in Boston's crowded financial district has boosted the value of surrounding properties while providing an elegant green focus to a crowded commercial area. The city receives $1 million a year for its ownership interest in the garage, and $1 million in annual taxes. After the construction debt is paid, ownership of the garage and park will revert to the city. [40]

"The garage that formerly filled that block was really a negative," says architect and city planner Alex Garvin, who has written extensively on the role of open space in urban economies. "It simply wasn't attractive for a business to be located opposite a multistory parking structure." But with the parking relocated below ground and the park created on top, all that changed, particularly given that the park is not just decorative space but has become a popular gathering spot. "There's a café there," Garvin says. "You can sit in the park. It has become an attractive place where people want to be. And now that people want to be in the park, businesses want to be across the street from it and the value of that property goes up." ►

It's as if the buildings were pulling up to the park like campers around a bonfire.

–Robert Campbell
Boston Globe architecture critic
on the Park at Post Office Square

Ask Michael Groman

"The creation of quality open space in the neighborhood translates into a quality neighborhood," argues Michael Groman, manager of the Philadelphia Green Program of the Pennsylvania Horticultural Society.

Recently, Groman's department has been taking a novel approach to neighborhood stabilization in Philadelphia's New Kensington neighborhood, where more than a thousand littered vacant lots were damaging property values and scaring away potential investors. Improper management of these properties was costing the community dearly, Groman says. "The idea was to try to reduce the drag that these vacant lots have on the community."

Working with the New Kensington Community Development Corporation (NKCDC), Groman helped launch programs to improve the visual appeal of the properties and transfer some of them to adjacent homeowners for a nominal sum. "Greening and managing vacant land is a primary component in community development work," Groman maintains. "Managing open space is not a luxury but rather a definite need."

Bryant Park Restoration Corporation

Bryant Park in midtown Manhattan is credited with increasing occupancy rates and property values in the surrounding neighborhood.

Bryant Park Restoration Corporation

Dan Biederman is cofounder of the Bryant Park Restoration Corporation.

A similar story comes from New York City, where nine-acre Bryant Park, beside the New York Public Library, was neglected and run-down until the late 1970s. Today, after a five-year, $9 million renovation, the park boasts attractive lawns, flower gardens, news and coffee kiosks, pagodas, a thriving restaurant, and hundreds of moveable chairs under a canopy of trees. On some days, more than 4,000 office workers and tourists visit this green oasis in the heart of Manhattan, and more than 10,000 people come for special events.[41]

The park, supported by city funds and by contributions from surrounding businesses, has spurred a rejuvenation of commercial activity along Sixth Avenue. Rents in the area are climbing and office space is hard to come by. In the next five-to-seven years, revenues from park concessions will permit repayment of construction debt and make the park economically self-sufficient. At that point the park will no longer need city funds, although it will continue to feed the neighborhood's economy.

Spartanburg goes for the green

In the late 1980s at the request of city government, the local Flagstar Corporation of Spartanburg, South Carolina, selected downtown instead of a suburban site for a new corporate office building. Because part of the goal was to revitalize the downtown area, Flagstar executives realized that a single office building would not do the trick, so a formal corporate plaza and a traditional downtown park with flower gardens, walkways, benches, and lawns were added as magnets for downtown renewal.

The result? By 1993, property values in the central business district had increased 325 percent over their 1983 value. Retail sales had also risen, with some downtown businesses reporting increases of as much as 100 percent. Residential rents in the area have more than doubled since creation of the redevelopment and park. In all, more than $250 million in investment flowed into downtown Spartanburg between 1988 and 1996. In the fall of 1996, officials announced a $100 million development proposal that includes a four-star hotel, a conference center, a golf course, an exhibit hall, and new office and residential development.[42]

To Dan Biederman, who helped organize the Bryant Park effort, the lesson is clear. "If building owners and the agents help protect urban open space they will be more than paid back for their efforts, both in increased occupancy rates and in increased rent—all because their building has this attractive new front yard."

Similar projects are underway elsewhere:

• In East Boston, Massachusetts, plans are under way for a $17 million, 6.5-acre park at the abandoned East Boston piers to serve as a locus of economic development along a new recreational waterfront. The new park offers playgrounds, gazebos, and views of downtown Boston.[43]

• With the help of the Trust for Public Land, Santa Fe, New Mexico, recently acquired a 50-acre former rail yard—the last large undeveloped parcel downtown. The land will be used for a park and as a site for community-guided development.[44]

• In Burlington, Vermont, a former 20-acre fuel tank farm will become a park on the Lake Champlain waterfront. Anticipating the economic benefits the park will bring, the city purchased an adjacent 25 acres as a reserve for future commercial development—land expected to appreciate as the park takes shape.[45]

Susan Lapides

Eric Swanson

A greenway along the piers in East Boston, Massachusetts (above), a former rail yard in Santa Fe, New Mexico (left), and a lakefront park in Burlington, Vermont (below) are part of urban redevelopment efforts.

Glen Russell

Brownfields Payback

One way to preserve valuable landscapes while accommodating a growing population is to redevelop previously used urban lands—sometimes known as "brownfields."

Even with the expense of environmental clean-up, a recycled parcel is often less expensive to develop than new land, because it is already serviced by roads, utilities, and other infrastructure. Brownfield development also limits the pressure to develop farms and other open space.

Since 1993 the U.S. Environmental Protection Agency has been helping communities redevelop some of the nation's estimated 130,000 to 425,000 brownfield properties, and these projects are already showing economic benefit:

➤ In Buffalo, New York, a 763,000-square-foot greenhouse on a former steel mill site produces up to 8 million pounds of hydroponic tomatoes each year and employs 175 workers.

➤ In North Birmingham, Alabama, a reseller of industrial byproducts has established a facility where a steel mill once stood. The business—which will create 30 jobs—is the first tenant in a 900-acre brownfields target area that may eventually bring as many as 2000 jobs to the economically depressed neighborhood.

➤ In Emeryville, California, a hotel, office, and residential complex on former industrial property is expected eventually to generate as many as 10,600 new jobs. Future tenants include the biotechnology company Chiron Corporation, which will construct a 12-building, 2.2 million-square-foot campus over the next 20 years.[46]

Blending housing with open space

Packaged together, affordable housing and open space can bring powerful changes to an urban neighborhood.

For years, the grounds of a former state mental hospital offered the only open space in the high-density Broadway neighborhood of Cleveland, Ohio. This lovely site in the midst of the city contained a strip of green along meandering Mill Creek, flowering meadows, and gently wooded hills. But even though residents could see this space, it was off-limits and patrolled by guards—fenced, contaminated, and littered with trash.

Residents were eager to see the site developed as a park, but the Cleveland Metro Parks Department balked at the idea of tearing down the buildings, arguing that the department was in the business of preserving and maintaining natural lands, not restoring already developed sites.

Eventually, the Broadway Area Housing Coalition (now known as Slavic Village Development) came up with a plan for the 100-acre site. The goals were to preserve the best of the open space and attract middle-class home buyers to an inner-city development. Planners also wanted to connect the open space to 45-foot Mill Creek waterfall—the tallest waterfall in Cuyahoga County—long blocked from public use by railroad tracks, bridges and buildings.

The mental hospital was torn down, and the contamination was cleaned up. A private housing development of 217 units is being developed on 58 acres of the land. Parkland totaling 35 acres will include the stream corridor and trails connecting to the waterfall. Houses along the park are selling as quickly as they are built, and entrepreneurs are leasing properties near the waterfall, which is expected to attract 40,000 to 50,000 visitors each year. Community residents are delighted at last to have access to open space.[47]

The Martin Luther King, Jr. National Historic Site has brought stability and investment to its Atlanta, Georgia, neighborhood.

Peter Beney

► Parks for Community Revitalization

American cities large and small are creating parks as focal points for economic development and neighborhood renewal. "Revitalizing public parks is a phenomenally cost-effective way to generate community economic development," says Steve Coleman, a Washington, D.C., open space activist. "If you think of [a park] as an institution, it can be a site for job training, education, or cultural performances."

Coleman has been active in revitalizing Washington's secluded and long-neglected Meridian Hill Park, which stands on a hill with a distant view of the White House. In 1990, Coleman and his neighbors organized Friends of Meridian Hill to restore the park as a neighborhood asset. An Earth Day clean-up and celebration was held, complete with a blues concert. Park activists encouraged youth groups to schedule events in the park. Today, the restored park is frequented not only by residents, but by busloads of tourists who enjoy the multiethnic ambiance of the Meridian Hill neighborhood. Visitation has tripled, and many park visitors patronize local restaurants and retail businesses. Occupancy rates in surrounding apartment buildings have soared.

A similar story comes out of Atlanta, Georgia, where the expansion and restoration of the Martin Luther King, Jr. National Historic Site has sparked a revival of the African-American "Sweet Auburn" neighborhood. The Trust for Public Land—which began acquiring properties for the historic site in the early 1980s—recently acquired several more historic homes and demolished a dilapidated factory to provide land for the park. The improved site, with additional open space, has become a catalyst for community reinvestment. Crime is also down. Dozens of homes have been built or restored, and the site's 500,000 annual visitors have bolstered neighborhood businesses.

None of this would have been possible without the investment in the national historic site, says real estate developer Bruce Gunter, who has developed nonprofit, low-income housing within the district. "The National Park Service is

Carol Collard

Bruce Gunter.

The whole point is to try to keep the middle-class families that are living there and to attract others. The park will be a real anchor for an in-town middle class.

– Bruce Gunter
Atlanta real estate developer

there for the long haul," Gunter says. "People considering commercial or residential development can be confident that the benefits of the park aren't going to disappear."

Gunter and others are now planning a greenway park along the new Freedom Parkway, connecting the King Historic Site, the Jimmy Carter Presidential Center, and Atlanta's downtown. The park will contain bike trails, benches, and street lighting and will be what Gunter calls, "a real-life, honest-to-God, throw-a-Frisbee, get-a-drink-of-water, have-a-picnic kind of a park." Gunter and other businesspeople are helping to raise money for the park, which should boost property values and spur business along its length.

"This is pure market economics at work," Gunter says. "There are eight neighborhoods that surround this parkway, and they will all be strengthened. The whole point is to try to keep the middle-class families that are living there and to attract others. The park will be a real anchor for an in-town middle class."

Paul Grogan, former president of Local Initiative Support Coalition (LISC), a community development group in New York City, agrees that open space can play a crucial role in revitalizing low-income, inner-city neighborhoods. "Low-income neighborhoods are principally residential neighborhoods where the economics have gotten weak because of depopulation and disinvestment," Grogan says. "The key to restoring their economic vitality is restoring the residential vitality. The residents of such communities regard quality open space—parks, ball fields, and gardens—as vital to the health of their community."

Ask Frederick Law Olmsted

As early as the 1850s, landscape architect Frederick Law Olmsted justified the purchase of land for New York's Central Park by noting that the rising value of adjacent property would produce enough in taxes to pay for the park.

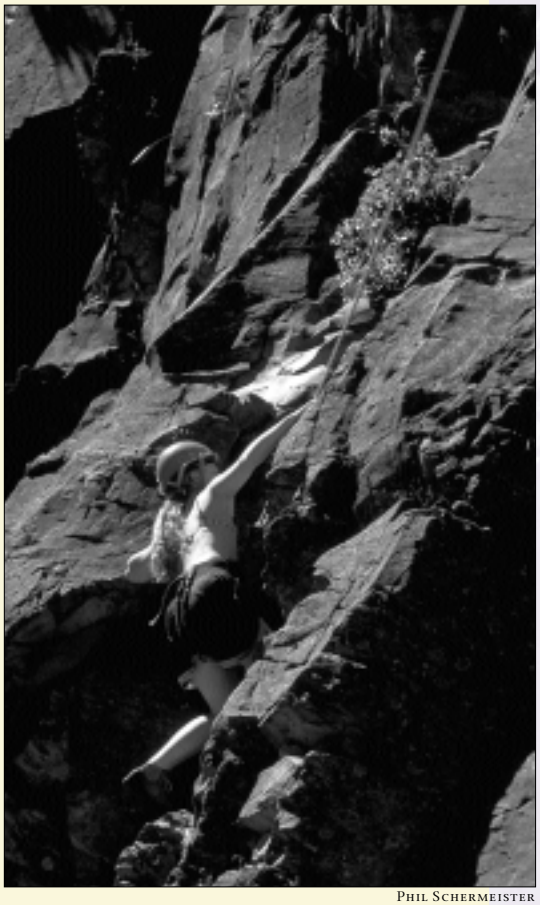
By 1864, Olmsted could document a $55,880 net return in annual taxes over what the city was paying in interest for land and improvements. By 1873, the park—which until then had cost approximately $14 million—was responsible for an extra $5.24 million in taxes each year. [48]

Robert Cadena

Community parks and gardens bring vitality to urban neighborhoods. Creston Avenue Community Playground, Bronx, New York.

Boosting Tourism

Open space boosts local economies by attracting tourists and supporting outdoor recreation.



Phil Schermeister

Rock climber in Cantara, California.

In 1996, the Trust for Public Land helped add 17 acres to the Gauley River National Recreation Area in Nicholas County, West Virginia. The acquisition helped protect the river's water quality, wooded banks, and scenic canyon. But it was also driven by a bottom-line economic motive. Tourism is West Virginia's fastest growing industry, and whitewater rafting is one of that industry's fastest growing segments. Each fall whitewater rafters come to run a 24-mile scenic stretch of the Gauley River, pumping $20 million into the local economy.[49] Elsewhere in West Virginia, rafting provides 1,000 seasonal jobs in Fayette County while contributing $50 million to the local economies—mostly from the sale of videos, photos, T-shirts, cookbooks, food, and lodging.[50]

Across the nation, parks, protected rivers, scenic lands, wildlife habitat, and recreational open space help support a $502-billion tourism industry. Travel and tourism is the nation's third largest retail sales industry, and tourism is one of the country's largest employers, supporting 7 million jobs, including 684,000 executive jobs. At present rates of growth, the tourism/leisure industry will soon become the leading U.S. industry of any kind.[51]

Outdoor recreation, in particular, represents one of the most vigorous growth areas in the U.S. economy. Much of this recreation is supported by public and private parks and open land. Popular outdoor recreational activities include hiking, camping, biking, birding, boating, fishing, swimming, skiing, and snowmobiling. According to the Outdoor Recreation Coalition of America, outdoor recreation generated at least $40 billion in 1996, accounting for 768,000 full-time jobs and $13 billion in annual wages.[52]

Protecting Tourism and Recreation Resources

Where do Americans go for recreation? A poll for the President's Commission on Americans Outdoors found natural beauty and quality of view to be the most important criteria for tourists seeking outdoor recreation sites.[53]

Recognizing this, many communities now work to attract tourists by protecting scenic views and vistas, moving utility wires underground, and preserving trees and historic build- ►

Thomas R. Fletcher

Whitewater rafting is an economic mainstay of West Virginia's rural communities. Gauley River National Recreation Area.

Across the nation, parks, protected rivers, scenic lands, wildlife habitat, and recreational open space help support a $502-billion tourism industry.

In land we trust

William Poole

How interested are Americans in guiding growth and protecting quality of life? One striking measure is the increasing number of local, state, and regional land trusts, grassroots nonprofit organizations that help communities conserve land—most often by purchasing or accepting donations of land or conservation easements.

According to the Land Trust Alliance, the number of land trusts jumped 63 percent, to more than 1,200, between 1988 and 1998, with the most dramatic growth coming in the Rocky Mountain states (160 percent), the Southwest (147 percent), and the South (118 percent).

In that same decade, land trusts conserved an area nearly the size of Connecticut, more than doubling the land protected by land trusts to 4.7 million acres.

Of that 4.7 million acres, 1.4 million are protected by conservation easement, by far the fastest growing land protection strategy of local land trusts. A conservation easement, sometimes called a "purchase of development rights," limits development on land. Depending on how the easement is written, it may also preserve such essential productive uses as farming, ranching, watershed protection, and recreation.

Land on which local land trusts hold conservation easements increased nearly 400 percent between 1988 and 1998. In Montana, where easements have become an important tool for protecting ranchlands, land trusts hold easements on more than a quarter million acres. New York land trusts hold easements on nearly 200,000 acres; Vermont land trusts on nearly 140,000 acres.

More than one million Americans are members and financial supporters of local land trusts. Land protected by local land trusts includes forests, wetlands, wildlife habitat, historic landscapes, farmland, and ranches.[56]

If you develop everything, you destroy what people come here to see.

–Bruce Nourjian
President, Stowe Land Trust

► ings. In Stowe, Vermont—a popular resort and winter sports center—developers seeking building permits must guarantee preservation of scenic vistas and signature landscapes.

"People come to Vermont to see cows, pastures, green fields and meadows, so protecting open space is healthy for our local economy. If you develop everything, you destroy what people come here to see," says Bruce Nourjian, a sometime developer and president of the Stowe Land Trust, which over the past 12 years has protected over 2,500 acres in the Stowe Valley. In Stowe, Nourjian adds, most developers support land conservation, because they know that by preserving the area's rural character they are protecting the value of their investment.

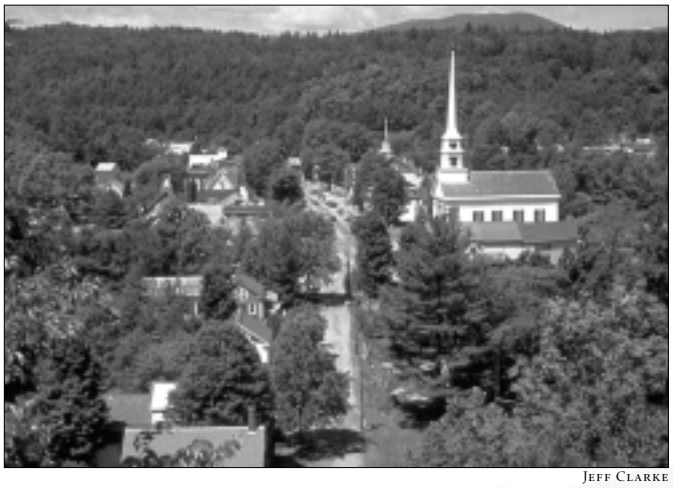
The Value of Recreation on Federal Lands

Other communities benefit from tourism and recreation on nearby federal lands. The National Park Service estimates that in 1993 national park visitors contributed more than $10 billion in direct and indirect benefits to local economies.[54] And recreation is the second largest producer of direct revenue from U.S. Forest Service lands—bringing in more than grazing, power generation and mining combined—and may account for as much as 74 percent of the economic benefit from these lands when indirect contributions are taken into account.[55]

Many towns that traditionally have depended on logging, mining, and other extractive industries on public lands are now working to bolster local economies by attracting tourists.

Carolyn Fannon

Wildlife watchers spent $29.2 billion on trips, equipment, and other expenditures in 1996, according to the U.S. Fish and Wildlife Service.



Jeff Clarke

Preserving open space is key to protecting the rural character that attracts people to Stowe, Vermont.

In Berlin, New Hampshire—a paper mill town adjacent to the White Mountains National Forest, which attracts 6 million visitors each year—environmentalists and businesspeople are conducting "moose tours," and planning excursions that explore the history and heritage of the paper and pulp industry. Tourists would learn how trees are grown and harvested, and they would visit a paper mill and a model logging camp to understand what life was like when the local Androscoggin River was filled with logs on the way to the mill.

"We want to nurture the constituency that sees the economic value in conserving natural resources, because we think that will lead to more conservation," says Marcel Polak, who explores alternative business opportunities that promote conservation efforts for the Appalachian Mountain Club (AMC) in the upper Androscoggin Valley.[57]

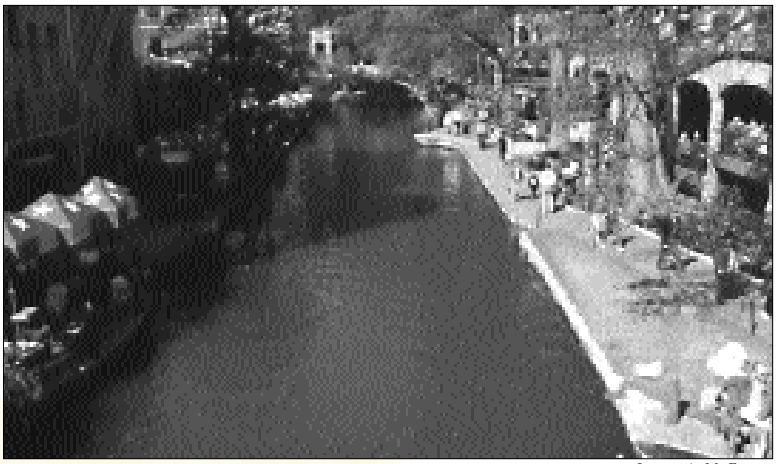
For such programs to succeed it is essential to protect forestlands across a broad swath of New York and New England. These forests have supported communities for generations, but global competition has weakened the forest products industry, and many timber companies seek to sell land for development. Unfortunately, the most desirable land for second homes and other development is also the most important for wildlife habitat and recreation. ►

Open space brings billions to New Hampshire

- Estimated annual value of open space to the economy of New Hampshire: **$8 billion**
- Approximate fraction of the state's total economy this amount represents: **25 percent**
- Number of jobs supported by New Hampshire's open space: **100,000**
- Annual contribution of open space to state and local taxes: **$891 million**
- Fraction of all state and local tax receipts this contribution represents: **35 percent** [59]

State land protection programs

- Amount that Maryland's Rural Legacy Program will spend to preserve farms and other rural open space in the next five years: **$70 million to $140 million**
- Amount of land that will be protected by these funds: **50,000-75,000 acres**
- Amount of land conserved over the past ten years with funds from Florida's Preservation 2000 Program: **1 million acres**
- Proportion of voters that approved an extension of the Preservation 2000 Program in November 1998: **70 percent**
- Annual amount from state lottery proceeds that Oregon voters set aside to purchase river corridors, watersheds and wetlands, and native salmon habitat in November 1998: **$45 million**
- Proportion of Oregon voters approving this investment: **67 percent**
- Minimum annual amount set aside by the North Carolina legislature for dedicated Clean Water Management Trust Fund: **$30 million**
- Amount granted for land conservation projects from the North Carolina Clean Water Trust Fund since its inception in 1997: **$36 million** [58]



Laura A. McElroy

The San Antonio Riverwalk is the most popular attraction in the city's $3.5-billion tourist industry.

Remember the Riverwalk

In the early 1900s, engineers in San Antonio, Texas, planned to bury the San Antonio River to prevent recurrent flooding. But citizens envisioning a riverfront park stopped the project.

Eventually a channel was cut, and floodgates were added to control flooding. Trees and shrubs were planted, and a mile and a half of walkways were added along the shore. Stairways connected the walkways to city streets, and 21 pedestrian bridges spanned the river. Riverside buildings, which had long faced away from the waterway, were given new entrances facing the park.

Created for $425,000, the park has been enlarged twice, including the addition of new canals and walkways. Today, Paseo del Rio is lined with outdoor cafés, shops, bars, art galleries, and hotels—an irreplaceable retreat for city residents and workers. The Riverwalk has also overtaken the Alamo as the single most popular attraction for the city's $3.5-billion tourist industry.[65]

"The lake frontage, river frontage, hillsides and ridges—those are the places people want to build homes," says Tom Steinbach, the AMC's director of conservation. "But if communities don't preserve these lands, they will lose their future economic base."

The Impact of Trails and Wildlife Tourism

Hiking and biking trails can also stimulate tourism. Each year 100,000 people come to ride the famous Slickrock Mountain Bike Trail near Moab, Utah. The trail generates $1.3 million in annual receipts for Moab, part of $86 million spent by visitors to nearby desert attractions that include Arches and Canyonlands National Parks. In 1995, tourism in Moab supported 1,750 jobs, generated nearly $1.7 million in taxes, and accounted for 78 percent of the local economy.[60]

Trails along former railroad corridors also pay handsome dividends. In recent years the federal government has invested more than $300 million in more than 9,500 miles of rail trails in 48 states, and this investment is already paying off.[61] For example, in Dunedin, Florida, store vacancy rates tumbled from 35 percent to zero after the Pinellas Trail was built through town beginning in 1990.[62] In 1994 the Maryland Greenway Commission authorized a study of the 20-mile Northern Central Rail Trail near Baltimore. Researchers found that whereas the trail cost $191,893 to maintain and operate in 1993, that same year it returned $304,000 in state and local taxes.[63] In another study, the National Park Service found that three rail trails—in Iowa, Florida, and California—contributed between $1.2 million and $1.9 million per year to their home communities.[64]

Natural open space supports fishing, hunting, and other wildlife-based tourism. Sport fishing alone boosted the nation's economy by $108.4 billion in 1996, supporting 1.2 million jobs and generating household income of $28.3 billion.

At present rates of growth, the tourism/leisure industry will soon become the leading U.S. industry of any kind.

–National Park Service

Sport fishing added $2.4 billion to state tax coffers—nearly 1 percent of all state tax receipts—while contributing $3.1 billion in federal income taxes.[66] Another $85.4 billion is generated for the U.S. economy each year by people who feed birds or observe and photograph wildlife.[67]

Funding Resources for Tourists

Recognizing the connection between open space and tourism, some communities have begun taxing tourists to raise funds for park and open space preservation. In 1985 the Montana legislature authorized some small communities that derive a large portion of their income from tourism to levy a sales tax of up to 3 percent on tourist-related goods and services to pay for infrastructure and tourist services, including parks and recreational services. Using receipts from this tax, the town of Whitefish, Montana is building a bike path.[68]

Flagstaff, Arizona, is another community that supports parks and land acquisition using funds generated by tourists. Two million tourists visit this community of 50,000 people each year, attracted by nearby Indian ruins, skiing, national forests and Grand Canyon National Park. In 1988, the city passed a 2 percent "bed, board, and booze" tax (known locally as the BBB tax), which currently raises $3.3 million each year. A third of the money goes to city park improvements, and an additional portion goes to city beautification and land acquisition. The funds are helping to build a 27.5-mile urban trail system connecting neighborhoods, commercial areas, and national forest lands.[69]

As travel and tourism swells to become the nation's leading industry within the next few years, communities from coast to coast are coming to see their parks and open lands in a new light. Long appreciated as resources for residents, increasingly they are being appreciated for their attraction to visitors and as economic engines for the next millennium. ■

Recreation = Fun + Profit

- **Annual contribution of river-rafting and kayaking to the economy of Colorado: $50 million** [70]
- **Amount outdoor recreation adds to the economy of Arkansas each year: $1.5 billion** [71]
- **Amount of this figure contributed by canoeing: $20.1 million** [72]
- **Amount spent by Americans on the purchase of canoes and kayaks in 1996: $99.1 million** [73]
- **Amount spent on hiking footwear each year: $374 million** [74]
- **Contribution of sport fishing to the economy of California in 1996: $7.1 billion** [75]
- **Annual value of hunting, camping, fishing, and horseback riding on federal Bureau of Land Management lands: $376 million** [76]
- **Annual value of sport fishing on U.S. Forest Service land: $1.2 billion** [77]
- **Rank of recreation among all economic activities on U.S. Forest Service lands: 2** [78]
- **Visits to national wildlife refuges in 1995: 27.7 million** [79]
- **Revenue of local businesses from these visitors: $401 million** [80]
- **Income from the 10,000 jobs supported by these visitors: $162.9 million** [81]

In 1996, sport fishing contributed $7.1 billion to California's economy. East Walker River, Bridgeport, California.

Phil Schermeister

Protecting Farms and Ranches

Protecting agricultural lands safeguards the future of farming economies and communities.

Carolyn Fannon

Located in rolling, coastal hills north of San Francisco, the dairy farm of the Straus Family Creamery occupies some of the potentially most valuable land in California. In the 48 years that Ellen and Bill Straus have owned their Marin County farm, they have seen other farms give way to development up and down the California coast. "But we think farming is important, and we love this land," Ellen Straus says. So the couple has turned down many lucrative offers for the land and hopes to pass the farm on to their children.

To protect her land, Ellen Straus became an open space advocate. In 1980, Straus cofounded the Marin Agricultural Land Trust (MALT), established with the help of the Trust for Public Land. MALT and other agricultural land trusts use public or donated funds to purchase the development rights to agricultural land. The purchase of development rights reduces the taxable value of the land so that a family can afford to keep it in agriculture. The purchase reimburses the farmer for the economic benefit the open land brings to the community. Some farmers use the funds to buy new equipment or upgrade the farm.

Using such techniques, MALT has helped protect 38 farms, totaling more than 25,000 acres of agricultural open space in Marin County since 1980—including the 660-acre Straus farm, which has since become the first organic dairy and creamery west of the Mississippi. [82]

In addition to protecting farms, vistas, and the character of rural communities, MALT's work has protected an irreplaceable economic asset. Marin County generated more than $57 million in agricultural production in 1997, including $35 million in milk and other livestock products. Two decades after Marin County pastures were first threatened by encroaching development, milk remains the county's most important agricultural product.[83] ►

Steven Samuels

Conservation easements safeguard Marin County, California ranches from development. The county, which adjoins San Francisco, generated $57 million in agricultural products in 1997.

Fresno's Choice

Fresno County, in the heart of the fertile San Joaquin Valley of California, is the nation's top producing agricultural county, generating $3.3 billion in gross agricultural revenues each year. But if current development patterns continue, the county's population is expected to triple over the next 40 years, consuming nearly 20 percent of agricultural land.

In response, farm and business groups have formed the Growth Alternatives Alliance to work against farmland loss. In a 1998 report, "A Landscape of Choice: Strategies for Improving Patterns of Community Growth," the Alliance proposed a plan that would direct development away from valuable farmland and into somewhat denser, mixed-use, pedestrian-friendly neighborhoods in existing communities.

According to the report, "Each acre of irrigated agricultural land should be considered a factory that produces between $6,000 to $12,000 per year for the local economy. The loss of even 1,000 acres of agricultural land can remove as much as $15 million from our local domestic product." [84]

Evan Johnson

Productive farmland is being lost to development at a rate of 50 acres every hour. Sonoma County, California.

Let them eat sprawl?

A recent report by the U.S. Department of Agriculture documents the loss of U.S. farmland. During 1992-1997, the report found, nearly 14 million acres of farmland were taken out of production—nearly 320 acres every hour.[86]

Reaction to the report singled out sprawl development as a prime culprit.

"There's a market force at work that makes it more and more difficult for the farmer," banker Jim Kommertzheim told Kansas's *Wichita Eagle*. "Demand for land for home development increases the price to the point where a farmer can't afford to buy it for agricultural production."[87]

Scott Everett of the Michigan Farm Bureau also blamed urban sprawl for driving up the price of farmland. "Once the erosion of our land base begins to affect production," he said, "you're never going to be able to turn it around."[88]

The Value of Endangered Farmland

The nation's farms and ranches are often referred to as "working landscapes" because of the food and fiber they produce. The best of these lands are literally irreplaceable, their agricultural productivity the result of geologic and climatic factors that cannot be reproduced. Even though they also have value as developable land, their highest economic use derives from their long-term productivity as farms and ranches.

"If agriculture is going to be a vital part of a community or valley or region, then it's vitally important that a critical mass of farmland be permanently protected," says Ralph Grossi, president of the American Farmland Trust (AFT), which works to preserve the nation's farmland.

American agriculture is an industry of great value. According to the U.S. Department of Agriculture, farm receipts reached a record $202.3 billion in 1997, generating approximately $50 billion in farm income that was cycled through local communities. That same year the U.S. exported $57 billion in agricultural products, which accounted for a $21 billion balance-of-trade surplus for such products.

Unfortunately, the land that supports this valuable industry faces increasing pressure from suburban growth and second-home development. The AFT estimates that 13 million acres of open land were converted to urban uses between 1982 and 1992. Of this, 32 percent—4.2 million acres—was prime or unique farmland. During these years, prime farmland was lost to development at the rate of nearly 50 acres every hour.[85]

"Farms are often the most stable part of the local economy," says AFT's Ralph Grossi. "They have been passed down for generations and tend to stay put rather than move around as other jobs and businesses do. Agriculture lends economic stability to a community, providing a net inflow of dollars—year in, year out—from the sale of agricultural products."

Rick Tang

Ralph Grossi.

If agriculture is going to be a vital part of a community or valley or region, then it's vitally important that a critical mass of farmland be permanently protected.

–Ralph Grossi
President, American Farmland Trust

Lands under the most imminent threat of development produce 79 percent of the nation's fruit, 69 percent of its vegetables, 52 percent of its dairy products, 28 percent of its meat, and 27 percent of its grain. AFT estimates that if present trends continue, by 2050 farmers and ranchers could be required to produce food for 50 percent more Americans on 13 percent less land, and that the nation might eventually become a net food importer. [89]

Protecting Ranchlands

In the West, where "wide open spaces" aren't as wide or as open as they used to be, communities are scrambling to protect land that supports the economic engines of ranching, tourism, and business growth. The West has experienced explosive growth in recent decades. As land values rise, ranching families are pressured to sell what is often a region's most beautiful and productive lands for development. Typically, a family may be forced to sell to finance education or retirement or to pay crushing inheritance taxes on steeply appreciating property. As a result in some areas, open range is fast disappearing. As fences go up, the health of the grasslands is compromised and wildlife corridors are cut.

Although communities across the West are working to preserve ranches, activity is particularly intense in Colorado, which is losing 90,000 acres of ranchland each year.[90] In 1992, the state launched Great Outdoors Colorado (GOCO), a grants program funded by state lottery revenues that supports wildlife preservation, recreation programs, and open space acquisition. Since 1994, GOCO has awarded $145 million in grants to state agencies, counties and municipalities, park and recreation districts, and nonprofit land conservation organizations. Of these funds, $35 million helped protect more than 60,000 acres of open space.[91] ►

Minding your PDRs

States and communities use several techniques to help keep farmland and ranchland in agriculture. In some instances farmland may be taxed at a special lower rate so long as it is used for farming. But states and communities are increasingly purchasing the development rights to agricultural land and restricting this land to farm, woodland, or other open space use.

Purchase-of-development-rights (PDR) programs began on the East Coast and have since spread across the country. Fifteen states and dozens of county and municipal governments now sponsor PDR programs, with funds for some transactions coming from both state and local sources. State PDR programs alone have protected more than 470,000 acres.

Maryland, among the first states to launch a PDR program (in 1977), has protected nearly 140,000 acres of farmland. Other states with major PDR programs include Vermont, New Jersey, Massachusetts, and Connecticut.[92]

Traverse City, Michigan's orchards are losing ground to development.

Terry W. Phipps

Eric Swanson

David Harp

Recreation and tourism bring both dollars and development. Gunnison County, Colorado, and other rural communities are trying to balance growth and their traditional way of life.

Local land protection efforts are also under way in several rural Colorado counties that are threatened by development. In Gunnison County, home to the Crested Butte ski resort and mountain bike center, efforts have focused on preserving a critical mass of ranchland, especially private land that offers access to summer grazing allotments on U.S. Forest Service land. These lands also provide habitat for wildlife that attracts tourists, hunters, and anglers. Hunting and fishing alone contribute more than $62 million each year to the Gunnison County economy.[93]

Ranchlands and Tourism

Ranchland protection also helps safeguard the tourist economy by preserving the vistas and open landscapes tourists love, says Will Shafroth, executive director of GOCO, which has channeled more than $2.5 million of state lottery funds into

Michael K. Nichols

Higher density development could protect farmland and save billions in tax dollars in California's Central Valley.

Saving a billion dollar breadbasket

Each year, urban sprawl consumes 15,000 acres of farmland in the Central Valley of California, the nation's most productive agricultural region. At current growth rates and development patterns, the valley's $13 billion in annual production will be slashed by $2.1 billion a year by 2040—a reduction equivalent to the current agricultural production of New York, Virginia, Oregon, or Mississippi.

A 1995 study for American Farmland Trust examined two growth scenarios for the Central Valley. In one, development continued at its current density of three dwelling units per acre. In the other scenario, this rate of growth was doubled, to six dwelling units per acre. Among the study's finding are the following:

- **Compact, efficient growth would slash farmland conversion in half between now and the year 2040.**
- **While agricultural sales and related economic benefits would decline under both growth scenarios, compact growth would reduce this loss by more than half, saving communities $72 billion by 2040.**
- **Farmland protection and efficient growth would save 21,500 jobs, equivalent to the number of civilian jobs lost in California during the recent round of military base closings.**
- **Because low-density growth costs governments more to service than does high-density development, farmland protection and efficient growth could save Central Valley taxpayers $1.2 billion each year.[94]**

In Colorado communities lacking a land protection program, 63 percent of survey respondents wanted one; in communities that already had a program, 81 percent approved of it.

the purchase of agricultural easements in Gunnison County. "Surveys tell us that the people who come to Crested Butte to ski in the winter and mountain bike in the summer place a very high value on open space," Shafroth says. "They leave the airport and they don't have to drive through subdivision after subdivision to get to the ski area. Some ski areas may have great skiing, but their surroundings are less interesting because they're completely paved over."

GOCO's efforts in Gunnison County have been in cooperation with the Gunnison Ranching Legacy Project, a local group dedicated to ranchland preservation.[95] Other funding for land protection has come from county and local sources. In 1991, Crested Butte began collecting a real estate transfer tax that has raised more than $1.5 million for open space conservation, and in 1997 county residents passed a dedicated sales tax to fund open space protection.

In addition, more than 100 Crested Butte merchants collect an informal 1 percent sales tax and donate the money to the Crested Butte Land Trust and the Gunnison Ranching Legacy Program. The idea for this voluntary customer donation was generated by the merchants themselves. The donation program raised an estimated $100,000 for land protection in 1998. Working together, the town of Crested Butte and the Crested Butte Land Trust have helped protect more than 1,000 acres around their mountain community. "There're just a lot of people in this town that really value open space," says town planner John Hess.

Throughout Colorado, 29 counties and municipalities levy taxes or have approved bonds to fund the protection of agricultural lands and other open space, and the number is growing. An October 1998 poll of 600 randomly selected Colorado residents found strong approval for local land protection programs. In Colorado communities lacking a land protection program, 63 percent of the respondents wanted one; in communities that already had a program, 81 percent approved of it.[96] In Colorado—as across the nation—communities are recognizing that once farms, ranches, and other open space are gone, the economies they support are lost forever. ■

Farms keep taxes lower

➤ More than 40 studies from 11 states have found that farms can save communities money by contributing more in taxes than they demand in tax-supported services.

Examples include:

➤ Hebron, CT: Farms required $0.43 in services for every dollar they generated in taxes. In contrast, residential properties required $1.06 in services for every dollar contributed in taxes.

➤ Minneapolis-St. Paul, MN: In three nearby rural communities, farms drew an average of $0.50 in services for every tax dollar paid. Residential properties required an average of $1.04 in services for every tax dollar.

➤ Dunn, WI: Farms required $0.18 cents in services for every tax dollar; residential development cost taxpayers $1.06 for every tax dollar collected.[97]

Susan Lapides

TPL helped save the last working farm in Billerica, Massachusetts, from development as a discount chain store.

Preventing Flood Damage

Floodplain protection offers a cost-effective alternative to expensive flood-control measures.

Richard Day/Daybreak Imagery

Inappropriately sited development costs billions in flood damage. Alma, Illinois.

Floods along Northern California's Napa River have caused an average of $10 million in property damage each year since 1960. It's not that engineers haven't tried to control the river's rages. Like many rivers, the Napa River—which flows through the famous Napa Valley wine-growing region—has been dredged and channeled. Levees have been built, and the river's banks have been fortified with concrete. Still, seasonal floods have wreaked havoc on lives and property and threatened to disrupt the valley's lucrative tourist trade.

But in 1998, Napa County voters approved funding for a radical new river-management plan. Instead of trying to control the river, the engineers will let it flow, and 500 acres of floodplain will be acquired to accommodate winter rains. Bridges will be raised, some levees will be lowered, and 17 homes in the floodplain will be purchased and demolished, as will several businesses and a trailer park. The estimated cost: $160 million to "fix" a river that has done $500 million in flood damage since 1960.[98]

According to the U.S. Army Corps of Engineers, flood damages in the U.S. average $4.3 billion each year.[99] 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 1 percent increase in protected wetlands along a stream corridor, peak stream flows decreased by 3.7 percent.[100]

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.[101] ►

Save the bay!

Alex Tehrani

Students test the waters of Barnegat Bay, New Jersey.

Only 40 miles from New York City, Ocean County, New Jersey, is among the fastest growing counties in the nation's most densely populated state. It is also a place of great natural beauty and home to a network of streams and marshes along slender Barnegat Bay.

Inappropriate development across Ocean County is polluting the ground water and threatening the quality of life. Despite this, county leaders were long reluctant to ask voters to spend money on open space protection, fearing that the largely Republican and senior electorate would not support new property taxes for land conservation.

But polling and other research by the Trust for Public Land suggested that voters would support local open space funding. TPL helped organize a citizens committee to promote a property tax measure and helped draft a measure that their research indicated voters would support. When county leaders approved the measure for the November 1997 ballot, TPL made a grant to a community organization to educate the public about the issue.

Today, Ocean County is one of 16 New Jersey counties and 99 municipalities to have dedicated open space trust funds, making them eligible for state grants. Ocean County's measure is expected to generate $4 million annually to protect watershed and agricultural lands.

Reaping the benefits of the forests and the trees

Nancy Warner, Pacific Forest Trust

Susan Pritchard of the Pacific Forest Trust visits a sustainably-managed forest protected from development by conservation easements.

Private timberlands contribute to community economies through the production of lumber and other forest products, by hosting recreation and tourism, and by performing vital ecological and biological services such as cleaning the air, stabilizing watersheds, and safeguarding biodiversity.

In Virginia, for example—where 77 percent of more than 15.4 million acres of timberland is held by more than 400,000 private landowners—timber production and wood processing contribute $11.5 billion a year to the state economy and employ 220,000 workers. Wildlife and forest-based recreation contribute an additional $11.7 billion.[102]

But as the timberland becomes valuable for development, small timber owners may no longer be able to afford to pay property taxes, and families of deceased timber owners may have to sell the land to pay crushing inheritance taxes.

According to the Pacific Forest Trust, which protects timberland through conservation easements, some nine million acres of forestland—one quarter of all private holdings—may be in danger of conversion to non-forest use in the Pacific Northwest alone.[103]

Just as an agricultural easement prohibits development while allowing a farmer to farm, a timberland easement prohibits development while allowing a specified level of timber harvest. The easement reduces the taxable value of the land, so a landowner can afford to keep it in forest, and preserves the forest's economic value while reducing the community's costs for schools, roads, and other development-related infrastructure.

In recognition of the need to conserve working forests, in 1990 Congress created the Forest Legacy Program to fund purchases of forestland and easements.[104] By 1998, the program had distributed approximately $38 million—barely enough to make a dent in conservation needs.

In 1999, as part of its effort to increase federal funding for land protection, the Clinton administration requested $50 million in Forest Legacy funds. Other money for forest protection comes from state and local programs. Many forest easements are held by the nation's more than 1,200 local land trusts.

Governments at all levels are prohibiting development in floodplains or are acquiring these lands for permanent flood protection.

Richard Day/Daybreak Imagery

Standing levee along the Mississippi River.

Communities Acquire Floodplains

No wonder that more and more governments at all levels are prohibiting development in floodplains or are acquiring floodplains for permanent flood protection. Near Boston, for example, officials protected—through purchase or easement—over 8,000 acres of wetlands along the Charles River that are capable of containing 50,000 acre-feet of water as an alternative to a $100 million system of dams and levees. Loss of these wetlands would have caused an estimated $17 million in flood damage annually. [105]

Similarly, the residents of Littleton, Colorado, created a 625-acre park and seasonal wetland rather than channel 2.5 miles of the South Platte River. (Local bonds and federal grants paid for the floodplain acquisition.) [106]

Some towns have even relocated to avoid the ongoing expense and trauma of trying to prevent—and rebuild after—a disastrous flood. In 1978, the entire population of Soldiers Grove, Wisconsin, moved out of reach of the Kickapoo River to avoid the devastating floods that had descended once each decade. The U.S. Army Corps of Engineers proposed a $3.5 million levee to protect the town, but maintenance expenses would have been double the town's annual property tax receipts. It cost the U.S. Department of Housing and Urban Development $1 million to move the town, saving an estimated $127,000 a year in flood damage. [107]

Because of the high cost of recurring flood damage, in 1988 the Federal Emergency Management Agency (FEMA) announced that in the future it would work to relocate homes and businesses out of the path of "recurring natural disasters."

Valmeyer, Illinois, relocated out of the reach of the Mississippi River after the Midwest floods of 1993—the most costly in U.S. history, with damage estimates between $12 billion and $16 billion. Residents of Valmeyer (pop. 900), 30 miles south of St. Louis, reestablished their town on a nearby hill after FEMA announced it would help rebuild homes only in a new, higher location. [108]

FEMA granted $2 million dollars in disaster assistance to Arnold, Missouri, after flooding by the Mississippi and

Open space in Minnesota? You bet!

- **Proportion of proceeds from Minnesota state lottery dedicated to that state's Environment and Natural Resources Trust Fund since its establishment in 1988: 40 percent**
- **Amount granted from that fund in its first decade to protect land and complete other environmental projects: $82.8 million**
- **Proportion of Minnesota voters that in November 1998 approved a 25-year extension of the Environment and Natural Resources Trust Fund: 77 percent**
- **Annual amount expected to be generated by this fund by the year 2010: $50 million** [109]

The town of Valmeyer, Illinois was relocated to save money spent on flood damage.

Richard Day/Daybreak Imagery

A protected floodplain that doubles as a wildlife refuge or recreation area may generate economic benefits by attracting hunters, birdwatchers, and other tourists to a community.

Voters in Arnold, Missouri, passed a bond initiative to raise funds to buy endangered open space.

Mike Moore

Urban trees, please

- **Proportion of tree cover in the total land area of Atlanta, Georgia: 27 percent**
- **Estimated annual value of this tree cover to improving Atlanta's air quality: $15 million**
- **Additional annual economic benefits to air quality that would be realized if Atlanta's tree cover were increased to 40 percent, the proportion recommended by the forestry organization American Forests: $7 million**
- **The amount Atlanta's current tree cover has saved by preventing the need for stormwater retention facilities: $883 million**
- **Additional economic benefits in stormwater retention that would be realized if Atlanta's tree cover were increased to 40 percent: $358 million**
- **Decline in natural tree cover in the Atlanta metropolitan area since 1972: 60 percent** [113]

Meramec Rivers in 1993. The assistance was awarded in part because of the town's strong flood-mitigation program, which includes the purchase of damaged or destroyed properties and a greenway along the Mississippi River floodplain. In 1995, another large flood struck Arnold, but this time damage amounted to less than $40,000 because of public acquisition of flood-prone and flood-damaged properties.[110]

FEMA estimates that federal, state, and local governments spent a total of $203 million acquiring, elevating or removing damaged properties from floodplains after the 1993 floods. This mitigation resulted in an estimated $304 million in reduced future disaster damages.[111]

Protected floodplains also create economic benefits by providing open space for recreation, wildlife habitat, and farming. A protected floodplain that doubles as a wildlife refuge or recreation area may generate economic benefits by attracting hunters, birdwatchers, and other tourists to a community.

In the Katy Prairie near Houston, Texas, the Trust for Public Land is helping flood control officials and a local land conservancy to purchase agricultural land to serve as a safety valve for seasonal flooding. Much of the land is leased to farmers for growing rice, and it also serves as critical habitat for migratory waterfowl, which attract bird watchers and hunters. Each dollar invested in the project will yield multiple economic benefits that promote local industries and tourism.[112]

Richard Day/Daybreak Imagery

Acquiring land, along with elevating and removing properties after the 1993 midwest floods saved an estimated $304 million in future flood damages.

Safeguarding the Environment

Open space conservation is often the cheapest way to safeguard drinking water, clean the air, and achieve other environmental goals.

Don Riepe, National Park Service

Green heron.

Communities are realizing that keeping water clean is almost always cheaper than cleaning it up.

Thirsty?

- **Increase in chlorine added to Chicago's drinking water as a result of source contamination since 1965: 30 percent**
- **Increase in Cincinnati water bills to pay for activated carbon filtration needed to remove pesticide contamination: 10 percent**
- **Amount spent to protect Milwaukee drinking water against Cryptosporidium bacteria, which killed 103 residents in 1993: $54 million**
- **Annual reduction in water treatment costs after the city of Gastonia, North Carolina, relocated its drinking water intake to a lake without surrounding development: $250,000**
- **Estimated cost to New York City to buy watershed lands to protect upstate drinking water supplies: $1.5 billion**
- **Estimated cost to New York City to build a filtration plant if upstate watershed lands are developed: $6 billion to $8 billion** [117]

The purchase of watershed lands can provide clean drinking water without constructing an expensive treatment plant. Sterling Forest, New York.

Cesar Alonso

Sterling Forest, on the New York-New Jersey border, is more than just a pretty woodland. The 16,000-acre forest gathers drinking water for more than two million people—a quarter of New Jersey's population. A few years ago the private owners of the forest proposed the construction of 13,000 homes, eight million square feet of commercial and light industrial development, and three golf courses. New Jersey officials calculated that this would so pollute the watershed that a new filtration plant would be required. Estimated cost: $160 million.

As an alternative, New Jersey officials offered $10 million toward the purchase of the land. The Trust for Public Land and the Open Space Institute entered negotiations with the owners and helped raise $55 million from public and private sources to preserve more than 90 percent of Sterling Forest. The purchase helped consolidate 150,000 contiguous acres of parks and protected land, conserving important habitat for bears, bobcats, beavers, and birds, including scarlet tanagers, while protecting seven miles of the Appalachian Trail. [114]

Communities nationwide face billions of dollars in expenses to treat polluted drinking water. Development of watersheds brings pollution from septic and sewer systems, from lawn and garden chemicals, and from highway runoff. Currently, 36 million Americans drink water from sources that violate EPA contaminant standards, and the agency has estimated that $140 billion will be needed over the next 20 years to make drinking water safe.[115]

As a result, more and more communities are realizing that keeping water clean is almost always cheaper than cleaning it up. Recognizing this, Congress has authorized the use of a portion of federal clean water funds for watershed acquisition. A 1991 study by the American Water Works Research Foundation concluded that "the most effective way to ensure the long-term protection of water supplies is through land ownership." [116]

Other communities also are reducing filtration costs by protecting watersheds:

• New York City is spending $1.5 billion to protect 80,000 acres of its upstate watershed—which seems like a lot of money until you understand that the alternative is an $8 billion

Wayne Morris

Securing land around Mountain Island Lake and its tributaries will protect the primary drinking water source for metropolitan Charlotte, North Carolina.

All wet

- **Estimated annual value of water quality improvement by wetlands along a three-mile stretch of Georgia's Alchovy River: $3 million** [119]
- **Estimated fraction of U.S. commercially valuable fish and shellfish that are spawned in wetland habitat: 75-90 percent** [120]
- **Estimated annual value of water storage and aquifer recharge in a single 557,000-acre Florida swamp: $25 million** [121]
- **Estimated value of all economic benefits generated by a single acre of wetland: $150,000 to $200,000** [122]

water filtration plant that would require an additional $300 million a year in operating costs.[118]

• With TPL's help, the San Antonio (Texas) Water System and the Edwards Underground Water District recently acquired more than 5,000 acres atop the Edwards Aquifer, where development would have polluted drinking water for 1.5 million people.

• In North Carolina, TPL recently purchased and conveyed to Mecklenburg County 1,300 acres on Mountain Island Lake, the water source for over half a million people in and around Charlotte. In 1996 the North Carolina legislature guaranteed at least $30 million a year to protect the state's water resources—including funds for the purchase of watershed land and easements.

Other communities are working to protect both water *quality* and water *quantity* by guaranteeing that rainwater recharges underground aquifers. 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 areas, there is simply not enough undeveloped open space to absorb rainfall. ►

Save the species!

Natural ecosystems support endangered species and other genetic resources of incalculable economic and biological value. In recognition of this value, state and federal laws protect endangered species in the path of development. But these essential laws can also prompt costly litigation and development delays without guaranteeing the network of protected habitat a species may need to survive.

Booming San Diego County, California—often cited as an endangered species "hot spot"—is pioneering an alternative approach to endangered species protection. Under the auspices of California's Natural Communities Conservation Program, local, state, and federal officials are working with landowners and conservation groups to develop a regional system of habitat reserves while easing development regulations on less sensitive land.

In support of this program, the Trust for Public Land has purchased and transferred to public ownership several crucial parcels, including songbird habitat along the Sweetwater River; coastal sage habitat in the Tijuana River Estuarine Research Reserve; breeding ground for the endangered California gnatcatcher; and five square miles of mesa, woodlands, meadows, and wetlands within Escondido city limits.

Such efforts support community economies by allowing guided development to continue while protecting valuable biological resources. By protecting the land on which other species live, we also protect the ecosystems on which all species—including our own—depend.

Anthony Mercieca

California gnatcatcher.

Banking land on the Cape

Long a favorite with summer vacationers, Cape Cod has been the fastest growing region of Massachusetts in recent years. The Upper Cape has become an extension of the Boston megalopolis 90 miles to the northwest. Elsewhere, summer homes have been converted to year-round residences for retirees and telecommuters.

In some communities, development has been so furious that property taxes have doubled to pay for schools and other services. The water table is being polluted by septic tanks, and roads are clogged with traffic.

In November 1998, voters decided that one sure way to protect the Cape's open land was to buy it. Fifteen communities—every town on Cape Cod—passed a 3 percent property tax surcharge to fund the purchase of open space for a Cape Cod Land Bank, at an average annual cost of $57 per household.

"People have to understand that every parcel that isn't saved is going to cost them, both in higher taxes and in a deteriorating lifestyle," said Representative Eric Turkington, who sponsored the state enabling legislation that made the votes possible.[126]

Researchers settled on $33 trillion a year as the most likely value of nature's worldwide environmental services.

► A 1998 report by the Massachusetts Clean Water Council showed that as much as 30 percent of that state's natural groundwater recharge may be lost due to development.[123]

Nature's Economic Services

Watershed conservation is only the most obvious way that protected open space can help communities meet environmental goals in a cost-effective manner. Open land provides the space for nature to perform life-sustaining services that otherwise would have to be provided technologically at great expense:

- degradation of organic wastes
- filtration of pollutants from soil and water
- buffering of air pollutants
- moderation of climatic change
- conservation of soil and water
- provision of medicines, pigments, and spices
- preservation of genetic diversity
- pollination of food crops and other plants

In one much-quoted study, 13 researchers led by Robert Costanza, an ecological economist at the University of Maryland, judged the worldwide annual value of 17 natural environmental services to be between $16 trillion and $54 trillion. Within this range, the researchers settled on $33 trillion a year as the most likely value of nature's worldwide environmental services. [124]

Robert Cadena

Wetlands filter pollutants and are essential to fisheries. Barnegat Bay, New Jersey.

The Value of Wetlands, Forests and Wooded Buffers

Forested open space and wetlands are particularly valuable. Trees control erosion, help clean the air of pollutants, mitigate global warming by absorbing carbon dioxide and other greenhouse gasses, and help shelter and cool our homes. The forestry organization American Forests estimates that trees in the nation's metropolitan areas contribute $400 billion in stormwater retention alone—by eliminating the need for expensive stormwater retention facilities. [125]

Wetlands serve as wildlife habitat, absorb storm and flood water, and reduce pollutant and sediment loads in watershed

Eric Swanson

Protecting the Barton Creek watershed from development preserves Austin, Texas's wildlife and water quality.

runoff. These are all services society would have to pay for otherwise. Natural open space provides these services for free; in its absence, society must pay for them.

Protected buffers along rivers, lakes, streams, and reservoirs help preserve clean waters that generate profits from tourism and fisheries. In the Pacific Northwest, the U.S. Forest Service is acquiring stream buffers to help protect a fishing industry that accounts for 60,000 jobs and $1 billion in annual income.[127] In one project, TPL helped the Forest Service acquire 790 acres along Washington's Bogachiel River to protect runs of chinook, coho, pink, and chum salmon, and steelhead and cutthroat trout. The purchase helped "show citizens that the land was more valuable for fishing and tourism than it was for timber," says N. J. Erickson, who administers the Pacific Northwest Streams Acquisition Program for the Forest Service.

Protected buffers also filter pollutants and nutrients from agricultural and residential runoff—a serious hazard to inland and coastal waters and the important economies they support. Scientists recently discovered a 7,000-square-mile "dead zone" in the Gulf of Mexico off Louisiana. Caused by excess nutrients in the rivers feeding the Gulf, this zone of depleted oxygen threatens a fishery worth $26 billion a year.[128]

States, communities, and the federal government are attempting to stem such losses by setting aside environmentally sensitive stream buffers. The U.S. Department of Agriculture helps farmers set aside wetlands through the Conservation Reserve Program, which will help fund restoration of 420,000 acres of wetlands, forests, and native grasses along the Illinois and Minnesota Rivers. A similar program pays farmers to retire flood-prone or eroding cropland along rivers and streams leading into Chesapeake Bay, where agricultural runoff threatens the $90 million blue crab fishery. [129]

Even the most ambitious attempts to place a dollar value on natural systems must fail, for ultimately these systems have value beyond our ability to measure. But that their loss results in significant economic loss is undeniable, and their preservation is essential to any effort to "grow smart" and create a livable future for all Americans. ■

TPL's Public Finance Program

In November 1998 the Trust for Public Land worked in support of 29 state and local park and open space bond measures, 26 of which passed, generating $2.6 billion in new funding.

TPL's Public Finance Program works with citizen groups, elected officials, and public agencies to help craft, pass, and implement public finance measures for conservation. TPL's team of campaign strategists includes experts in law, public finance, policy research, communications, public opinion polling, direct mail, and legislative analysis.

TPL offers the following services:

- **Feasibility Assessment: research, public opinion surveys, and analysis to ascertain the level of public support for new parks and open space funding.**
- **Measure Development: identification of the most appropriate sources of funding and design of a measure that meets legal requirements, that will attract public support, and that protects priority conservation lands.**
- **Campaign Management: assistance with polling, political strategy, direct mail outreach, and coalition building.**

For more information, call 617-367-6200 or see http://www.tpl.org/tech.

Endnotes

Steve Lerner is research director at Commonweal, a nonprofit that focuses on health and environmental issues, and the author of *Eco-Pioneers: Practical Visionaries Solving Today's Environmental Problems* (MIT Press, 1997).

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