Conservation of lands and waters is not an optional amenity, but the cornerstone of thriving economies and a foundation of community health and safety.
EXECUTIVE SUMMARY

Over the past two decades, researchers have analyzed the benefits provided by America’s natural lands and waters. Their research establishes the many benefits of conserving those natural resources in certain locales: jobs created, coastal zones protected, and rates of obesity reduced. While the studies’ individual findings are valuable, their real weight becomes apparent when taken as a whole. Collectively, they tell a powerful story: conservation of lands and waters is not an optional amenity, but the cornerstone of thriving economies and a foundation of community health and safety. This report provides a synthesis of the abundant published data on the economic, health, and social benefits of conservation. It outlines findings from nearly 600 articles and studies, including hundreds of peer-reviewed papers, as well as government and industry reports.

KEY FINDINGS

Research demonstrates that natural lands and waters are a cornerstone of prosperous local economies. Studies show that the economic benefits of conservation include:

- **Delivering strong returns on investments (ROI),** from 4 to 1 nationally ($4 returned in natural services such as clean water for every $1 invested) to as high as 11 to 1 in individual states.

- **Driving local job creation and consumer spending:** local public parks and recreation agencies generate $154 billion in economic activity annually.

- **Attracting businesses and skilled workers:** conservation is driving migration of businesses and workers to areas with more public lands and natural amenities. Eighty-five percent of Americans say that high-quality parks and recreation opportunities are important in choosing where to live.

- **Fostering working farms and ranches,** including protecting 5 million acres (an area the size of Massachusetts) of farms and ranches, and the livelihoods they support, from development.

- **Avoiding costs for cities and private utilities,** including as much as a 10-fold savings in treating drinking water and more than $23.2 billion in coastal storm protection annually.

Healthy lands and waters also are a central pillar for personal and community health. Research has documented the significant physical and health benefits of nature, including:

- **Lower rates of 15 major diseases,** including heart disease (15% lower), diabetes (20% lower), and depression (25% lower) for people who live within 0.6 miles of greenspace.

- **Lower U.S. health care costs** by improving health; green space can help reduce the annual cost of cardiovascular disease ($330 billion), diabetes ($327 billion), and depression ($210 billion).

- **Reduced symptoms** of attention-deficit disorder and post-traumatic stress disorder, challenges that afflict millions of Americans.

Finally, data show that conservation benefits come at a relatively small cost. The Land and Water Conservation Fund (LWCF), a major source of conservation funding, has invested $11.2 billion in federal conservation dollars nationally—for a return of $44.8 billion in natural goods and services—at no cost to taxpayers. It is perhaps unsurprising, then, that over 80% of Americans in a recent national poll said that protecting water, land, air, and wildlife is a good investment. Americans intuitively understand what the data has borne out: conservation is essential to our health and our economies.
Americans’ connections with natural lands and waters run deep. Whether an Idaho fisherman who finds solace in access to a nearby stream, a Cincinnati family that enjoys weekend trips to the local park, or members of a North Carolina church group who experience awe during their annual retreat to the Smoky Mountains, we find meaning and connection in nature. Part of nature’s intrinsic value and what we gain from nature cannot be quantified—connection, inspiration, fun—but much of it can.

Over the past two decades, a growing body of literature has demonstrated the fundamental role that healthy natural lands and rivers play in our local economies and communities. Taken together, these diverse studies paint a clear picture of conservation in America: conserved natural lands and waters are the cornerstone of vibrant economies, form an important basis for jobs and small businesses, and help keep our communities healthy and safe, while reducing costs and pressure on public infrastructure.

The data prove what Americans have long suspected. Polls show that over 80% of Americans believe that protecting water, wildlife, land, and air is a good investment. And Americans' votes have followed their beliefs. Since 1998, voters in conservative and liberal communities alike have approved over 75% of local and state ballot measures to fund land and water conservation and outdoor recreation.

This report provides a synthesis of the abundant published data on the economic, health, and social benefits of conservation. It outlines findings from nearly 600 articles and studies, including hundreds of peer-reviewed papers, as well as government and industry reports. As described in more detail in Sections 2 through 5, these findings show that conservation:

- **Sustains family farmers and ranchers**, who can use voluntary conservation to support stewardship and protect their ways of life
- **Protects natural services**, through which conservation helps provide clean drinking water, cleaner air, and protection from flooding—increasing safety and reducing costs
- **Boosts local economies**, where protected lands and natural amenities help attract businesses and workers and create jobs
- **Improves public health**, which is boosted by close-to-home access to parks and green space

**METHODS**

During our review of existing research on the benefits of conservation and the value of natural lands and waters, we identified nearly 600 articles and reports through online searches, evaluation of peer-reviewed citations, and our existing compiled sources. We reviewed these documents to identify key findings, which were then organized into the topic areas listed above and described in more detail in Sections 2 through 5 below.
BACKGROUND

Conservation provides strong ROI in the form of natural goods and services; it also directly supports economic growth, thriving local economies, and avoided infrastructure costs. Studies across the country show the ROI resulting from both public and private conservation dollars. The federal LWCF has an estimated 4 to 1 ROI (for every $1 invested in land conservation, $4 is returned in natural goods and services such as drinking water protection and flood control). The ROIs of conservation funding can be even higher: publicly funded land conservation in Alabama has an estimated ROI of 5 to 1; it’s 9 to 1 in Vermont; and in Maine, it is as high as 11 to 1. A Colorado study showed a 6 to 1 ROI for the state’s private conservation easements. These investments in natural goods and services directly benefit community members through water filtration and clean water, air pollutant removal and cleaner air, and flood control (to name a few). Conservation also plays a major role in improving health and quality of life through providing close-to-home access to green space.

The Land and Water Conservation Fund (LWCF) has provided $11.2 billion for federal land acquisition. An economic study showed that federal land protected through the LWCF has a return on investment of 4 to 1, meaning this program has resulted in $44.8 billion in natural goods and services without any direct costs to taxpayers.

LWCF is the cornerstone of America’s conservation funding. Launched as a bipartisan commitment to ensure Americans have recreational access to open spaces and that the country protects water resources, cultural heritage, and natural areas, it relies on revenues from off-shore oil and gas development (as opposed to taxes) for conservation.

Since 1965, the LWCF has provided over $18 billion in funding for parks and conservation; $11.2 billion has gone to federal land acquisition, and $4.7 billion has gone to states and local governments for open space and parks. An additional $2.6 billion has gone to other programs, including (since 2004) the Forest Legacy Program, which has helped conserve nearly 2.6 million acres of forest lands, including watershed lands that help provide clean drinking water.

The LWCF’s State and Local Assistance Program has funded parks and recreation in 98% of U.S. counties—a total of over 40,000 projects. Because the State and Local Assistance Program requires local matching funds, the federal investment of $4.7 billion dollars has been doubled—a total investment of $9.4 billion in local parks. There is a significant backlog in eligible projects ($30 billion in federal conservation needs and $27 billion in local park and recreation projects).

LWCF has directed $4.7 billion in grants to states and local governments (at no cost to taxpayers) for increasing outdoor recreation opportunities. These grants have funded projects in 98% of U.S. counties for—a total of over 40,000 projects.

Other federal programs also provide additional conservation funding to: (1) protect and maintain federal public lands, including the country’s national parks; (2) conserve and support stewardship of privately-owned farms, ranches, and working forests; and, (3) improve Americans’ access to outdoor recreation opportunities by expanding access to close-to-home parks, trails, and open space. These conservation programs include those managed by the U.S. Department of Agriculture’s (USDA) Natural Resources Conservation Service, including the Agricultural Conservation Easement Program.

Conservation easements are voluntary legal agreements that allow landowners sell or donate the rights to develop and use their land in certain ways (generally restricting development) in order to protect its conservation values. Agricultural conservation easements preserve farm and ranchland for ongoing agricultural use.

Studies show strong public support for conservation funding. Polls demonstrate that 74% of voters oppose cuts to programs that safeguard land, air, and water. Despite a proven, strong ROI and significant public support, conservation funding is declining. Congress generally allocates less than half of the possible funding for the LWCF each year.

1. All the ROI numbers cited in this report come from studies led by The Trust for Public Land. These studies look at funds invested and the resulting value of natural goods and services only. Direct economic growth, infrastructure, and health benefits are not included in the ROI numbers, but are part of the larger set of benefits that is discussed throughout the report.
America’s family farms and ranches, which sustain livelihoods and contribute to local economic growth and agricultural production, are disappearing. Thirty-one million acres of agricultural land was developed between 1982 and 2012—equivalent to most of Iowa.\textsuperscript{xv} This loss of farmland included almost 11 million acres of the best land for growing crops.\textsuperscript{xvi} The number of U.S. farms peaked at 6.8 million in 1935, and there are now only 2.05 million.\textsuperscript{xvii}

Family farmers and ranchers are irreplaceable. Through committed and purposeful stewardship, they support vibrant local economies and rural culture, protect domestic food security, and maintain enormous expanses of open space—providing viewsheds, flood control, wildlife habitat, and much more.\textsuperscript{xviii} Given that 97% of U.S. farms are family-owned, the decline in agricultural lands is a risk to family farms and ranchers, and has national economic repercussions: agriculture, food, and related industries added $992 billion to the U.S. economy\textsuperscript{y} in 2015 and supported 21.4 million jobs (2.6 million on farms).\textsuperscript{xix}

Many younger members of farm and ranch families face major economic obstacles to staying on the land and maintaining their way of life. Conservation funding has helped slow this trend, keeping family farms and ranches intact and younger generations working the land. Tools like voluntary agricultural conservation easements, which protect working farms and ranches from development while leaving it in private hands, can reduce landowners’ annual tax liability and estate taxes and help families continue farming and ranching. Tax credit programs, in states like New Mexico and South Carolina, also allow private landowners to sell these tax reductions as credits for cash.\textsuperscript{xx} Money from conservation easements circulates back into local farm communities and economies.\textsuperscript{xxi} Investments in conservation easements also have a strong ROI: a study in Colorado showed that the ROI for conservation easements was 6 to 1.\textsuperscript{xxii} American Farmland Trust estimates that 5 million acres of working farms and ranches have been protected through conservation easements.\textsuperscript{xxiii}

The USDA also has programs that finance conservation practices and technical assistance as well as voluntary conservation easements.\textsuperscript{xxiv} Its Agricultural Conservation Easement Program, and its predecessor programs, have worked with landowners for twenty-five years, protecting 4.4 million acres of wetlands and agricultural lands and funding conservation easements for nearly 2 million.\textsuperscript{xxv} In 2018 alone, it plans to spend $250 million on voluntary conservation easements, responding to requests from local landowners. The USDA’s conservation programs also provide family farmers and ranchers with technical assistance and funding for stewardship practices that help save energy, benefit soil and water quality, and protect wetlands and wildlife habitat.\textsuperscript{xxvi}

Voluntary conservation easements have protected millions of acres of land nationally, kept thousands of family-run farms in production, and have been found in one state to have a demonstrated ROI of 6 to 1.
Harvesting timber generates $200 billion of economic activity each year and directly supports one million jobs. xxvii Family-run forests are under threat too. Over one-third of the forest land in the U.S. is family-owned—15% of all the nation’s land. xxviii By 2060, though, the country is projected to lose 16 to 34 million acres of forest. xxix Indeed, thousands of acres of family woodlands are lost each year—converted for development, subdivided, or destroyed by wildfire, drought, insects, and disease.xxx

As with farmers and ranchers, operational expenses, taxes, and cultivating the next generation of forest managers are major concerns for those who own family-run forests. Voluntary conservation easements have been shown to help by easing tax burdens and providing needed funding to keep land forested and maintain sustainable timber harvesting. xxxi Forests can also be protected through community forestry programs in which forests are preserved and managed by local or tribal governments or nonprofits for the benefit of local communities.

Agriculture and food production added $992 billion to the U.S. economy in 2015, but 31 million acres of farm and ranch land (a land area the size of Iowa) was lost to development between 1982 and 2012. Without conservation easements, the country could have lost an additional 5 million acres (roughly the size of Massachusetts) to development.

National and state funding is critical to these conservation efforts. The USDA’s 2018 budget, for instance, included $5.6 billion in funding for Farm Bill conservation, bringing program enrollment to 466 million acres. xxiii In 2017 alone, the U.S. Forest Service provided $62.3 million in funding for private forest conservation through its Forest Legacy Program and $2 million for community forests. xxiv States and the federal government also help support these voluntary conservation easements through tax credits and deductions.

Loss of forests endangers the U.S. water supply. Forests supply drinking water for 180 million Americans in 68,000 communities; they are the largest source of drinking water in the U.S.

CASE STUDY

Protecting Family Farming Traditions through Conservation; Taos County, New Mexico

Nearly 200 years ago, Crestina Trujillo-Armstrong’s great-grandfather settled on 75 acres in the San Cristobal Valley in Taos County, New Mexico. The family’s homestead extends across the width of the valley and is bisected by San Cristobal Creek—a critical source of water for irrigation and livestock. Crestina is now in her 60s. Her house sits in the middle of the property, and the family still does the daily chores of corralling livestock and tending to the garden. “I can talk to this land. Ask it for advice or direction. It’s made me laugh and it’s made me cry,” Crestina says. “It’s hard to explain. You have to experience it.” It’s an experience that’s getting harder and harder to pass to the next generation in Taos County. Development pressure and rising land values mean many old families are selling out or subdividing. County appraisers are finding that more than half the properties once used for agriculture sit fallow or have been developed. For decades, Crestina has watched as old family farms surrounding hers were cut up and sold off. However, Crestina was determined to preserve the land and the family’s way of life. In 1999, she and her brother put a conservation easement on 38 acres of the family homestead, including all the irrigated land. The easement means the land can never be developed and can be passed to her kids intact. (Adapted from the Taos County Community Conservation Plan, 2017xxxiv)

2. There are three primary types of economic impacts: direct, indirect, and induced. Direct effects here include the wages and operating expenses of farms and ranches. In the next section, direct effects include wages and operating expenses of public land and park agencies. Indirect effects capture the impacts of supplying the activities that create the direct effects. Induced effects capture the spending of households that receive income from direct and indirect effects. Indirect and induced effects are sometimes referred to as “multipliers.”
LOCAL ECONOMIES STRENGTHENED AND DIVERSIFIED THROUGH CONSERVATION

PUBLIC LANDS AND LOCAL ECONOMIES

Research shows that conservation can play a big role in creating thriving, diversified economies. Investments in conservation are powerful drivers of economic growth that ripple through local, state, and national economies.xxxv Public lands from neighborhood parks to national parks provide major economic benefits. Local public park and recreation agencies generate $154 billion in economic activity and support 1.1 million jobs every year.xxxvi National parks generate $18.2 billion in visitor spending and support 306,000 jobs.xxxvii Another study estimates that the 49 designated National Heritage Areas generate $12.9 billion annually, support 148,000 jobs, and provide $1.2 billion in federal taxes.xxxviii

While the economies of many rural areas are growing more slowly than their urban counterparts, access to public open space can help strengthen and diversify them.xxxix Some rural towns have been able to attract new jobs, highly skilled workers, retirees, and tourists because of recreational and natural amenities provided by protected lands, offering a road map for other communities. Studies have shown that rural counties in the West with the largest percentage of federal public land had higher population, employment, and income growth between 1970 and 2014 than counties with smallest percentages.xi Proximity to national parks and national monuments brought clear economic benefits; national parks generated $35.8 billion for gateway communities in 2017,xx and employment and per-capita income improved in regions adjacent to national monuments.xiii A study from Headwaters Economics found that jobs in rural western counties with more than 30% federal protected land increased by 345% between 1970 and 2010, while in rural western counties with no protected federal land, jobs increased by only 83% during the same period.xiii

DRIVING MIGRATION OF BUSINESSES AND RESIDENTS

Studies demonstrate that new businesses and residents are drawn by scenery, clean water and air, and access to recreation and public lands.xiv A recent survey by the National Parks and Recreation Association indicates that for 85% of Americans, high-quality parks and recreation opportunities are important in choosing where to live.xiv Three-quarters of corporate executives report that quality-of-life amenities are important in choosing where to locate.xivi A study of Colorado small businesses ranked parks, recreation, and open space as the most important quality of life factors influencing choice of location,xiv and a recent poll found that 90% of small business owners in four western states think that public lands boost local businesses.xiviii, xix

Even if businesses do not physically relocate to amenity-rich rural areas, they may allow employees to work remotely. This means that existing employees can move from higher-cost urban areas; it can also increase employment options for existing rural residents.¹ Remote work was four times more common in 2015 than in 1995; 37% of workers have now spent some time telecommuting.¹ Knowledge workers who relocate...
to rural areas are generally relatively highly-educated and high-earning, which helps boost local economies. Similarly, retirees attracted by protected lands boost local economies by spending their investment and retirement income and they generally pay more in taxes than they use in services.

Parks and open space attract workers and retirees to urban areas too. Studies show that both millennials and baby boomers prioritize walkable cities with quality of life enhancing features like parks. Investments in parks and green space are helping draw millennials back to mid-sized cities in particular. According to Catherine Nagel, the Executive Director of the City Parks Alliance, “so strong is the case for urban parks in America’s future that the bipartisan Mayors for Parks coalition wrote a letter to the Trump transition team calling for parks to be prioritized among its infrastructure plans.” The letter emphasized the importance of parks in attracting businesses, workers, and investment.

Local park and recreation agencies generate $154 billion in economic activity annually and support 1.1 million jobs.

OUTDOOR RECREATION

Outdoor recreation on protected parks and open spaces by residents and tourists also helps local economies. Over 146 million Americans (49% of the population) participated in at least one outdoor activity last year. This represented 10.9 billion outdoor outings (an average of 74 per person). These outdoor activities generated $887 billion in consumer spending, resulted in 7.6 million direct jobs, and led to $65.3 billion in federal tax revenue and $59.2 billion in state and local tax revenue.

Outdoor recreation contributes more to the U.S. economy than pharmaceuticals or motor vehicles, and the outdoor recreation industry grew 5% per year, even during the recession. Many of the activities that take place in parks and conserved open space including biking, exercising, exploring nature, gardening, hiking, picnicking, swimming, walking, hunting, fishing, and wildlife viewing require equipment or services that generate local jobs. According to a recent study by the Bureau of Economic Analysis, the outdoor recreation industry represented 2.2% of the nation’s gross domestic product (GDP) in 2016.

Rural counties in the western United States with the highest percentage of protected federal land had higher employment and income growth than counties with the lowest percentage of protected public lands.

HUNTING, FISHING, AND OTHER WILDLIFE-BASED RECREATION

Wildlife-based recreation is also big business. According to the U.S. Fish and Wildlife Service, 103.7 million Americans participated in wildlife-related recreation in 2016, generating $156.9 billion. This includes 35.8 million people fishing, 11.5 million hunting, and 86 million people wildlife watching. In 2011, birdwatchers alone generated $40.9 billion in trip and equipment expenditures and $107 billion in total economic output; 666,000 jobs; and $13 billion in local, state, and federal tax revenue.

Hunting and fishing are major drivers of local economies—and conservation funding. Excise taxes on hunting and fishing equipment have generated over $14 billion since 1938, which has funded conservation programs and helped manage fish and game populations. The total cost of hunting licenses in 2018 was $853 million, and the cost of fishing licenses was nearly $707 million. Excise taxes and license fees provide approximately 60% of the total funding for state wildlife agencies. A recent study indicates that because efforts to increase fishing and hunting opportunities have been so successful, equipment manufacturers have received a 1,100% return on investment that they have made through these taxes.

Conservation is driving migration of businesses and workers to areas with the most public lands and natural amenities. Eighty-five percent of Americans say that high-quality parks and recreation opportunities are important in choosing where to live.
Conservation funding plays an enormous role in all these benefits. According to the Outdoor Industry Association, “public lands and waters are the outdoor industry’s basic infrastructure.” From local parks to national parks, public access to natural amenities and open space for recreation are significant drivers in determining where people want to live and work—and where businesses want to locate. And established parks and public lands generate billions of dollars in economic activity and support millions of jobs.

Parks and protected areas provide the key infrastructure for the $887 billion outdoor industry, an industry larger than pharmaceuticals ($466 billion) or motor vehicles ($465 billion).

CASE STUDIES

The Role of Protected Land and Recreation Opportunities in Diversifying a Small Town Economy; Sandpoint, Bonner County, Idaho

Sandpoint is a small town (fewer than 8,000 people) in Bonner County in the remote northern Idaho panhandle. Despite a decline in local extractive industries and the closure of some key businesses, Sandpoint has been able to continue to grow and thrive in large part because of its natural amenities and corresponding high quality of life. Sandpoint’s location along Lake Pend Oreille and near extensive recreation opportunities in the public lands of its surrounding mountains mean it has been able to attract both retirees and businesses and workers from aerospace, pharmaceutical, and software industries.

According to Sandpoint’s former planning and economic development director, the area’s natural and recreational amenities “are huge attractants and incentives for the creative class and people who want to live in very high-quality communities.”

Between 1970 and 2013, Bonner County’s population grew by 160% and employment grew 321%. A recent study estimated that expanding outdoor recreational opportunities in Bonner County could further diversify the area’s economy and generate up to $4.5 million in additional spending by visitors.

Faith-based Camps Connect Young People to Nature and Religious Identity; Camp Tawonga, Groveland, California

Camp is a big part of childhood for many kids, and many camps incorporate outdoor adventures and time in nature. The estimated 14,000 camps in the U.S. generate $18 billion per year and employ 1.5 million staff. One-fifth of accredited camps are faith-based, and an estimated 40% of teenagers have attended a faith-based camp. Faith-based camps that bring together outdoor experiences with religious education and community-building are becoming more common. Camp Tawonga is a Jewish camp in the Sierra Nevada mountains in California surrounded by the Stanislaus National Forest. The camp has been focused on building Jewish identity and connections to nature since 1925.

According to Camp Tawonga’s Director, Rebecca Meyer, “Immersion in nature is fundamental to the camp experience. There is no WiFi and no cell service at our site. Campers see the Milky Way at night, catch frogs by the lake, swim in the Tuolumne River, and backpack into nearby Yosemite National Park. When children have the opportunity to unplug and take a break from screen time, they develop social skills like empathy and cooperation. With fewer distractions, the natural setting fosters human connection. On their backpacking trips, campers build group identity and resilience. Sitting in our outdoor sanctuary, campers are poised to experience holiness, as they sense the interdependence of all living things and feel connected to something much larger than themselves.”

Training the Next Generation of Hunters in Texas

When Sterling Lands was growing up in Baton Rouge in the fifties, he’d often go hunting in the forests and flatlands near his home. Along with his dad, uncles, and cousins, he would head out in search of rabbits, squirrels, possums, geese, and turkeys—anything they could bring home for dinner. “We weren’t just hunting for sport,” he says.

By the early nineties, Lands, who had moved to Austin and become the pastor of Greater Calvary Bible Church in 1984, realized hunting was an experience he wanted
to share with the youngsters in his congregation. To make that happen, he worked with Andrew Sansom, then the director of Texas Parks and Wildlife. Sansom arranged a weekend excursion to Parrie Haynes Ranch, in Killeen, and Lands recruited several adults from the church to help him take a small group of kids from Greater Calvary on their inaugural hunting trip. Volunteers at the ranch taught them the basics of shooting, and two of the kids managed to kill deer. “I took both deer and had them made into sausage, and we fed the entire congregation,” says Lands. “It was a celebration for all of us.”

Lands believes the experience was transformative. Greater Calvary has since purchased its own fifty-acre tract of land an hour south of Austin, and hunting has become an integral part of its youth mentorship program, Rites of Passage. “You have to teach kids how to live responsibly,” says Lands. “If I can get a child to learn what it means to be character-centered, then they’re going to do the right thing, for the right reason.”

(Adapted from “Meet the Next Generation of Texas Hunters” in Texas Monthly, October 2018)
Research shows that conservation saves communities money by providing cost-effective “green infrastructure.” Green infrastructure refers to harnessing nature to provide services for people. These services include water filtration, pollution reduction, and flooding protection. Protected watersheds, wetlands, and coastal mangroves can play critical roles in ensuring clean drinking water and healthy fisheries. Even in dense cities parks and urban forests can be key elements of green infrastructure—reducing stormwater runoff and improving air quality. These services make communities healthier and safer. Below are the key benefits cited in the existing research:

**CLEAN DRINKING WATER**

Conserved natural lands, including parks, open spaces, and forests, help filter rainfall and stormwater runoff and protect sources of drinking water. Conserved forested lands within watersheds are especially critical to protecting drinking water quality.

- Forests supply drinking water for 180 million Americans in 68,000 communities; they are the largest source of drinking water in the United States. Forests managed by the U.S. Forest Service provide water to 66 million people in 3,400 communities across 33 states. The estimated value of water from Forest Service lands is at least $3.7 billion per year.

- The American Water Works Association estimates that replacing water infrastructure in the U.S. will cost over $1.7 trillion by 2050.

- Protected watersheds can supply clean drinking water much more cost-effectively than water treatment plants; treating drinking water from an unprotected watershed can cost 10 times as much as from protected watersheds. New York City spent $1.5 billion conserving forested watershed lands avoiding the cost of a $8–10 billion new water filtration plant.

- A study of 27 water suppliers showed that for every additional 10% of forest cover (up to 60%), water treatment costs decreased 20%. The average treatment costs for a watershed that was only 10% forested was $923,450 per year, while the average treatment costs for a 60% forested watershed was $297,110—less than one-third as much.

Treating drinking water from an unprotected watershed can cost 10 times as much as from a protected watershed. New York City spent $1.5 billion conserving forested watershed lands avoiding the cost of an $8–10 billion new water filtration plant.

**CLEANER AIR AND COOLER TEMPERATURES**

Both inside and outside of cities, trees help remove health-threatening pollution from the air, including nitrogen dioxide, sulfur dioxide, ozone, and particulate matter. Trees play a particularly important role in reducing the acute effects of urban air pollution. In addition, urban trees also help reduce high temperatures...
exacerbated by "urban heat islands"—a phenomenon created by surfaces in cities (such as sidewalks, streets, and roofs) retaining heat during hot days.

Air pollution causes 200,000 premature deaths, 16,000 preterm births, and $131 billion in costs annually in the United States. Forests provide $6.8 billion in air pollution removal each year.

- A recent study determined that air pollution just from the energy sector is associated with $131 billion in damage to health, crops, and built infrastructure annually in the U.S. Another study linked air pollution to 16,000 annual preterm births in the U.S. leading to $4.3 billion in costs each year. Air pollution also causes approximately 200,000 premature deaths each year in the U.S.

- Urban trees (many in parks, protected open spaces, and other natural lands) provide the equivalent of $3.8 billion of air pollution removal. Forests overall provide $6.8 billion in air pollution removal annually in the U.S.

- According to the Environmental Protection Agency, the urban heat island effect means that cities with at least one million people can be up to 5°F warmer during the day and 22°F warmer in the evening than surrounding areas. Surfaces shaded by trees can be 20–45°F cooler than unshaded areas.

- Warmer temperatures from urban heat islands cause higher peak energy demand, especially for air conditioning, and exacerbate air pollution, impair water quality, and increase heat-related illnesses and mortality. A recent study indicates that the economic cost of rising temperatures will likely be over twice as high in cities because of the urban heat island effect.

- More than 600 people in the U.S. die because of extreme heat each year; heat waves are particularly dangerous for seniors, people who work outdoors, and other vulnerable populations.

More than 600 people die each year in the U.S. because of extreme heat. Parks and urban trees help reduce the impacts of heat in urban areas; surfaces shaded by trees can be 20-45°F cooler.

**PROTECTION FROM FLOODING**

Catastrophic flooding has become increasingly common, and many Americans live in vulnerable areas. Conserved areas including parks, wetlands, and mangroves help reduce the impacts of storms and flooding. Studies show that conserving and restoring wetlands, salt marshes, and mangroves is one of the most cost-effective ways to protect coastal areas.

- The National Oceanic and Atmospheric Administration estimates that major floods have caused an average of $4.3 billion in damage per event since 1980. Hurricane Harvey, which hit Texas in 2017 and dropped 60 inches of rain in some areas, caused an estimated $125 billion in damage—much of it from flooding.

- Scientists estimate that U.S. coastal wetlands provide $23.2 billion in storm protection services each year. Wetlands prevented more than $625 million in property damage during Hurricane Sandy and reduced damage across 12 coastal states by 11%. Wetlands around Boston are estimated to prevent $42,111 of flood damage per acre.

Coastal wetlands in the U.S. provide $23.2 billion in storm protection each year, and wetlands prevented more than $625 million in damage during Hurricane Sandy.

Conservation funding plays a critical role in protecting all of these natural services that reduce costs and increase health and safety—and, as discussed elsewhere in this report, the ROI is enormous. Economic studies show that the federal LWCF has a 4 to 1 ROI (for every $1 invested in land conservation, $4 is returned in natural goods and services such as drinking water protection and flood control), and other studies indicate that in some states the ROI of conservation funding can be as high as 11 to 1.
CASE STUDIES

Conservation Increases Property Values Across the United States

The National Association of Home Builders estimates parks and recreation areas can increase the value of nearby building sites by 15–20%.\textsuperscript{iv} Other studies indicate a range from 5 to 33%\textsuperscript{v}. Bordering permanently protected open space appears to provide the most benefit.\textsuperscript{vi} A recent study in Los Angeles indicated that proximity to parks adds â$2.29 billion to local residential property values.\textsuperscript{vii}

Parks as Essential Infrastructure; Houston, Texas

Hurricane Harvey devastated Houston, Texas, and surrounding Harris County in August 2017. Sixty inches of rain fell in some areas.\textsuperscript{vi} At least 88 people were killed,\textsuperscript{v} and more than 200,000 homes were damaged;\textsuperscript{ix} the total estimated cost of storm damage was over $125 billion.\textsuperscript{xi} Exactly one year later, Harris County residents passed a $2.5 billion bond measure to fund projects to reduce the impacts of future storms with the support of 85% of voters\textsuperscript{x}. Some of these projects will be parks. Thinking of parks as part of the solution to flooding is not new in Houston. The Harris County Flood Control District has used parks as a flood-control strategy along 31 miles of Brays Bayou. “Project Brays” includes detention basins that can hold 3.5 billion gallons of stormwater; the detention basins have been designed so that they can also serve as five parks and a trail system.\textsuperscript{xi} According to Harris County Commissioner Rodney Ellis, “parks and greenways enhance community resilience. Just days after Hurricane Harvey, our office received a constant stream of calls asking if and when our parks would be open again. Those calls reaffirmed my belief that parks and green spaces are not amenities, instead they are integral to the lives of our residents.”

Watersheds Threatened by Wildfire; Colorado

In 1996 and 2002, Colorado experienced two devastating wildfires; the Buffalo Creek fire burned 12,000 acres and the Hayman fire burned 137,760 acres, much of it within watersheds of Denver Water, the state’s largest water utility that provides water to 1.4 million people in the Denver Metropolitan area. The fires were hugely costly for Denver Water, requiring $27 million in repairs to Denver Water’s collection system and reservoirs. To prevent future costly clean-ups, Denver Water is investing in forest conservation and restoration. Partnering with the U.S. Forest Service, which manages 90% of Colorado’s lands with watersheds that supply public water, Denver Water is focused on the restoration of 88,000 acres of forest lands. According to Jim Lochhead, Denver Water CEO, “Those big fires taught us that investing in forest health is less expensive than dealing with the aftereffect of a catastrophic wildfire.”\textsuperscript{xv}
Over the past two decades, a significant body of scientific research has drawn a connection between spending time in nature and improved physical and mental health. This link remains strong from small towns to big cities across many countries, even when socioeconomic differences (which themselves have major impacts on health outcomes) are taken into account. Many recent studies use objective measures like blood pressure, cognitive tests, immune system function, and even crime statistics to show that increased exposure to nature has positive impacts on mental, physical, and social health.

Unfortunately, these benefits are not evenly distributed across the population. One in three urban residents does not have access to a park with a 10-minute walk of their home. In addition, access to nature varies by socioeconomic, racial, and ethnic group; neighborhoods occupied primarily by African Americans and people with low and moderate socioeconomic status have fewer high-quality public parks, trails, and playgrounds in their neighborhoods. In addition, residents may not feel safe in poorly-maintained parks or may not feel welcome in parks that do not reflect their interests or cultural backgrounds.

A large-scale study shows that residents living within 0.6 miles of greater amounts of green space had significantly lower rates of 15 diseases, including heart disease, depression, asthma, and diabetes.

Even when parks are accessible, many people seem to be spending less time in nature despite the demonstrated benefits. Experts point to a “migration indoors,” especially in cities. Studies show that Americans spend 90% of their time inside buildings or vehicles. In a recent report, the American Academy of Pediatrics drew attention to the importance of playing outdoors for children’s physical and mental health. Instead of spending time outside, the average American child spends five to eight hours a day in front of a screen, and this disconnection from nature has major impacts on health.

A 2009 study provides particularly strong evidence for the link between close-to-home green space and health outcomes. The study looked at medical records for over 345,000 people (instead of less reliable self-reported data) and controlled for socioeconomic status. Results showed that when people had just 10% more green space than average within 0.6 miles of home, they had significantly lower rates of 15 diseases, including heart disease, depression, asthma, and diabetes, and the same rates of the remaining nine other diseases examined in the study. The study also looked at the differences in health outcomes for those living in very green areas (90% green space within 0.6 miles) versus minimally green areas (only 10% green space within 0.6 miles). Those differences are shown on the following page in Table 1.
A great deal of other research has echoed these findings. Many additional studies have established connections between increased green space and lower rates of chronic diseases such as heart disease, diabetes, and asthma. Diverse studies have strengthened evidence for ties between time spent in nature and lower rates of depression and anxiety. Studies have also shown links between close-to-home green space and lower rates of obesity, including childhood obesity, and lower risks of preterm birth and low birth weight. Research also indicates that exposure to nature can reduce symptoms of post-traumatic stress disorder and attention deficit hyperactivity disorder and can increase cognitive abilities and creativity. Finally research points to the powerful role of green space in reducing stress, improving immune function, reducing mortality, and increasing overall sense of well-being.

Diabetes affects over 30 million Americans and costs the U.S. economy an estimated $327 billion per year. More access to green space has been linked to 20% lower rates of diabetes—even controlling for socioeconomic factors.

Overall, the evidence shows the following positive impacts on health from exposure to nature:

- Lower levels of chronic diseases, including heart disease and diabetes
- Lower rates of obesity
- Lower risk of preterm birth and low birth weight
- Lower levels of depression and anxiety
- Reduced symptoms of post-traumatic stress disorder
- Reduced symptoms of attention-deficit/hyperactivity disorder
- Increased cognitive ability and creativity
- Reduced stress (and lower levels of stress hormones)

### Table 1. The health outcomes linked to living in areas with 90% green space versus 10% green space (adapted from Maas et al. 2009)

<table>
<thead>
<tr>
<th>Negative Health Outcome</th>
<th>Percent Decrease in Very Green Areas (90% green space)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cardiovascular Disease</strong></td>
<td></td>
</tr>
<tr>
<td>Heart disease</td>
<td>-15%</td>
</tr>
<tr>
<td>Coronary heart disease</td>
<td>-21%</td>
</tr>
<tr>
<td>High blood pressure</td>
<td>-6%</td>
</tr>
<tr>
<td>Stroke</td>
<td>-17%</td>
</tr>
<tr>
<td><strong>Respiratory Disease</strong></td>
<td></td>
</tr>
<tr>
<td>Upper respiratory tract infection</td>
<td>-19%</td>
</tr>
<tr>
<td>Asthma, chronic obstructive pulmonary disease</td>
<td>-23%</td>
</tr>
<tr>
<td><strong>Other Diseases</strong></td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td>-20%</td>
</tr>
<tr>
<td>Cancer</td>
<td>-10%</td>
</tr>
<tr>
<td><strong>Mental Illness</strong></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>-25%</td>
</tr>
<tr>
<td>Anxiety disorder</td>
<td>-31%</td>
</tr>
</tbody>
</table>
• Improved immune function (and higher levels of natural killer cells)
• Lower mortality
• Increased overall sense of well-being

Many possible mechanisms may explain the connection between exposure to nature and improved health. These mechanisms include: healthier environmental conditions, stress reduction, improvements to immune system function, providing opportunities for physical activity, and supporting stronger social ties. Each of these mechanisms is described in more detail below.

HEALTHIER ENVIRONMENTAL CONDITIONS

As described in Section 4, natural lands, green space, and conserved land supports healthy environments through clean drinking water, improved air quality, reduction of extreme heat, and reduction of the impacts of flooding.

• Green space helps prevent runoff and erosion and filters pollutants from water, and forested watersheds are especially effective at protecting water quality.

• Air pollution causes approximately 200,000 premature deaths each year in the U.S. Urban trees provide $3.8 billion in air pollution removal each year, and forests overall provide $6.8 billion in air pollution removal.

• Trees and green space also help moderate local temperatures. Heatwaves are especially dangerous to elderly people, those with impaired health, and outdoor workers.

• Flooding, especially major flooding, can have both short- and long-term effects that threaten health. Coastal mangroves, wetlands, and coral reefs protect people from flooding; coastal wetlands provide $23.2 billion in storm protection each year.

• In addition, exposure to microorganisms and volatile organic compounds from plants and soil seems to have health-boosting effects.

IMPROVED IMMUNE SYSTEM FUNCTIONING

Contact with nature also seems to increase immune system function, particularly the number of “natural killer” cells, which fight infections and tumors. The immune system plays a role in inflammation, which can affect cardiovascular disease, allergies, anxiety, asthma, diabetes, and birth weight. One study compared the impacts of three-day trips to forested and urban areas and found that forested areas boosted the number of natural killer cells by 50%, and the effects were still pronounced after 30 days. A possible explanation for the role of green space in improving immune function is that exposure to nature may help switch the body from the high-stress of “fight of flight” mode to the low-stress of “rest and digest” mode.

PROVIDING OPPORTUNITIES FOR PHYSICAL ACTIVITY

Studies have shown that close-to-home parks and open space encourage people to get more exercise, which is one of the most reliable ways to improve health. Exercise improves both physical fitness and mental acuity, especially for older adults. Only one-third of youth and one-half of adults are currently meeting the U.S. Department of Health’s exercise guidelines, and the CDC estimates that lack of physical activity extremely high, and only 37% of people say they are managing their stress well. Stress can cause physical symptoms, decrease work productivity, and impact social connections. One estimate indicates that workplace stress may cause 120,000 deaths and up to $190 billion in costs per year in the U.S. Many studies have shown that seeing and hearing nature reduces stress. A study of workplace stress indicates that simply having views of trees through windows reduces stress for workers of all ages across all types of work. Another study shows that just 15 minutes of walking in the forest reduces stress hormone (cortisol) levels, pulse rate, blood pressure, and increased parasympathetic nervous system activity—all signs of significantly reduced levels of stress. As noted above, studies have also linked exposure to awe-inspiring nature with reduced PTSD for veterans.
leads to $117 billion in annual health care costs. Studies have shown that exercising outdoors can be more restorative than exercising indoors, and that the benefits of exposure to green space can be increased through exercise. More and more U.S. healthcare providers have begun to “prescribe” active time outdoors through Park Prescription (ParkRx) programs or “walk with a doc” programs in neighborhood parks.

**SUPPORTING STRONGER SOCIAL CONNECTIONS**

Studies show that green space, parks, and other protected open space help promote stronger social connections, build a stronger sense of community, and even help reduce aggression. An early study looking at nature and social connections found that buildings in the same area with the same resident demographics that were surrounded by more green space had lower crime rates. The ability of green space to bring people together is particularly important in vulnerable communities with limited access to the restorative benefits of nature and for older adults—for whom loneliness threatens health more than physical inactivity or obesity. Experiencing nature can also elicit feelings of awe, which in turn encourages altruism and strengthens social connections. A recent study demonstrated the effectiveness of experiencing awe in nature in reducing symptoms of PTSD in military veterans and at-risk youth.

Depression is the leading cause of disability in the U.S., contributing to an estimated 390 million disability days per year. More access to green space has been linked to 25% lower rates of depression.

**ECONOMIC COSTS OF COMMON HEALTH CONDITIONS**

The health conditions that can be improved by access to nature have major economic costs, as summarized below. There are racial and economic disparities in most of these health outcomes, but studies have shown that close-to-home green space can improve health outcomes even more for those with low socioeconomic status.

- **Cardiovascular Disease.** Cardiovascular disease refers to conditions related to narrowed or blocked blood vessels—including heart attack and stroke. It affects over 92 million U.S. adults and causes one-third of U.S. deaths each year. The cost of medical expenses and lost productivity from cardiovascular disease is nearly $330 billion per year. These costs could exceed $1 trillion annually by 2035.

- **Diabetes.** Over 30 million Americans have diabetes, and it is the seventh leading cause of death. Diabetes is related to the production of insulin and the ability of the body to process glucose. It can affect the circulatory and nervous systems and impair kidney function and vision. The annual cost of diabetes to the U.S. economy is an estimated $327 billion.

- **Asthma.** Asthma is a lung disease in which the airways become inflamed making it difficult to breathe. Each year, over 15 million people in the U.S are treated for asthma. The estimated annual cost of medical expenses, missed work, and asthma-related mortality is $80 billion.

- **Obesity.** Nearly 40% of U.S. adults and 19% of children are obese. Obesity is linked to increased mortality, high blood pressure, type 2 diabetes, heart disease, osteoarthritis, and some forms of cancer. The estimated annual medical cost of obesity was $147 billion in 2008.

- **Preterm Birth.** Preterm babies, those born before 37 weeks of pregnancy, face potential issues with breathing, feeding, vision, hearing, and developmental delays—especially if they are born earlier than 32 weeks. The most comprehensive study of the economic cost of preterm birth estimated that it costs $26.2 billion per year in the U.S.

- **Depression.** Depression leads to an estimated 390 million disability days per year in the U.S.—making it one of the biggest causes of disability nationally. Major depression affects over 16 million Americans and costs an estimated $210 billion per year in healthcare and lost productivity.
• **Attention-Deficit/Hyper Activity Disorder (ADHD).** ADHD is one of the most common mental disorders in children—affecting up to 9% of 4 to 17-year-olds.[xxxiv] Impacts can continue into adulthood with potential consequences related to education, relationships, and job performance. The cost of ADHD is estimated to be $143-$266 billion dollars annually.[xxxv]

Table 2 summarizes some of the estimated costs of the major health conditions impacted by exposure to nature.

<table>
<thead>
<tr>
<th>Negative Health Outcome</th>
<th>Percent of U.S. Population Affected</th>
<th>Total for Medical Costs and Lost Productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular Disease</td>
<td>39.1%</td>
<td>$330 billion</td>
</tr>
<tr>
<td>Diabetes</td>
<td>12.9%</td>
<td>$327 billion</td>
</tr>
<tr>
<td>Asthma</td>
<td>8.3%</td>
<td>$80 billion</td>
</tr>
<tr>
<td>Obesity</td>
<td>39.8% adults 18.5% children</td>
<td>$153 billion</td>
</tr>
<tr>
<td>Preterm Birth</td>
<td>1 in 10 babies</td>
<td>$26.2 billion (2005)</td>
</tr>
<tr>
<td>Depression</td>
<td>6.7%</td>
<td>$210 billion</td>
</tr>
<tr>
<td>ADHD</td>
<td>4.4% adults 5.5% to 9.3% children</td>
<td>$143 to $266 billion</td>
</tr>
</tbody>
</table>

Conservation funding is critical to the benefits of green space. Publicly-funded parks are one of the best ways to expand access to close-to-home nature, and the kinds of dramatic landscapes that improve mental health through inspiring awe are most likely to be found on protected public lands.

**CASE STUDIES**

**Park Prescriptions to Foster Physical Activity:**
**Fresno, California**

Fresno, California is a diverse city in the Central Valley that’s a hub for the state’s agriculture industry. Here, finding a safe, welcoming place to get outside can be a challenge: nearly half of Fresno residents live farther than a 10-minute walk from a park. According to Artie Padilla, director of Every Neighborhood Partnership, “Fresno has the second-most concentrated poverty of any big city in America, and from that stems a lot of other issues: from higher crime rates to higher instances of diabetes and heart disease. But we’ve seen that one way to start breaking that cycle is by making it easier, safer, and more fun for kids to play outside.” Padilla has worked together with other community leaders to create weekend programs in local parks and schoolyards. One such program is Fresno ParkRx. On Saturday mornings at Vang Pao Elementary School, on the city’s southeast side, Reyna Benitez heads the Fresno ParkRx walking group. She says that about 150 people have joined, from school-aged kids to seniors. “Many are struggling with health issues related to lack of exercise, but by joining the walking group, they’re starting to take charge of their health in ways that haven’t been available to them before.” And their renewed motivation is contagious. “Word of our walking group is spreading through the neighborhood. Grandparents are bringing their grandkids and kids are convincing their parents. It’s a growing group, but it’s surprisingly close-knit. Our walkers are proud to be out there helping each other get healthy,” Benitez says. (Adapted from “In Fresno, advocates unlock a new source of park space” on the blog of The Trust for Public Land, May 2017) [cxcvi]
Exploring the Connections between Nature, Awe, and PTSD; American River, California

The awe we feel in nature can dramatically reduce symptoms of post-traumatic stress disorder, according to UC Berkeley research that tracked psychological and physiological changes in war veterans and at-risk inner-city youth during white-water rafting trips. Psychologists tested nature’s healing powers on 72 military veterans and, separately, on 52 teens from underserved Bay Area communities during and after dozens of one- and two-day rafting excursions along the South Fork of the American River in California. They also studied a dozen veterans during and after a four-day white-water rafting trip along Utah’s Green River. Their findings, reported in two articles published in the journal *Emotion* suggest that awe—as opposed to joy, pride, amusement, contentment and other positive emotions—is the singular sensation that goes the furthest in boosting one’s overall sense of well-being. “It’s the active ingredient that explains why being in nature is good for us,” said study lead author Craig Anderson, a postdoctoral researcher and fellow at UC Berkeley and at UCSF. “The more awe people felt during the white-water rafting trips, the happier and less stressed they were a week later.” (Adapted from “Nature is proving to be awesome medicine for PTSD” in Berkeley News, July 2018)

Using Trails and Adventure to Get Kids Active in Parks; Blue Ridge Parkway Foundation

The Blue Ridge Parkway Foundation’s Kids in Parks program provides a national network of trails, called TRACK Trails, designed to get kids and families engaged in outdoor recreation to improve their health through the increased use of parks and public lands. There are currently more than 130 TRACK Trail locations in seven states (NC, VA, SC, WV, MD, SD, CA), and Washington, D.C. Kids in Parks has been endorsed by the American Academy of Pediatrics and recognized as a practice-tested intervention by the Center for Training and Research Translation (funded by the CDC). To date, more than 2,500 kids have registered 5,500+ TRACK Trail adventures on the website. Through on-site observational studies and data extrapolations, the program estimates that more than 180,000 kids have hiked 160,000 miles on TRACK Trails, spending nearly 80,000 hours outdoors and burning approximately 25,000,000 calories. Now, Kids in Parks is working with doctors, hospital systems, and other health-care providers to promote and prescribe TRACK Trails and outdoor recreation to young patients to combat the negative effects of a sedentary lifestyle. (Adapted from “TRACK Trails” ParkRx Case Studies)

Park for Community Celebrations; Wenatchee, WA

The Wenatchee Valley is renowned for its fruit orchards. Orchard workers in Washington State harvest 24 million 20-pound boxes of cherries in just a few short weeks over the summer, accounting for roughly 60% of U.S. cherry production. Teresa Bendito, a lifelong Wenatchee resident, decided that all that hard work calls for a celebration, so she and her mom, organized a cherry festival to mark the end of the harvest at Kiwanis Methow Park. The park—one of the only public green spaces in dense, mostly Latino South Wenatchee—has only a patchy soccer field, a basketball hoop, and some dated playground equipment. But Teresa is working Parque Padrinos (“padrinos” means “godparents” in Spanish) and The Trust for Public Land to transform the space into a green, welcoming gathering place for the whole community. By the end of next year’s cherry season, South Wenatchee residents will be able to celebrate the cherry festival in the new, improved park. The redesigned park will provide space for big parties, from baptisms to barbecues to quinceañeras. Plans call for a turf field, an upgraded playground, more seating, and more shade. The park’s centerpiece will be a kiosko—a pavilion designed for performances and celebrations. “Lots of communities in Mexico have a kiosko in their central plaza,” says Bendito. “It’s where everyone gathers, kind of the heart of town. For immigrant families in Wenatchee, we hope this park will remind them of home.” (Adapted from “Farming community celebrates harvest, with cherry on top” on The Trust for Public Land blog, September 2018)
CONCLUSION

The cumulative evidence for the benefits of conserving natural lands and waters assembled here is powerful, and it paints a compelling picture: conservation is not just an optional amenity, it is a central pillar of local economies and public health.

As demonstrated, conservation provides strong ROI through direct natural goods and services (such as clean drinking water and flood control); it also helps to support growing and diversified economies and improve public health. Americans recognize these benefits and have voted overwhelmingly to support conservation funding in both conservative and liberal communities across the country.

Federal funding for conservation plays a crucial role that cannot be filled by local, state, or private sources. The LWCF is the cornerstone of public funding, and supports everything from national parks to neighborhood parks. The LWCF provides a critical source of matching funds for state and local governments, and 98% of American counties have an LWCF-funded park.

To revisit just a few statistics highlighted in this report:

- Spending on conservation has strong ROI in the form of natural services, from 4 to 11 nationally ($4 returned in natural services such as clean water and flood control for every $1 invested) to as high as 11 to 1 in individual states.

- Conservation supports farmers and ranchers. Millions of acres of family farms, ranches, and forests have stayed in production due to innovative conservation tools such as conservation easements.

- Parks and conserved land drive job creation and consumer spending. Local public park and recreation agencies generate $154 billion in economic activity annually, and national parks and heritage areas generate $31 billion in visitor spending and support 454,000 jobs.

- Conservation drives migration of businesses and workers to areas with more protected land and more natural amenities. Eighty-five percent of Americans say that high-quality parks and recreation opportunities are important in choosing where to live, and western rural counties with the highest percentage of protected federal land have higher employment and income growth than counties with the lowest percentage.

- Protecting natural services—especially those provided by forests and wetlands—saves money. Treating drinking water from unprotected watersheds can cost 10 times as much, and U.S. coastal wetlands provide $23.2 billion in storm protection services each year. American forests provide the equivalent of $6.8 billion of air pollution removal annually.

- Increasing access to green space can reduce health care costs. A large-scale study shows that people with the most close-to-home green space have lower rates of 15 diseases, including heart disease (15% lower), diabetes (20% lower), and depression (25% lower). Cardiovascular disease currently costs the U.S. economy $330 billion per year, while diabetes and depression coast $327 billion and $210 billion respectively.
Behind each of these statistics are stories. A story of a family that takes deep pride in having stewarded their ranch for four generations. A story of a grandfather who feels joy and connection in taking his grandchildren fishing each summer. A story of a small business owner who finds meaning in creating jobs and helping to revitalize her rural community by renting bikes and outdoor gear. A story of child who feels awe and inspiration each summer during their time at a nature-based camp. And at the heart of each story, is the shared natural heritage of healthy lands and waters.

Americans across the country have a deep stake in conservation and ensuring that all these benefits—those that can be quantified and those that cannot—are protected for future generations. Ensuring ongoing funding for conservation is critical to the economic, health, and social benefits conservation brings to Americans today and in the future. Each dollar invested in conservation returns many more in economic growth, natural services, and improved health. Increasing public funding in conservation will increase all these benefits in turn—helping ensure that communities all across American thrive.

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The entire bibliography is available at OurNaturalInterest.org
ABOUT THE AUTHORS

Dr. Amy Wilson Morris

Amy’s work focuses on building community resilience through increasing equitable access to nature. Amy is currently the principal of Amy Wilson Morris Consulting, LLC. Previously, as Associate Director of Planning at The Trust for Public Land (TPL), she led community-based park, trail, and open space planning projects in Washington, Idaho, Texas, and New Mexico, including an effort to expand access to parks and trails in Harris County, Texas in the wake of 2017’s Hurricane Harvey. In addition to her planning work at TPL, Amy led research on forest carbon offsets, preservation of working lands, and the connections between health equity and access to open space. Earlier, Amy was a Senior Associate at Aspen Environmental Group where she analyzed land conservation policy and the impacts of renewable energy and transportation infrastructure projects.

Amy has published peer-reviewed and law review articles on conservation easements, renewable energy policy, and endangered species mitigation. She has presented at state and national conferences about topics ranging from engaging racially, ethnically, and socioeconomically diverse residents in planning, to spatial data for conservation, and tradeoffs in renewable energy siting. Amy is a research affiliate at the University of California Santa Cruz. She has a Ph.D. in Environmental Studies from the University of California Santa Cruz, and a B.A. in Environmental Biology from Columbia University, magna cum laude.

Dr. Sarah L. Thomas

For the past seventeen years, Sarah has focused on advancing healthy communities and environments in the United States and globally. The principal of Sarah Thomas Consulting, LLC, she combines a strong technical background in environmental policy and management with practical experience in the philanthropic, non-profit, and academic sectors. Her projects have addressed a variety of issues at the intersection of environmental policy and social justice, including community-based natural resources management, land use policy, climate and clean energy policy, and land and water conservation.

Sarah’s research has been published in peer-reviewed journals and she has presented at state and national conferences on rural land use change, land use planning, and outdoor recreation. She has taught undergraduate courses on environmental policy and social change at the University of California, Berkeley and the University of Colorado, Boulder. She currently is a Research Affiliate at the University of Colorado, Boulder and a Board Member of Wildlands Restoration Volunteers. Sarah holds a Ph.D. in Environmental Science, Policy, and Management from the University of California, Berkeley and a B.A., magna cum laude, from Harvard University.

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