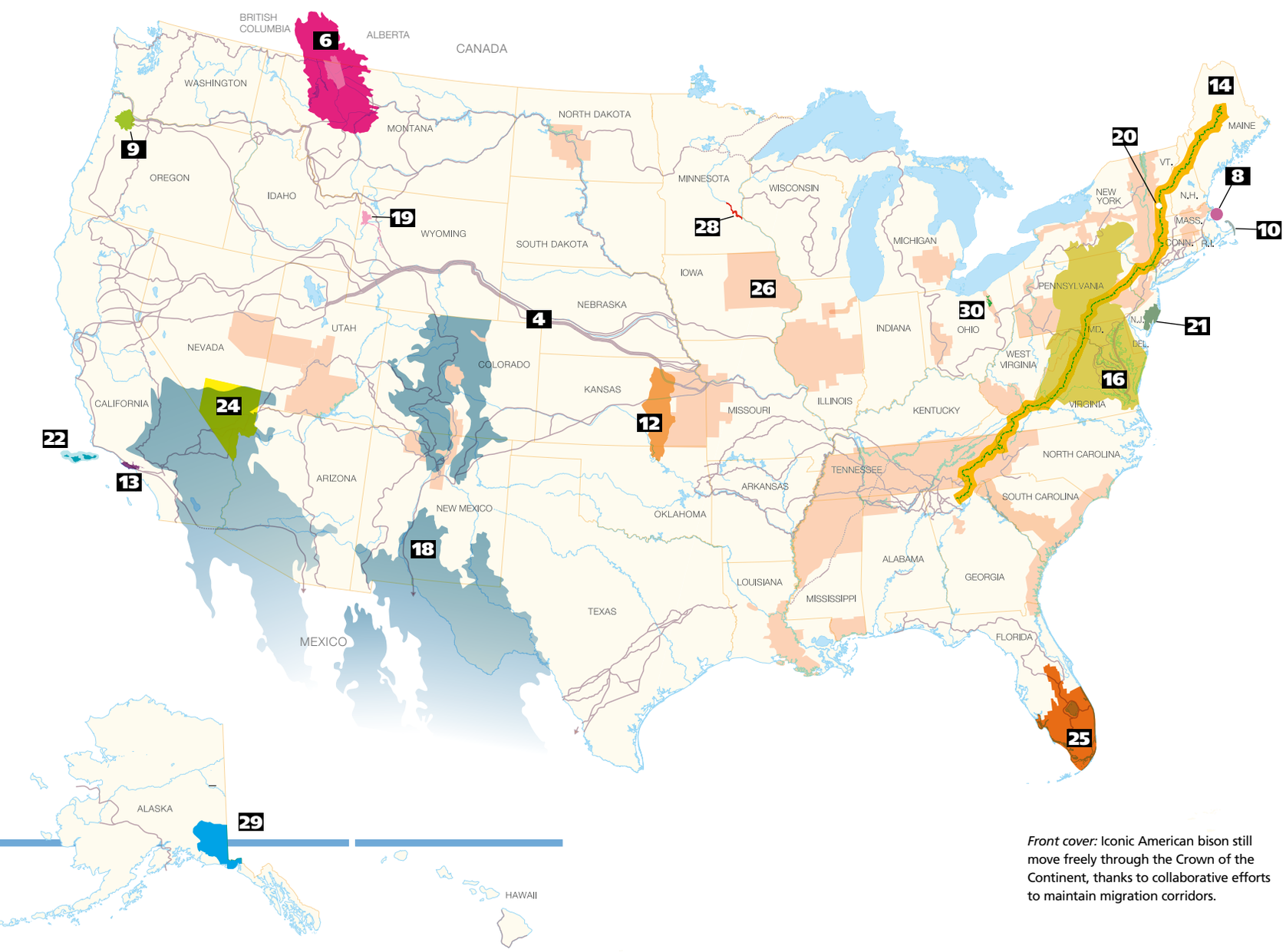
National Park Service
U.S. Department of the Interior

Scaling Up

Collaborative Approaches to Large Landscape Conservation

Locations of the examples described in this book, keyed by page number, suggest their geographic spread. National trails and national heritage areas are shown on the map and generally described on pages 4–5 and 26–27 respectively. This is a representative sampling of the growing number of places where the National Park Service engages in large landscape conservation.



Front cover: Iconic American bison still move freely through the Crown of the Continent, thanks to collaborative efforts to maintain migration corridors.

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The seeds of large landscape conservation were planted more than a century ago when President Theodore Roosevelt convened the White House Conference on Conservation in 1908. During that historic meeting he called for creation of a federal bureau to manage the nation's parks; the National Park Service was established eight years later. During its first century, as the numbers and diversity of parks grew, so too did the complexities of managing park lands.

While science and scholarship documented interrelationships and connectivity of park resources in ever-larger contexts, new kinds of parks were created with a landscape approach: corridors linking resources in national trails and heritage areas, places of nearby recreation for urban populations, and varied types of partnership parks. Increasingly, park managers recognized linkages, and initiated and nurtured partnerships across regions, along rivers and trails, between cities and countryside—"scaling up" to address the challenges inherent in fulfilling the National Park Service mission to preserve "unimpaired the natural and cultural resources and values of the national park system. . . ." Other federal land management agencies, numerous state and other governmental agencies, nongovernmental organizations, and communities joined the conversation and embraced the importance of working at a landscape scale.

The seeds that were planted in the early 20th century have taken root and multiplied across the nation, nourished by stories of successes and new opportunities. The need also grows, making scaling up to preserve America's special places part of the *Call to Action* as NPS approaches its centennial in 2016. "Scaling Up" is Action #22, and overlays other actions in science, scholarship, stewardship, education, and partnerships.

As this collection of brief stories shows, the National Park Service already engages in a wide variety of parks, programs, and initiatives

that advance collaborative conservation on a landscape scale. These 20 examples are only a small sampling of work in this field. Some show that NPS has a long history of large landscape efforts, such as the Appalachian Trail and Waterton-Glacier International Peace Park, both with early 20th-century origins. Some show that "large scale" is relative, ranging from Wrangell-St. Elias to Marsh-Billings-Rockefeller. They show diversity in landscape characteristics, from the marine ecosystems of Channel Islands to the arid southwest deserts. They represent sparsely populated areas like Tallgrass Prairie and work near urban areas at Santa Monica Mountains, Boston Harbor Islands, Cape Cod, and the Chesapeake Bay Watershed. They show cultural, scenic, and recreational landscapes of national trails and heritage areas, plus collaborative efforts to protect wildlife migration corridors.

Together they represent something much bigger happening throughout the country and the world, as land and program managers, communities, and a wide range of partners become aware of the potential values—ecological, cultural, historic, recreational, and economic—of conservation on a large landscape scale. These examples show the key role of the National Park Service as a convener, catalyst, collaborator, and cultivator to protect and sustain park and community values.

. . . 21st-century conservation challenges require an expansion in the spatial, temporal, and social scales of resource stewardship. A comprehensive national conservation land- and seascape includes working lands and waters, . . . recreation areas, historical sites, wilderness areas, wild and scenic rivers, and marine protected areas. Connecting isolated and individual conservation sites into a network adds to their individual and collective resilience over time.

— *Revisiting Leopold: Resource Stewardship in the National Parks,*
NPS Advisory Board Science Committee 2012

Science and experience show that the resources national parks are set aside to preserve are affected by conditions beyond their boundaries. Yellowstone National Park, for example, encompasses 2 million acres, but less than 10 percent of the greater ecosystem required to support viable populations of its wildlife. From this, the oldest national park, to the newest conservation initiative—Colorado Plateau Dark Skies Cooperative formed to protect natural darkness and starry skies—the National Park Service is scaling up conservation across large landscapes. Here is a sampling of efforts taking place nationwide.

The national trails system offers a network of scenic, historic, and recreation trails that crisscross the country providing opportunities for enjoyment, public access, and citizen involvement in the nation's great outdoors and its varied historic resources. Some of the trails follow roadways, waterways, canal systems, bikeways, and footpaths, while others are primarily traced across the land by stories of the past. These corridors provide a large landscape perspective of some of the nation's finest scenery and trace powerful themes in our nation's history—epic crosscountry explorations, cultural traditions, and steps towards democracy and freedom.

Authorized by the National Trails System Act of 1968, national scenic and historic trails are established by Congress and administered by the National Park Service or by other federal land managing agencies.

To date, there are 11 **national scenic trails**. These are primarily non-motorized routes recognized for their outstanding scenery and outdoor recreation opportunities. The longest, Pacific Crest National Scenic Trail, runs along the Sierra Nevada and Cascade Mountains for 2,650 miles from Mexico to Canada. Other national scenic trails highlight the resources of distinctive geographic areas from New England to Arizona to Alaska. The North Country Trail, when completed, will be the longest continuous hiking trail in the United States, allowing visitors to experience a variety of northern landscapes in seven states from New York to North Dakota.

National historic trails commemorate historic and prehistoric routes of travel that are significant to the entire nation. The 19 historic trails delineate routes, for example, of the Oregon Trail and the Santa Fe Trail. The iconic Lewis and Clark National Historic Trail traces the path of the Corps of Discovery and interprets the expedition's first encounters with American Indian nations along its 3,700-mile route.

Representing 11 national scenic and 19 national historic trails connecting stories and providing recreational experiences across the country: *Opposite page counterclockwise*: footpath on the Pacific Crest National Scenic Trail; 1965 march for civil rights commemorated in Selma to Montgomery NHT. *This page, counterclockwise*: shoreline trail of Ala Kahakai NHT in Hawaii; ruins along the Old Spanish Trail from Santa Fe to Los Angeles; Lewis Lookout, Montana, a point on the Lewis and Clark NHT.

Other historic trails tell stories that are not as well known. The Ala Kahakai National Historic Trail is a 175-mile trail network that preserves and interprets traditional Native Hawaiian culture and natural resources. As with many trails, it connects existing national parks, in this case four units on the big island of Hawaii. The Selma to Montgomery National Historic Trail commemorates the 54-mile march of black and white supporters, led by Dr. Martin Luther King, Jr., who walked to support civil rights for all Americans.

Either the Secretary of Agriculture or the Secretary of the Interior can designate important existing regional and local trails as **national recreation trails**. Today there are 1,250 such trails nationwide.

Whatever the classification, the national trails system brings people together across political and disciplinary boundaries and connects communities around common goals. Most national trails in America are developed with public investment, but they are managed by cost-effective, collaborative partnerships between government agencies and citizen volunteers. Trail partners extend the value of the trail into the larger landscapes through educational programs and community initiatives. From coast to coast, the national trails system takes a people-based approach to community conservation.

Canada's Waterton Lakes National Park (est. 1895) borders Glacier National Park (est. 1910). Hikers on Bears Hump can see parts of both parks.

Crown landscapes vary from flat grasslands to soaring peaks, from rock and ice to lush forests, and from uninhabited wilderness to densely-populated areas.

Collaborative research at Glacier involves the Confederated Salish and Kootenai Tribes and others.

The designation of Waterton-Glacier International Peace Park (the world's first) in 1932 acknowledged that the environment does not recognize jurisdictional boundaries; that there is a need for cooperation and stewardship in a world of shared resources; and that it is in the individual and collective interests of Canadians and Americans to work together cooperatively. Today, those ideas are the foundation of a large-scale regional effort to collaboratively manage the ecosystem identified as the Crown of the Continent.

The Crown of the Continent is one of North America's most ecologically diverse and jurisdictionally fragmented ecosystems. It includes an 18-million-acre Rocky Mountain region crossing northern Montana and the Canadian provinces of British Columbia and Alberta. Besides international jurisdictions, the region encompasses numerous aboriginal lands, municipal authorities, public lands, and private properties. Approximately 62 percent of the land is publicly owned.

Internationally recognized for its biodiversity, the Crown includes dramatically diverse landscapes, the headwaters of three major river systems, and valleys that serve as vital corridors for transboundary wildlife movement. Waterton-Glacier International Peace Park, the region's hub, is a World Heritage Site, and both the US and Canadian units are International Biosphere Reserves.

As a new century dawned, the park scaled up efforts to collaboratively manage this ecosystem. A state of the parks report in 2000 documented the threats to Glacier National Park from external sources, including climate change and new land use patterns. Comparative photographs, for example, showed the park's namesake glaciers receding at an alarming rate.

The idea of landscape level conservation started to take shape. Local communities and land managers began to rally around the concept of the "Crown of the Continent"—landscape-scale language that was introduced by George Bird Grinnell in the 1890s. Meanwhile, the National Park Service launched several new science initiatives as part of the Natural Resource Challenge Program, a servicewide effort to bolster science and resource management in national parks. Glacier became one of the first parks to benefit from the new network of cooperative ecosystem studies units (CESUs). Glacier also joined the servicewide inventory and monitoring program and the national network of research learning centers. The US Fish and Wildlife Service also created the Great Northern Landscape Conservation Cooperative, which encompasses an even larger landscape that includes the Crown.

Backed by these science initiatives and a strong commitment to scientific collaboration with others, Glacier National Park works closely with land managers from Waterton Lakes

National Park, the Ministries of Environment in Alberta and British Columbia, the US Forest Service, the state of Montana, tribes and First Nations, and others to achieve an ecologically healthy Crown of the Continent. They are part of the Crown Managers Partnership (CMP), which formed in 2001 as a voluntary group of representatives from science and resource management agencies, First Nations, tribes, and universities within the Crown of the Continent Ecosystem. The CMP seeks to improve understanding, raise awareness, promote collaboration, and enhance capacity in the Crown.

Collaboration among land managers and other conservation partners is key to successful transboundary ecosystem management at a regional scale. Glacier National Park has long been a leader and a catalyst for collaborative management to protect one of the nation's major, essentially intact, large landscapes—the Crown of the Continent.

Crown wildlife corridors allow movement of the full complement of carnivores and ungulates (including grizzly bears, wolves, and wolverines) and represent one of the last areas with the potential for such large-scale connectivity.

Boston Harbor Islands

Boston Harbor Islands was a new kind of partnership park when it was established in 1996—combining private and public funding and shared management. Officially designated a national recreation area, it is known as "a national park area" to respect American Indians who consider the islands sacred ground. Park partners work to broaden public appreciation for the full range of the park's intrinsic values, not just its recreation assets. Indeed, the 34 islands that make up the national park area offer an exceptional assemblage of natural, geologic, archeological, historic, and cultural features, as well as 35 miles of relatively undeveloped shoreline—all at the front door of New England's most populous city.

This national park area is managed by a variety of government, nonprofit, and for-profit entities through the 13-member Boston Harbor Islands Partnership, appointed by the Secretary of the Interior. The National Park Service coordinates the Partnership and an advisory council, develops overarching programs, and helps the park meet NPS standards.

Among the unusual features in the park's enabling legislation is the requirement of a three-to-one match of non-federal to federal funds. Congress designated a private, nonprofit organization, the Boston Harbor Island Alliance, as a partner with specific responsibility for raising and generating money from the private sector.

While various management partners focus on their specific areas in the park, the National Park Service has a more holistic view. This is especially evident in science and research initiatives for the island system as a whole. The park is working with the University of Massachusetts-Boston to establish the Boston Harbor Islands Center on the UMass campus, which will coordinate and be a clearinghouse for research projects, curriculum development, and stewardship programs. Similarly, NPS works with Harvard University to engage university staff, students, and community volunteers in a biodiversity inventory of island resources. Park staff participate in the Boston Harbor Habitat Coalition, which promotes conservation of marine and terrestrial habitats in the area.

The waters surrounding Boston Harbor Islands were once one of the most polluted harbors in the nation. Today, the harbor's natural systems have rebounded, and the islands are a destination for swimming, boating, fishing, and other recreation. NPS has played an important part in the transformation.

The island cluster across from busy Boston offers respite, recreation, and a place to study the changing harbor ecosystem. *Top right:* The nation's oldest continuously attended lighthouse is among the islands' cultural features.

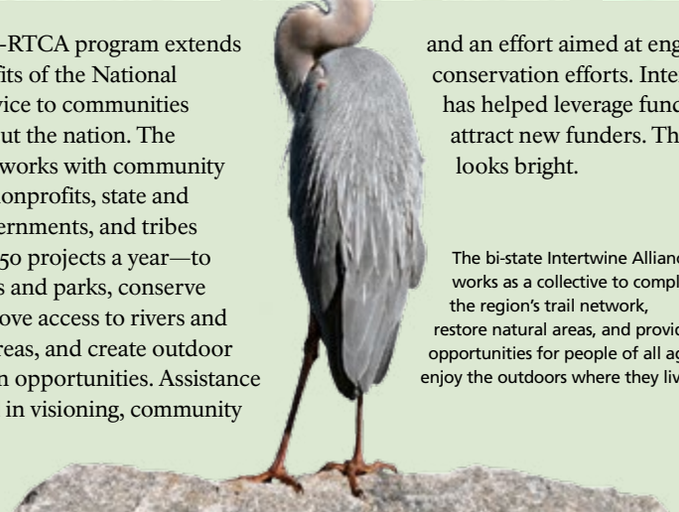
Rivers, Trails, and Conservation Assistance: Intertwine Alliance

When the National Park Service's Rivers, Trails, and Conservation Assistance (NPS-RTCA) program was asked to help facilitate the development of a bi-state regional trail plan in the Portland, Oregon/Vancouver, Washington, area, no one knew how broadly this effort would take root. The trail plan helped lead, in part, to the forming of the Intertwine Alliance, a regional umbrella nonprofit that encompasses nearly 30,000 square miles and brings together 80 different public and private partners around common goals. These include the completion of the region's trail network and restoring and protecting natural areas. The word "intertwine," meaning twisted or twined together, symbolizes how this collaboration connects large-scale conservation and recreation initiatives to ensure that people of all ages enjoy the outdoors where they live.

The NPS-RTCA program extends the benefits of the National Park Service to communities throughout the nation. The program works with community groups, nonprofits, state and local governments, and tribes on over 350 projects a year—to plan trails and parks, conserve and improve access to rivers and natural areas, and create outdoor recreation opportunities. Assistance is offered in visioning, community engagement and planning, and most importantly, the development of a sustainable organizational framework to support the effort in the long run.

The development of the Intertwine Alliance demonstrates the value of RTCA in contributing a national and transboundary perspective. NPS-RTCA served as a facilitator helping convene the region's multiple interests and political units of widely different scales. The project has had the added benefit of giving the National Park Service and the local Fort Vancouver National Historic Site more visibility and new conservation partners.

The Intertwine Alliance is now officially incorporated as its own nonprofit. Recent Intertwine Alliance efforts with RTCA support include the Regional Conservation Strategy, which encompassed nine counties in two states, and an effort aimed at engaging youth in urban conservation efforts. Intertwine's broad vision has helped leverage funding sources and attract new funders. The future of this effort looks bright.



The bi-state Intertwine Alliance works as a collective to complete the region's trail network, restore natural areas, and provide opportunities for people of all ages to enjoy the outdoors where they live.

Cape Cod National Seashore

Cape Cod National Seashore was a different kind of national park from the start. When Congress set aside 44,000 acres in 1961, it was the first time a national park was carved out of such a populated area. An experiment in cooperative stewardship, it was an attempt to conserve a treasured resource in partnership with six towns and some 600 private landowners within its boundaries. The authorizing legislation set a precedent by establishing the first citizens advisory commission and authorizing funding for considerable private land acquisition.

The national seashore occupies much of outer Cape Cod, a large peninsula extending 60 miles into the Atlantic from the coast of Massachusetts. The federal government owns about 27,000 acres in fee. A collaborative approach to stewardship is essential to protect the resources and values that define this place.

The Herring River Tidal Restoration Project is an example of putting a collaborative, landscape-scale management philosophy into practice. Historically, the Herring River estuary included 1,100 acres of salt marsh, intertidal flats, and open-water habitat—one of the largest and most productive saltmarsh estuaries on Cape Cod. In 1909, in an effort to control mosquitoes, the town of Wellfleet constructed a dike at the mouth of the river. Ditches to drain the marsh that were dug over several decades further compromised natural processes, enabled private development in the former flood plain, and led to deteriorating water quality and habitat loss. In 2003, Herring River was listed as "impaired" under the federal Clean Water Act.

Based on ecosystem science and adaptive management techniques, seashore partners are collaborating to restore the estuary. The Herring River Restoration Committee, a group appointed by Cape Cod National Seashore and the towns of Wellfleet and Truro comprised of several state and federal agencies, is developing a comprehensive plan to reintroduce unrestricted tidal flow and restore the estuary as a self-sustaining ecosystem. Restoration will reclaim hundreds of acres of wetlands and reintroduce habitats for aquatic species, marsh birds, and mammals, as well as new opportunities for recreation and shellfish harvest both within the estuary and in nearby coastal waters. The plan includes a gradual, incremental approach to tidal restoration, mitigation of potential impacts to existing infrastructure such as raising low-lying roads, and monitoring to track ecosystem response.

Educating the public on the ecological and economic values of a healthy estuary and engaging them in the process are essential. A restoration project of this scale depends on commitment and support from local communities and beyond.

MIGRATION MISSION

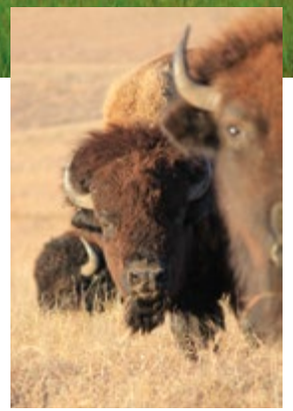
Cape Cod National Seashore is on the Atlantic Flyway, the primary migration route for millions of birds traveling between breeding grounds as far north as the Arctic and wintering grounds as far south as the Antarctic. More than 40 species rest and feed on the beaches, including federally endangered roseate terns. Scientists estimate that 75-80 percent of the Northwest Atlantic breeding population of roseate terns and their young spend critical staging time at Cape Cod to prepare for migrations of up to 4,500 miles to South America. Peak visitation at Cape Cod coincides with the arrival of staging and migrating shorebirds. Researchers are working to determine if human disturbances during this time in the terns' life cycle could explain a recent population decline.

The park's studies of roseate terns and other migrating shorebirds could have global implications.

Cape Cod is one of many protected and managed landscapes in Canada and the US that support migratory bird species at various points in their life cycles. Understanding the effects of disturbance on staging roseate terns will aid management actions at Cape Cod National Seashore, as well as advance other national and international efforts in conserving this species.

Opposite page: Cape Cod NS is part of efforts to restore the Herring River where a dike and other obstructions have degraded the estuarine system.

Tallgrass Prairie National Preserve



Situated among the Kansas Flint Hills, Tallgrass Prairie National Preserve was established in 1996 after more than 70 years of attempts to create a national prairie park. Responding to local concerns about federal ownership and loss of local tax base, Congress created a public-private ownership approach of cooperative management to protect, preserve, and interpret the vanishing tallgrass prairie.

As co-manager of the nearly 11,000-acre preserve, the National Park Service owns only 35 of the 180 acres allowed by law, including the historic 19th-century Spring Hill Ranch. Evidence of the power of the partnership, the primary landowner, The Nature Conservancy, acquired all underlying mineral rights, ensuring permanent protection of the historic and ecologically significant property. Together, science-based prairie management, such as prescribed burning, grazing, and ranch operations, and visitor experiences, such as night sky views and hiking the trails, occur seamlessly. As part of a nationwide approach to protect and sustain pure bison herds free of cattle genetics, this iconic megafauna of North American prairies was reintroduced to the preserve in 2009, after an absence of more than 150 years.

The Flint Hills Legacy Conservation Area, managed by the US Fish and Wildlife Service, was established in 2012 to preserve up to 1.1 million acres of private land in the Flint Hills using conservation easements. Aided by The Nature Conservancy and others, the effect is one of protecting the viewshed and important grassland habitat from incompatible development.

Adding to the diversity of this tallgrass prairie, bison, commonly called "buffalo," were reintroduced in 2009. Acquired from Wind Cave National Park, the herd is managed cooperatively by NPS and The Nature Conservancy. The NPS *Call to Action* for its next century includes returning iconic American bison to the country's landscape.

Santa Monica Mountains National Recreation Area

Established in 1978, the Santa Monica Mountains National Recreation Area was an early test of how to create a national park presence in a complex urban landscape, the Los Angeles metropolitan area. The park includes nearly 240 square miles, from the Los Angeles River and downtown LA through Hollywood and Malibu almost 40 miles to Ventura County. The park's 500 miles of trails and accessible beaches provide the benefits of protected open space and close-to-home recreation for millions of people.

The park contains impressive ecological diversity, with 26 distinct natural communities and 50 endangered species. It also includes more than 1,000 archeological and historical sites, from places associated with the Chumash and Tongva people and their ancestors, to ranchos and old movie sets.

To protect this significant resource in the midst of one the nation's densest population centers, the National Park Service adopted an innovative green line approach. NPS only owns and manages 23,185 acres, less than 15 percent of the land within that boundary. But, together with state and local partners, NPS has helped to place more than 50 percent of the park's 153,075 acres in conservation ownership. NPS has also assisted counties and municipalities to assure a balance between conservation and development. A recent example of this work is the 2014 Santa Monica Mountains Local Coastal Plan.

The nation's largest urban park preserves examples of rare Mediterranean-type coastal ecosystems found in only four other places in the world. The park offers an array of natural, cultural, and recreational experiences for more than 35 million visitors annually.

Santa Monica Mountains NRA has a robust science program. Its urban carnivore research program has provided the research foundation for conservation land purchases, wildlife corridors, and local and state regulations banning anti-coagulant rodenticides. Also, for more than a decade, the park has engaged city youth in innovative training and employment programs, introducing dozens of students each year to stewardship roles and career opportunities.

Appalachian National Scenic Trail

What began in 1921 as the vision of one man, Benton MacKaye, has become the largest collaborative conservation effort in the nation. Known as the A.T., the Appalachian National Scenic Trail stretches along the spine of the Appalachian Mountains through 14 states, six national parks, eight national forests, two national wildlife refuges, and more than 80 state or municipally owned areas. Its approximately 2,185-mile length makes the A.T. one of the longest units in the National Park System.

The Appalachian Trail is cooperatively managed by the National Park Service, US Forest Service, several other federal and state agencies, and the Appalachian Trail Conservancy (ATC). Established in 1925, the conservancy is a nongovernmental organization with more than 40,000 members. From the trail's inception, thousands of volunteers have constructed, maintained, supported, and protected the A.T. This work has been accomplished primarily through 31 trail clubs coordinated by ATC.

To ensure permanent public protection for the Appalachian Trail, the US Congress made it the cornerstone of the 1968 National Trails System Act, which designated the Appalachian Trail in the East and the Pacific Crest Trail in the West as the first two national scenic trails. Amendments in 1978 and 1983 increased funding and authority for land acquisition. For more than 30 years since, the Appalachian Trail Park Office has coordinated the National Park Service's most complex land protection effort, in collaboration with ATC, the Conservancy's Appalachian Trail Land Trust, and other trail partners. Protection of the entire trail route is nearly complete (99 percent protected), but the work continues in order to protect sensitive landscapes and scenic viewsheds.

Beyond recreation, the A.T.'s 250,000-acre protected corridor has become a vital outdoor laboratory for studying environmental effects on natural resources. The trail's north-south alignment represents a cross-section of the eastern United States and includes elevation ranges that encompass one of the richest assemblages of temperate zone species in the world. Scientists believe the trail's protected corridor could be an indicator for environmental conditions that directly affect more than a third of the US population.

In 2006, the NPS and partners launched the MEGA-transect initiative, a collaborative environmental monitoring and research effort to systematically collect data on species and environmental conditions along the entire trail.

The A.T.'s "MEGA" transect is on a very large landscape scale: from Maine (ME) to Georgia (GA). Building on the A.T.'s long tradition of volunteerism, trail maintainers, hikers, students, and other volunteers are part of a growing cadre of citizen scientists who are collecting and monitoring scientifically valid data for a series of specified indicator categories.

The A.T.'s impressive MEGA-transect initiative is an example of "scaling up" from protecting the Appalachian Trail corridor to understanding environmental impacts on the entire Appalachian region.

"The Appalachian Trail is conceived as the backbone of a super reservation and primeval recreation ground covering the length (and width) of the Appalachian Range itself, its ultimate purpose being to extend acquaintance with the scenery and serve as a guide to the understanding of nature."

— Benton MacKaye, founder of the Appalachian Trail

NPS and the Appalachian Trail Conservancy share responsibilities for maintaining the Appalachian Trail and safeguarding values that are part of the trail experience for some 2 million annual visitors.

Chesapeake Bay Watershed

The Chesapeake Bay is the largest estuary in North America, with shorelines extending more than 11,000 miles and a watershed encompassing 43 million acres in six states and the District of Columbia. Home to nearly 18 million people, the Chesapeake region has long been regarded as an ecological, cultural, and recreational treasure of national and international importance.

Unlike western states where vast areas are in the public domain, the Chesapeake watershed is dominated by privately owned lands. At the close of the 19th century very little land was permanently protected—just 1 percent. But thanks to concerted private, state, and federal efforts over the next century to conserve Chesapeake landscapes, today more than 8 million acres (21 percent of the watershed) are protected. And a broad collaborative effort is taking place to restore water quality, revive and sustain natural resources, protect cultural landscapes, and provide more locations for water access and outdoor recreation.

The National Park Service is woven throughout conservation in the Chesapeake region. There are 55 units of the park system in the watershed, along with all or parts of 7 national heritage areas and 5 national scenic or historic trails. NPS owns over 320,000 acres, making it one of the watershed's largest federal landholders. The NPS role goes far beyond park management; the agency is also a convener of collaborative large landscape conservation partners.

In 2009, President Barack Obama signed Executive Order 13508 calling for a strategy to protect and restore the Chesapeake watershed. This stimulated efforts towards multiple conservation goals. Working through its Chesapeake Bay Office, the National Park Service coordinated development of the strategies on land conservation and public access. A broad coalition of nongovernmental organizations, state, and federal partners helped set a collective goal of protecting an additional 2 million acres by 2025. The goal has since been adopted into a new watershed agreement signed by the federal government and the governors of six states.

The National Park Service and a key partner, the Chesapeake Conservancy, continue to convene the Chesapeake Conservation Partnership, bringing together organizations from throughout the watershed to foster collaborative action to conserve culturally and ecologically important large landscapes. Partnership teams work on joint initiatives to expand public access, document valuable resources, share expertise and strategies, leverage and expand funding, and more.

This National Park Service role builds on NPS units in the region and on the agency's deep experience in collaboration. Over a decade of focused work on Chesapeake Bay Gateways and two national historic trails (Star-Spangled Banner NHT and Captain John Smith Chesapeake NHT) has nurtured formal partnerships and relationships with over 200 sites and organizations from Cooperstown, New York, to Virginia Beach, Virginia. Partnerships along the 3,000-mile Captain John Smith Trail, in particular, exemplify scaling up—generating collaborative conservation along the routes of Smith's explorations to sustain indigenous cultural landscapes and lands evocative of the 17th century, enhance visitor experiences, and expand public access. This provides a foundation for the convening role NPS plays among large landscape conservation partners throughout the watershed.

Opposite page and top: A lived-in landscape along the Susquehanna River and a view of the Shenandoah Valley from the Appalachian Trail represent beauty to be found throughout the 64,000-square-mile watershed.

The Captain John Smith Trail was the first national historic trail to complete a trail conservation strategy. It charts a course to identify, protect, and interpret recreation corridors along the major rivers, trails, and byways of the Chesapeake region.

Southwest Desert Large Landscape Conservation Area

Vast and stunning landscapes, remarkable natural resources, scarce waterways, diverse ecosystems, and rich cultural history characterize the Southwest Desert Conservation Area.

Estimated at more than 200 million acres, the Southwest Desert Large Landscape Conservation Area is one of the nation's largest and newest collaborative conservation efforts. Begun in 2012, it grows out of the America's Great Outdoors Initiative—a program intended to bolster local conservation efforts and improve collaboration across federal agencies and with state and local partners. The National Park Service and Bureau of Land Management are the designated lead agencies for the Southwest Desert Large Landscape Conservation effort.

The Southwest Desert Landscape spans parts of seven southwestern states: Arizona, New Mexico, Nevada, California, Texas, Colorado, and Utah, as well as northern Mexico. The landscape includes three distinct deserts—Mojave, Chihuahuan, and Sonoran—as well as the adjacent transition lands that link these deserts to each other and to their nearest mountain ranges, the Southern Rocky Mountains and the Sierra Madre. Ecosystems specific to each desert, interspersed with montane habitats, xeric grasslands and shrublands, and the river systems of the Rio Grande, San Pedro, Pecos, and Gila provide for complex biodiversity. This vast area also includes a rich heritage of prehistoric and historic sites, historic trails, and cultural landscapes reflecting indigenous peoples, generations of ranching families, and others who have shaped the human history of this land.

More than half of the area is in private ownership. The rest is under jurisdiction of the National Park Service, Bureau of Land Management, US Fish and Wildlife Service, Department of Defense, or managed by international, state, tribal, or local governments and nongovernmental organizations. These various entities are all engaged in landscape conservation. For example, the Desert Landscape Conservation Cooperative (LCC) shares much of the geography of the Southwest Desert Large Landscape Conservation Area. LCC's are applied-science conservation initiatives of the Department of the Interior.

Southwest Desert is one of five America's Great Outdoors (AGO) demonstration areas where additional federal investment and collaboration may enhance locally identified and locally led conservation initiatives for greater effect. The AGO strategy builds on existing conservation successes and expands or links those successes on a grander scale.

Grand Teton National Park and Path of the Pronghorn

For some 7,000 years the indigenous pronghorn—often called antelope—have moved seasonally between today's Grand Teton National Park and the Green River Basin of Wyoming. Upper Green River Valley is the southern core of the world's most intact temperate ecosystem. The Greater Yellowstone Ecosystem's 20 million acres include migration routes for many wildlife species. The pronghorn exemplify modern perils that confront these migrating species and the challenges that resource managers face in conserving the wildlife that move in and out of protected areas.

Each fall pronghorn from Grand Teton National Park and Jackson Hole Valley leave their summer range to travel up to 200 miles to winter range south of Pinedale in western Wyoming. The longest known mammal migration in the continental United States, their route crosses private land and public land managed by the US Forest Service, National Park Service, US Fish and Wildlife Service, Bureau of Land Management, and the State of Wyoming. In 2008, this Path of the Pronghorn became the nation's first federally designated migration corridor.

The pronghorn meet numerous obstacles during their migrations. Some are natural, such as fast-moving rivers, but others are human-made. Fences, highways, "rural sprawl," and oil and gas development are changing what were once the West's wide open spaces.

The National Park Service is part of a consortium of federal and state land managers, nongovernmental organizations, and private landowners working to protect the migration route. They target bottlenecks where natural terrain, development, or other factors restrict animal movements. These become priority conservation areas, and partners use conservation easements, purchase of development rights, land exchange, and other tools to keep the pathway open.

In one particularly troublesome spot called "Trappers Point," two rivers create a natural bottleneck, which is further restricted by houses, fences, and a US highway. Increasing traffic on the highway resulted in frequent collisions with pronghorn trying to cross. To protect the migration route, the Wyoming Department of Transportation constructed two overpasses and six underpasses to enable the pronghorn, mule deer, and other wildlife to cross the highway safely.

Creative approaches along the Path of the Pronghorn—considered a model for the conservation of migratory species—may help parks around the world devise ways for people and wildlife to coexist when their landscapes change.

Conservation partners work to find ways to remove obstacles along the pronghorn migration route.

Marsh-Billings-Rockefeller National Historical Park

Formed in 1992, Marsh-Billings-Rockefeller National Historical Park in Woodstock, Vermont, is a place to reflect on the history and meaning of stewardship and the emergence of a conservation ethic. The park maintains one of the nation's oldest continuously managed woodlands as a demonstration of sustainable forestry, cultural landscape, preservation, and value-added conservation. The park partners with Billings Farm & Museum to interpret the conservation legacy and stewardship of George Perkins Marsh, Frederick Billings, and Mary and Laurance S. Rockefeller.

Although a relatively small park, Marsh-Billings-Rockefeller has "scaled up" to advance large landscape conservation in the Prosper Valley where it is located. The valley includes four towns that border the park. To initiate this effort, the park collaborated with the University of Vermont Field Naturalist Program to produce Prosper PLACE, a multi-community, place-based program that paired landscape analysis with community education. Prosper PLACE enhanced connections between Prosper Valley residents and the park, adding a more cohesive approach to local land conservation.

Beyond its local conservation efforts, the park is the headquarters for the Stewardship Institute (formerly Conservation Study Institute). The Institute is a small team that works with a large network of nonprofits, public agencies, and academia actively engaged in keeping the National Park Service at the leading edge of park management and stewardship. Its main focus is on collaborative engagement, leadership for change, and research and evaluation.

Upper: Graduate students worked with teachers and community members in the field to share techniques in inventorying natural and cultural resources and exploring community values. *Lower:* The park and Stewardship Institute also engage citizens in the rural Prosper Valley where the park is located.

Pinelands National Reserve

In 1978, the US Congress created this country's first national reserve in order to protect the largest remaining tract of open space on the mid-Atlantic coast. Pinelands National Reserve consists of 1.1 million acres in southern New Jersey—22 percent of the state's land area. The reserve features vast unbroken forests of pine, oak, and cedar, which provide habitat for 850 plant species and nearly 500 animal species, including dozens that are rare, threatened, or endangered. Aquifers containing 17 trillion gallons of some of the country's purest water flow under the area. The region is recognized as both a US and an International Biosphere Reserve.

New Jersey is among the nation's top producers of cranberries and blueberries, nearly all of which come from the Pinelands Preservation Area as a traditional resource-based use.

Pinelands National Reserve is a successful model for large-scale landscape management. It is administered by the New Jersey Pinelands Commission and units of local, state, and federal governments. The National Park Service is the designated federal representative on the 15-member commission. NPS also provides a range of assistance, including financial help through the Land and Water Conservation Fund; a long-term resource and economic monitoring program; and planning and technical assistance for interpretation, education, and outdoor recreation.

The Pinelands Commission oversees a comprehensive management plan which guides protection and future development of the region. The plan established nine land-use management areas based on assessment of environmental resources and existing land use. More than 60 percent is highly regulated as Preservation Area because it comprises the most critical ecological region. The other eight areas are zoned for various specified uses, such as agricultural production or regional growth.

The Pinelands pioneered many of the smart-growth planning concepts that are now widely used, such as watershed management, transfer of development rights, timed growth, and conservation planning. Incentives to encourage landowners and counties to support preservation objectives are among the several tools used to preserve valued landscapes and resources.

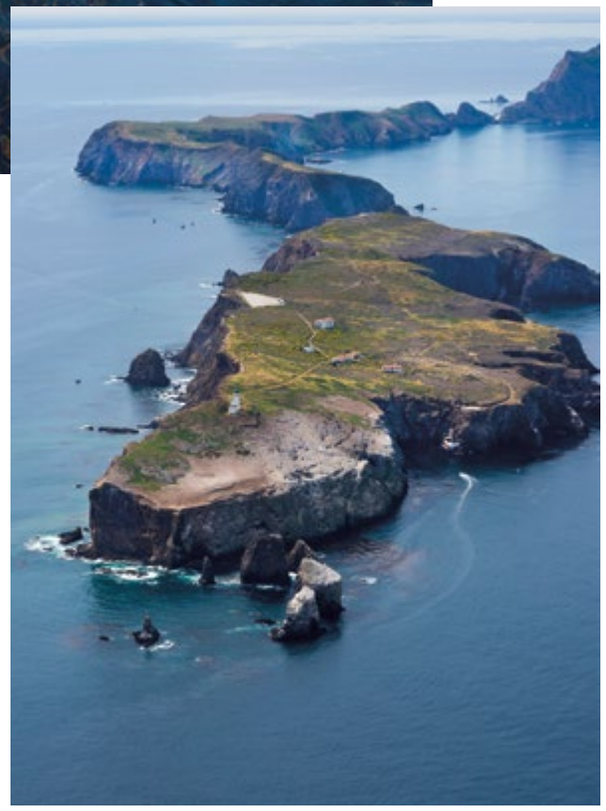
Through a combination of public and private efforts, 53 percent of the region is now permanently protected by public ownership or easements. Pinelands National Reserve has been cited as the nation's most successful regional land-use planning effort, with more than 35 years of managing land use to conserve the region's wealth of ecological resources.

Two Channel Islands off the southern California coast were designated a national monument by proclamation in 1938. The national monument was expanded to five islands and designated a national park in 1980. The park bridges two biogeographical provinces and in a remarkably small place harbors the biologic diversity of nearly 2,500 miles of the North American coast. The Channel Islands are home to over 2,000 plant and animal species, of which 145 are found nowhere else in the world.

Initially the park's isolation was considered to be one of its most significant features. In recent years, however, a transformation has taken place to recognize the significance of the park as a key link in a complex web of migratory habitats and a network of protected areas extending around the globe. Connections, rather than isolation, are important for many species of interest.

The boundary of Channel Islands National Park extends one nautical mile offshore from the five islands. The Channel Islands Marine Sanctuary, administered by NOAA, extends for six nautical miles around those islands. The State of California has established 11 no-take reserves within the waters of the park, as well as designated additional areas of special biological significance, marine conservation areas, and special closures. The park's boundary also coincides with a Biosphere Reserve.

All of these designations reflect cooperation with multiple partners who recognize the fragile character of the marine environment and its interrelationships with the land. At least 32 different federal, state, local, and nongovernmental agencies or organizations are involved in protecting and managing the park and surrounding areas. Sister park partnerships were recently developed between Channel Islands National Park and Isla Guadalupe Biosphere Reserve and Bahia de Loreto National Park off Baja California in Mexico.



The park encompasses five of the eight California Channel Islands. Accessible only by boat or small plane, it is one of the least visited US national parks. In designating the park, Congress recognized the value of solitude and low visitation to protect fragile resources. *Top*: The park's kelp forests are among the conservation success stories.

The near-shore waters surrounding the park host one of the most productive marine ecosystems on Earth: giant kelp forests. By the late 20th century the kelp forest ecosystem had become heavily impacted due to overfishing, threatening a complex system with over 1,000 plant and animal species of concern. The coalition of partners succeeded in reversing this decline by creating no-take zones using state authorities and NPS enforcement capabilities. Engagement of local communities was a key factor in the success of these efforts. The park's ongoing kelp forest monitoring program has been instrumental in demonstrating the effects of harvest and evaluation of the marine reserves. Just over 20 percent of the park waters have been placed in marine protected areas.

Northern elephant seals, numerous seabirds, and whales migrate to and through the park each year finding critical shelter for rest and reproduction. Park and sanctuary waters are home to the largest aggregation of blue whales in the world. Recognizing its importance as habitat for whales, pinnipeds, seabirds, and fish, Channel Islands cooperates on a global scale to protect the health of these and other populations—including as far away as New Zealand to protect nesting sites for Sooty Shearwaters.

NPS work on and around Channel Islands and underwater benefits from a long-term monitoring program authorized when the park was established in 1980. This work has even broader impacts as a model for other marine protected areas around the world.

Lake Mead National Recreation Area and Southern Nevada Agency Partnership

Lake Mead NRA is the National Park Service lead in the Southern Nevada Agency Partnership. SNAP agencies together manage 10 million acres of public lands encompassing nine distinct ecosystem types.

Lake Mead National Recreation Area's boundary of 1.5 million acres encompasses a vast area of diverse ecosystems and cultural resources. However, these are only a small portion of the 10 million acres of federally managed lands in the southern portion of Nevada, including two national recreation areas, two national conservation areas, four national wildlife refuges, 18 congressionally designated wilderness areas, five wilderness study areas, and 22 areas of critical concern.

In 1999, the National Park Service superintendent at Lake Mead and land managers representing the US Fish and Wildlife Service, Bureau of Land Management, and USDA Forest Service established the Southern Nevada Agency Partnership (SNAP). SNAP agencies work with each other, local communities, and other partners to address common issues that cross agency jurisdictions. These include a variety of stresses on the ecosystem, from climate change and human development—roads, utility corridors, invasive non-native plants, and groundwater pumping and water diversions—to invasive organisms that are degrading many of the region's spring, stream, and riparian ecosystems.

The cumulative effects of these stresses place the region's cultural and biological resources at risk and cause loss of habitat for native plant and animal species. By directing resources and expertise toward common goals, SNAP increases the capacity of member agencies and the effectiveness of management actions and visitor services. The partners collaborate on a wide range of projects, such as the cultural site stewardship program, which shares 450 volunteers, and the award-winning "Don't Trash Nevada" anti-litter campaign.

SNAP began informally, but the partners have formalized the organization through a charter, a board of directors representing the four agencies, and an executive director position funded through agency contributions. Ten interagency teams (education, restoration, GIS, and others) implement the board's strategic direction.

SNAP's science and research team is a prime example of how the partnership works. SNAP managers established the team to develop an interagency science program that is consistent across agency boundaries. The team identifies priority science and research needs, shares resources and funds to address those needs, and eliminates redundancies in agency research programs. Through periodic assessment and synthesis, the team promotes scientifically informed and integrated approaches to effective, efficient adaptive management across jurisdictions.

Similarly, SNAP charges other teams to carry out projects and initiatives that benefit the partners, the public, and the lands.

Everglades National Park

Everglades National Park was established in 1947 to protect a 1.5 million-acre subtropical wetland system that was historically pristine and supported populations of wading birds "in such numbers to block out the light from the sun." Largely because of manmade changes in hydrologic conditions, the Everglades now supports about 90 percent fewer nesting birds than it did in the 1930s.

The Everglades watershed begins in the Kissimmee River headwaters near Orlando, Florida, and extends to the coral reefs along the Florida Keys. Slow-flowing water once covered an area of 11,000 square miles, creating a vast mosaic of freshwater sloughs, sawgrass marshes, pinelands, and hardwood hammocks that transitioned into dense mangrove forests, and the largest seagrass meadows in the world.

Considering it worthless swamp, land developers began draining the Everglades in the mid-1800s, and by 1910 large tracts of Everglades wetlands south of Lake Okeechobee were transformed into agricultural lands. In the early 1960s a series of water storage impoundments were constructed upstream of the park to retain water for expanding development. For four years while these areas filled up, no fresh water flowed to park lands.

Almost from the beginning of Everglades National Park, conservationists understood that protection of the park's resources depended largely on land and water management actions beyond park boundaries, but the damage caused by shutting off the delivery of fresh water to the park caught national attention. While several congressional actions in the 1970s and 1980s addressed delivery of water to the Everglades, it became clear that reversing the ecological deterioration of the Everglades ecosystem would need to be addressed through coordinated land and water management actions at the watershed scale. The Everglades National Park Protection and Expansion Act in 1989 enlarged the park protection boundary. In 2000, Congress authorized a long-term strategy—the Comprehensive Everglades Restoration Plan (CERP).

CERP consists of 68 major hydrologic restoration projects to be implemented with joint federal/state funding over a 40-year time period, at a projected current cost of over $11 billion. The South Florida Ecosystem Restoration Task Force guides the restoration work. This intergovernmental task force, managed by the Department of the Interior, includes all of the federal, state, tribal, and local agencies that have responsibilities for implementing CERP, as well as the wider range of actions needed to preserve and restore the Everglades. The task force coordinates the numerous conservation and restoration efforts and provides a forum for the agencies to share information, resolve conflicts, and report on progress.

Wading birds are only a small fraction of their historic numbers in the Everglades, but a massive restoration effort is underway to manage freshwater delivery and restore South Florida's natural ecosystem.

National heritage areas are lived-in landscapes that connect residents and visitors to diverse nationally important stories. These heritage areas or corridors are created as a way to conserve cultural and natural resources on a large scale without regard to political boundaries and to harness the energy of regional coalitions, local citizens, organizations, and government entities to care for the heritage resources. While the National Park Service provides planning, technical assistance, and limited financial support, the areas are managed by the people who live there. To date there are 49 congressionally designated, national heritage areas throughout the United States.

Representing the diversity of national heritage areas throughout the US: *This page top to bottom*: Adai Caddo Indian Pow Wow at Natchitoches, Cane River NHA; South Carolina sweetgrass basketmaking in Gullah Geechee Cultural Heritage Corridor; Route 15 bridge on Potomac River joining Virginia and Maryland along the Journey Through Hallowed Ground NHA; *Opposite page, top*: Appleton Farms, one of America's oldest working farms, part of Essex NHA in Massachusetts; *Bottom*: mixed generations still farming in Silos and Smokestacks NHA

Importantly, national heritage areas offer the National Park Service a strategy to expand the education and stewardship mission beyond the boundaries of park units. The 550-square-mile Essex National Heritage Area, for example, is a cultural landscape that commemorates 400 years of maritime history and tradition. Its work has enabled Salem Maritime National Historic Site, only nine acres in size, to tackle regional interpretation and education projects. Most heritage areas have national park units within their boundaries and have developed such mutually beneficial partnerships.

The heritage areas are also a cost-effective approach. The Delaware and Lehigh National Heritage Corridor conserves a 165-mile transportation system that includes canals and railroads and helps revitalize many of the adjacent communities.

Through the efforts of community partnerships in national heritage areas, landmarks in our nation's engineering and labor history have been reclaimed and re-purposed by leveraging resources and the support of local communities.

While some national heritage areas play an important role in telling the story of transportation history or the rise of industry, others interpret the nation's vast agricultural and rural landscapes. The 37-county Silos and Smokestacks National Heritage Area, located in the heart of America's tallgrass prairie in northeastern Iowa, includes some of the world's most fertile soil. This heritage area focuses on telling the story of both historical and modern agriculture through a network of more than a hundred partners in a way that respects the area's traditional values of independence and volunteerism. As elsewhere, designation as a national heritage area perpetuates and highlights their story, while adding economic value through increased heritage tourism, recreational access and activities, and improving the quality of life for residents.

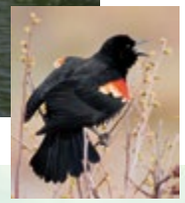
National heritage areas also provide the National Park Service an opportunity to conserve and tell the story of the nation's diverse cultures. The Cane River National Heritage Area in Louisiana, for example, interprets a culturally complex region created by the merging of American Indian, African, Caribbean, French, and Spanish cultures. The Gullah Geechee communities of coastal South Carolina, Georgia, North Carolina, and Florida are descendants of enslaved Africans from various ethnic groups of west and central Africa. The geographic isolation from outsiders and strong sense of family and community allowed the Gullah Geechee people to maintain a separate creole language and develop distinct culture patterns. Today, the Gullah Geechee Cultural Heritage Corridor conserves the coastal communities and barrier islands in this region.

Working at a landscape scale and recounting stories of industry, labor, agriculture, conflict, and community through the voice of the people that live there, national heritage areas further the mission of the National Park Service.

Mississippi National River and Recreation Area

The 54,000-acre Mississippi National River and Recreation Area was established by Congress in 1988. A true partnership park, the National Park Service owns very little land (64 acres) and works with 25 local governments, state agencies, and numerous organizations to protect the globally significant resources along the 72-mile stretch of river running through the Minneapolis/Saint Paul, Minnesota, metro area.

The Mississippi is one of the world's major river systems in size, habitat diversity, and biological productivity. The third longest river in North America, it flows 2,350 miles from its source at Lake Itasca through the center of the continental United States to the Gulf of Mexico. Its watershed includes all or parts of 31 states and two Canadian provinces and measures approximately 1.2 million square miles—about 40 percent of the lower 48 states. The river and its flood plain are home to a great diversity of species.



Looking beyond the recreational values of this section of the Mississippi, NPS is part of collaborative efforts along the entire course of the river and throughout its watershed. The study and preservation of habitats for migrating birds is of special interest. Some 60 percent of all North American birds use the Mississippi River Basin as their migratory flyway, part of the longest migration route in the Western Hemisphere.

This area includes landscapes, stories, and resources that represent those of the entire river and that have awed and inspired people for centuries. The park includes only a fragment of the larger Mississippi River. Recognizing that everything starts elsewhere and continues beyond the park's boundary, NPS actively engages in multi-state, multi-agency initiatives.

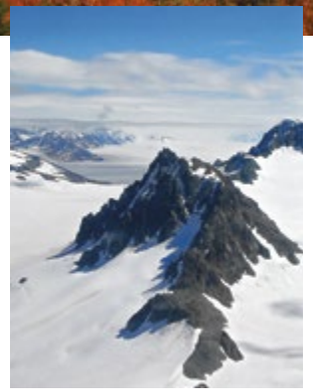
The Mississippi River Trail and the Mississippi River Parkway Commission, for example, envision a continuous route from the headwaters to the Gulf of Mexico. Working with these organizations, NPS provides leadership, funding, and planning assistance to create a continuous biking and pedestrian trail that now extends for about two-thirds of the river's length.

NPS also works with the Mississippi River Collaborative, which links interests of 10 national park units, 30 national wildlife refuges, 6 national trails, the Army Corps of Engineers, and other agencies to address watershed-wide concerns about public access, education, fish and wildlife conservation, restoration, and invasive species. NPS has been instrumental in securing funds from federal sources to support connectivity and public access beyond the park's boundary. For example, the park and partners are currently studying migratory birds to target habitat preservation and restoration priorities to best serve the Mississippi Flyway.

The park works to fulfill the goal of its comprehensive management plan: to achieve a river corridor of continuous public or private open space along the shoreline, connected to the downtowns and neighborhoods by open space and trails.

Wrangell-St. Elias National Park and Preserve

With a boundary encompassing 13.2 million acres, Wrangell-St. Elias is the largest national park in the United States. Envisioning the enormous scale of this park is a challenge, but it can be described as large enough to hold 6 Yellowstones, or about 17 Yosemites.



Landscape-scale conservation is very large scale indeed in an area the size of Wrangell-St. Elias. The 13.2 million-acre national park unit includes 4 million acres of preserve (where sport hunting and commercial trapping are allowed), and nearly 10 million acres of designated wilderness.

Characterized by high mountains, icefields, and glaciers, the park and adjacent protected areas transition from northern interior to coastal biogeoclimatic zones, resulting in high biodiversity of plant and animal communities ranging from marine, coastal forest, montane, subalpine and alpine tundra, all in various successional stages. The Tatshenshini and Alsek river valleys, while outside the park, are pivotal because they allow ice-free linkages from coast to interior for plant and animal migration. This is one of the few places remaining in the world where ecological processes are governed by natural stresses and the evolutionary changes in a glacial and ecological continuum.

However, for the Chisana herd of woodland caribou, the park is not large enough. Their range extends across the US border into Kluane National Park in Canada. Beginning in the late 1980s, the population declined due to a variety of stresses, and almost all hunting was stopped in 1994. A transboundary recovery effort from 2003 to 2006, involving the National Park Service, Parks Canada, the Yukon Government, and First Nations, was successful in increasing the herd size to sustainable levels.

NPS cooperates with its counterparts in Canada in a variety of efforts to promote understanding of the international significance of this massive area. Law enforcement, river use, and fire management are some topics of mutual interest and cooperation across international borders. Traditional human uses and family ties also transcend international boundaries, and NPS has facilitated visits by tribal elders who face challenges in having the necessary paperwork to travel across modern borders.

Wrangell-St. Elias, in combination with its Yukon neighbor Kluane National Park, was named by the United Nations an international World Heritage Site in 1978—the first bi-national designation. Glacier Bay National Park in Alaska and Tatshenshini-Alsek Provincial Park in British Columbia were added in 1993. Together, these four units include 24.3 million acres, one of the largest internationally protected ecosystems on the planet.

Cuyahoga Valley National Park

Cuyahoga Valley National Park in northeastern Ohio was designated a national recreation area in 1974 and renamed a national park in 2000. Congress set aside nearly 33,000 acres "for the maintenance of needed recreational open space necessary to the urban environment."

Located along the Cuyahoga River between the metropolitan areas of Cleveland and Akron, the park is within an hour's drive of nearly 4 million people. The National Park Service works with a variety of partners to provide visitors with year-round recreational opportunities.

Cuyahoga Valley National Park is also the keystone in the Ohio & Erie Canalway National Heritage Area, established in 1996. The corridor includes 110 miles of the historic canal that opened Ohio to commerce and industrialization in the mid-19th century. Twenty miles of the canal's towpath go through Cuyahoga Valley National Park. The fully accessible Towpath Trail—popular for walking, hiking, and biking—is open 24 hours a day, offering rare views of nocturnal wildlife. The Towpath Trail extends outside the park to the north and south and links to several other trail networks along the way. Attracting 2.5 million visitors a year, it expands preservation and recreation opportunities well beyond the park.

The park extends its reach in many other ways. Its Countryside Initiative and its watershed stewardship program are just two examples of how Cuyahoga Valley National Park works at a landscape scale to protect significant resources and provide models of sustainable living.

The park started the Countryside Initiative in 1999 to preserve the pastoral landscape and farming heritage of the Cuyahoga Valley. With the help of a nonprofit organization formed to manage the program—the Countryside Conservancy—the park set out to rehabilitate 20 picturesque farms that had operated in the valley. NPS owns the farms and grants long-term leases to farmers to live and work in the park, use sustainable farming methods, and to offer recreational and educational activities for park visitors.

Beyond its scenic and recreational values, Cuyahoga Valley National Park and the Ohio & Erie Canalway NHA preserve the valley's industrial and agricultural heritage. Through watershed stewardship and the Great Lakes Restoration Initiative, the park and heritage area are working even larger scale to address the region's ecosystem issues.

Farming in a national park is still an unusual concept in America, but in other countries it is considered the only practical way to maintain a nation's parks. The lived-in landscape at Cuyahoga Valley National Park preserves some of the valley's most historic and scenic resources.

Another example of the park's environmental leadership and community engagement is its watershed stewardship program. The Cuyahoga River had long been abused by the industrial centers it feeds. Starting in the 1860s, the river periodically caught fire from debris and pollution. The tenth such occurrence, June 22, 1969, made international news. The "river that burned" helped ignite the environmental movement of the 1970s and was a catalyst for the Clean Water Act and the Environmental Protection Agency. Creation of Cuyahoga Valley National Park is rooted in that movement.

Focusing on the 22 miles of river in the park and working with communities that impact the streams flowing into it, the park's watershed stewardship efforts show tangible success. Local communities have formed watershed planning partnerships and are taking steps to protect streams and wetlands. Park biologists monitor change and document results. Spawning fish and insect species can now be found in former "dead zones," and nesting bald eagles and river otters have returned. As part of an ongoing research study with the US Geological Survey, the park provides online "Ohio Nowcast," a system that uses near real-time information to "nowcast" recreational water-quality conditions on the Cuyahoga River.

Demonstrable improvements to water quality in the park inspire watershed improvements elsewhere. Cuyahoga Valley National Park is out in front in perpetuating environmental awareness and promoting stewardship and sustainability.

A CALL TO ACTION

A second-century National Park Service will manage parks as cornerstones in protecting broad natural and cultural landscapes. Threats unforeseen a century ago have emerged beyond park boundaries and demand solutions that are large in scope and require collaboration with partners. We will be recognized as a world leader in integrated resource stewardship and sustainability of our facilities and operations using the latest technology.

Goals

To preserve America's special places in the next century, the NPS must:

- **Manage the natural and cultural resources of the National Park System to increase resilience in the face of climate change and other stressors.**
- **Cultivate excellence in science and scholarship as a foundation for park planning, policy, decision making, and education.**
- **Achieve a standard of excellence in cultural and natural resource stewardship that serves as a model throughout the world.**
- **Collaborate with other land managers and partners to create, restore, and maintain landscape-scale connectivity.**

—A Call to Action for Preserving America's Special Places in the Next Century

For More Information

Revisiting Leopold: Resource Stewardship in the National Parks, NPS Advisory Board Science Committee 2012, quoted in this publication, is available online at www.nps.gov/calltoaction/PDF/LeopoldReport_2012.pdf

A Call to Action: Preparing for a Second Century of Stewardship and Engagement is available online at www.nps.gov/calltoaction

For additional information about the parks described in this publication, visit their websites at www.nps.gov. Link to in-depth expanded park pages or use the "contact" link to reach each park directly.

The following websites offer information on programs related to this topic:

National Heritage Areas www.nps.gov/history/heritageareas/INDEX.htm

National Trails System www.nps.gov/nts

Practitioners' Network for Large Landscape Conservation www.largelandscapenetwork.org

Rivers, Trails, and Conservation Assistance Program www.nps.gov/orgs/rtca/index.htm

Science in the parks www.nature.nps.gov

NPS Stewardship Institute www.nps.gov/stewardshipinstitute

Acknowledgments

This publication is a product of the National Park Service Scaling Up Team. The team, composed of individuals and partners throughout the nation, works to:

- Cultivate and achieve excellence in science, scholarship, and collaborative stewardship of cultural and natural resource corridors as a foundation for landscape-scale park planning, policy, decision making, and education that serves as a model throughout the nation and the world;
- Facilitate the cultural awareness and understanding of large landscape conservation and partnership principles and practice necessary for the National Park Service to lead, collaborate, or engage in large landscape efforts.

Raymond Sauvajot, NPS Natural Resource Stewardship and Science, Scaling Up champion

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Thanks to the park staffs who provided information, photographs and reviews for the examples of national park areas featured in this publication.

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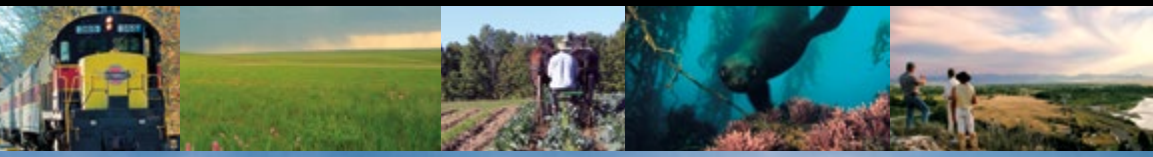
Scaling Up: Collaborative Approaches to Large Landscape Conservation builds on a previous publication, *Branching Out: Approaches in National Park Stewardship*, published in 2003 by Eastern National and also written by Paula Degen and designed by Christina Watkins and Amanda Summers.

National Park Service Mission Statement:

The National Park Service preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. The National Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

National Park Service
U.S. Department of the Interior



"A second-century National Park Service will manage parks as cornerstones in protecting broad natural and cultural landscapes. Threats unforeseen a century ago have emerged beyond park boundaries and demand solutions that are large in scope and require collaboration with partners."

—A Call to Action for Preserving America's Special Places in the Next Century

This *Call to Action* is a recent acknowledgment of what has been fundamental to the work of national parks and their partners for a very long time. Preserving natural and cultural resources and values "unimpaired" means connections and engagement far beyond a park's boundaries. It means embracing the concept of collaborative conservation at the large landscape scale.

This is a collection of 20 examples of parks, programs, and initiatives that are already working at landscape scale. The sampling represents varied sizes, complexities, geography, and vision. They show that large landscape conservation is not new to the National Park Service. As the pace of change quickens, and the need grows, more and more parks and partners are answering the call to "scale up" their efforts.