



NEW YORK STATE
**Statewide Comprehensive
 Outdoor Recreation Plan**
 Improving our Visitors' Experience through
 Inclusivity, Diversity and Resiliency



**Parks, Recreation
 and Historic
 Preservation**

2020-2025

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The New York State
Final Statewide Comprehensive
Outdoor Recreation Plan
and
Final Generic Environmental
Impact Statement

2020 – 2025

Prepared by: New York State Office of Parks, Recreation and Historic Preservation

Completed: August 28, 2019

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**Parks, Recreation
and Historic
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**SEQR
NOTICE OF COMPLETION OF A FINAL GEIS**

Date of Notice: August 28, 2019

Lead Agency: New York State Office of Parks, Recreation and Historic Preservation (OPRHP)

Title of Action: **Adoption and Implementation of the 2020-2025 Statewide Comprehensive Outdoor Recreation Plan**

SEQR Status: Type I

Location of Action: Statewide

This Notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review) of the Environmental Conservation Law.

OPRHP, as lead agency, has prepared a Final Generic Environmental Impact Statement (FGEIS) regarding the proposed action described below (Statewide Comprehensive Outdoor Recreation Plan 2020-2025).

Brief Project Description: The Statewide Comprehensive Outdoor Recreation Plan (SCORP) is prepared periodically by the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) to provide statewide policy direction and to fulfill the agency's recreation and preservation mandate. The updated SCORP serves as a status report and as an overall guidance document for recreation, resource preservation, planning, and development from 2020 through 2025. The document is also used to guide the allocation of state and federal funds for recreation and open space projects. The direction for recreation in New York State is guided by several themes, with associated goals and recommended actions. As a road map for recreation decision-making, these themes provide structure and support for planning and inform administrative and legislative action. These themes are: 1. Keep the outdoor recreation system welcoming, safe, affordable, and accessible; 2. Improve the visitor experience; 3. Restore and enhance the State outdoor recreation system with an emphasis on conservation and resiliency; and 4. Celebrate and teach history while promoting historic preservation efforts across the State. Potential environmental impacts associated with adoption and implementation of the plan, as well as mitigation measures that could be taken to reduce potential impacts, are included as a part of the Plan which, in its entirety, constitutes a Final Generic Environmental Impact Statement. The Final SCORP/GEIS contains a comments and responses chapter as well as provides updates and additions to the Draft SCORP/GEIS as necessary.

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AVAILABILITY OF FGEIS: Agencies and the public are afforded the opportunity to consider the FGEIS; this consideration period ends on September 9, 2019. Copies of the Final SCORP/GEIS are available for review at the office of the agency contact and the document can also be reviewed on OPRHP's website at:

<https://parks.ny.gov/inside-our-agency/master-plans.aspx>.

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ACRONYMS

<u>Acronym</u>	<u>Definition</u>	<u>Acronym</u>	<u>Definition</u>
AASHTO	American Association of State Highway and Transportation Officials	DOS	New York State Department of State
ADA	Americans with Disabilities Act	DOT	New York State Department of Transportation
ADAAG	Americans with Disabilities Act Accessibility Guidelines	ECL	Environmental Conservation Law
AHR	Americans for our Heritage and Recreation Campaign	EDC	New York City Economic Development Corp.
AHRI	American Heritage Rivers Initiative	EEC	DEC Environmental Education Center
APA	Adirondack Park Agency	EIS	Environmental Impact Statement EMB
APSLMP	Adirondack Park State Land Management Plan		OPRHP Environmental Management Bureau
AT	Appalachian National Scenic Trail	EPA	United States Environmental Protection
ATV	All-Terrain Vehicle	EPF	Environmental Protection Fund
BCA	Bird Conservation Area	EQBA	Environmental Quality Bond Act
BIG	Boating Infrastructure Grants	EST	Empire State Trail
BLM	Bureau of Land Management	FASTA	Fixing America's Surface Transportation Act
BMP	Best Management Practices	FEIS	Final Environmental Impact Statement
Bond Act	Clean Water/Clean Air Bond Act	FEMA	Federal Emergency Management Agency
BOW	DEC Bureau of Wildlife	FERC	Federal Energy Regulatory Commission
BRFSS	Behavioral Risk Factor Surveillance Survey	FFY	Federal Fiscal Year
BRI	New York State Biodiversity Research Institute	FHWA	Federal Highway Administration
CARA	Conservation and Reinvestment Act	FLP	DOI Forest Legacy Program
CCC	Commodity Credit Corporation/Civilian Conservation Corps	FPP	Farmland Protection Program
CDBG	Community Development Block Grants	FSB	OPRHP Field Services Bureau
CDBG-DR	Community Development Block Grants for Disaster Recovery	FSP	Forest Stewardship Program
CFA	NYS Consolidated Funding Application	FWMA	Fish and Wildlife Management Act
CIP	Capital Investment Plan/Program	FY	Fiscal Year
CMAQ	Congestion Mitigation and Air Quality Improvement Program	GDP	Gross Domestic Product
CMP	Coastal Zone Management Program or Coastal Management Program	GEIS	Generic Environmental Impact Statement
COE	United States Army Corps of Engineers	GOSR	Governor's Office of Stormwater Recovery
CPGLP	Conservation of Private Grazing Lands Program	HDRU	Cornell University Human Dimensions Research Unit
CRP	Conservation Reserve Program	HUD	Housing and Urban Development
CRRA	Community Risk and Resiliency Act of 2014	IBA	National Audubon Important Bird Area
CUGIR	Cornell University GeoSpatial Information Repository	IPCNYS	Invasive Plant Council of New York State
DEC	New York State Department of Environmental Conservation	ISTEA	Intermodal Surface Transportation Efficiency Act
DEIS	Draft Environmental Impact Statement	LaMP	Lakewide Management Plan
DESP	OPRHP Division of Environmental Stewardship and Planning	LWCF	Land and Water Conservation Fund
DMAP	Deer Management Assistant Program	LWRP	Local Waterfront Revitalization Program
DOA	United States Department of Agriculture	M&RV	OPRHP Bureau of Marine and Recreational Vehicles
DOD	United States Department of Defense	MOU	Memorandum of Understanding
DOH	New York State Department of Health	MOA	Memorandum of Agreement
DOI	United States Department of the Interior	MPO	Metropolitan Planning Organization
		NASORLO	National Association of State Outdoor Recreation Liaison Officers
		NASPD	National Association of State Park Directors
		NAWCA	North American Wetland Conservation Act
		NCT	North Country National Scenic Trail
		UMP	Unit Management Plan (DEC)

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The 2020-2025 New York Statewide Comprehensive Outdoor Recreation Plan (SCORP) is a product of the continuing planning process of the New York State Office of Parks, Recreation and Historic Preservation. The Division of Environmental Stewardship and Planning (DESP) has primary responsibility for developing the plan. However, the development of this report would not have been possible without the valuable contributions of other agency staff; other State agencies, park, recreation, and preservation organizations and the general public.

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EXECUTIVE SUMMARY



The Statewide Comprehensive Outdoor Recreation Plan (SCORP) helps guide statewide decision-making regarding recreation project development. It is also a tool that helps the State identify recreation trends and offers specific recommendations on what recreation providers can do to fulfill them.

Every five years, the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) prepares the SCORP to provide policy direction and fulfill the agency's recreation and preservation mandate. OPRHP is the state agency that has the authority to represent and act for the State in dealing with the Secretary of the Interior for the purposes of the Land and Water Conservation Fund (LWCF) Act of 1965, as amended. A new SCORP is required for the years 2020 to 2025 to maintain the State's eligibility to receive funding from the LWCF. The current report serves to:

- describe the State's demand for, and supply of, recreation resources (local, state and federal);
- establish and maintain citizens' participation through outreach and surveys;
- identify needs, trends and new opportunities for recreation improvements;
- provide an implementation program to meet the goals identified by its citizens and elected leaders;
- establish a statewide recreational planning framework to guide regional and local agencies in formulating plans, program policies, and priorities;
- develop and maintain adequate information in support of OPRHP's planning, development, administration, coordination, and review functions for SCORP.

Process

The SCORP's value lies in how it is used by recreation decision-makers, managers, staff and administrators to improve and protect the State's natural, cultural, and recreation resources. The planning principles used to guide its development have been in place for many years; what is new is how people recreate today. To better understand the State's outdoor recreation needs over the next five years, OPRHP collected and analyzed statistical, census, and outdoor recreation data on a county basis. To assure maximum opportunity for public participation, OPRHP has:

- collected more than 10,000 surveys to evaluate public preferences for recreation;
- surveyed and inventoried recreation providers statewide;
- coordinated with user groups and other state agencies.

Gathering input and feedback about the public's recreation experience across NYS is an on-going process. OPRHP routinely conducts visitor surveys at state facilities throughout the year; this information helps lay the groundwork needed to understand user preferences and needs, and to maximize the public benefit of dollars spent for recreation in the State.

Findings Highlights

According to the 2018 Public Outdoor Recreation Survey, there is a great desire for parks and open space in New York State. More than half of residents surveyed said that outdoor recreation facilities are needed within 30 minutes of their homes.

New Yorkers are looking for more places in their communities to swim, picnic, and for their children to play. Almost 22% indicated that their number one priority is open space close to home.

For years, “relaxing in the park” garnered the highest participation compared to other outdoor measured recreation activities. That changed in 2013 when the Public Outdoor Recreation Survey indicated that “walking for enjoyment” edged out relaxing in the park.

For the second SCORP in a row, the State’s number one outdoor activity continues to be taking a walk in the park according to the 2018 survey. This signals a demographic change; as the Baby Boomers grow older, they tend to recreate at a different level, compared to previous generations. People today want to remain active as they age, and their outdoor recreation preferences reflect this change.

This plan also establishes eight programmatic goals, based on the OPRHP mission, public responses, findings from research, data analysis, and input from the intra-state agency work group. These goals help shape the plan’s recommendations for action, which provide a path toward realizing the State’s long-term vision for recreation. The goals and recommendations are framed by the four overarching themes:

1. Keep the outdoor recreation system welcoming, safe, affordable, and accessible.
2. Improve the visitor experience.
3. Restore and enhance the State outdoor recreation system, with an emphasis on conservation and resiliency.
4. Celebrate and teach history while promoting historic preservation efforts across the State.

The SCORP also provides a comprehensive review of the potential environmental impacts of implementing these recommended actions. Its appendices support the plan’s findings with more detailed information, including an up-to-date look at the many programs, initiatives, and organizations that are active in supporting recreation, environmental action, and resilience efforts in New York State.

Trends

Developing the SCORP provides the State an opportunity to take a forward-thinking look at recreation and open space planning. The process also helps answer key questions, including:

What does recreation look like in the future?

The definition of recreation is evolving. As our lives become more sedentary, technological, and oriented indoors, it becomes even more important to provide access to high-quality outdoor public spaces and programs that encourage people of all ages and backgrounds to put their electronic devices down and get outside.

Where is the greatest need?

Overall, New York is well-served by the recreation “estate,” with over 15,700 recreation facilities provided by all levels of government, nonprofit organizations, and the private and commercial sectors. A function of this plan, however, is to identify which areas need additional recreation facilities or could be better served by other types of resources. The greatest level of need is often seen in metropolitan areas, especially in urban centers in the New York City metropolitan region. The challenge for recreation providers continues to be ensuring that urban residents have access to green spaces and outdoor recreation.

What types of activities do people like best?

Over 86% of those surveyed participated in some form of outdoor recreation in 2017, according to the most recent Public Outdoor Recreation Survey (2018). People selected “walking for enjoyment,” jogging, and hiking as the most popular activities. Many also gave high marks to “relaxing in the park,” swimming, and bicycling.

Who is participating in recreation?

Recreation preferences begin to tell a story about upcoming demographic changes in the State. In 20 years, the composition of the State's population will differ from what it is today. An increasing elderly population, greater racial diversity, and a net out-migration of younger New Yorkers is projected—changes which offer their own challenges and opportunities to recreation providers. As more New Yorkers reach retirement age, recreation providers must consider this groups' preferences and abilities and adjust their facilities and programs to help them feel welcome. Younger people and urban residents can also be encouraged to get outside by providing parks that are up-to-date, safe, and offer relevant programs that interest them.

A projected increase in economic inequality may result in more impacts on those who live in communities with little open space, few transportation options, or limited access to nature. The State must improve outreach and programming efforts in these neighborhoods and engage with community groups, schools, nonprofits and other local entities to ensure that everyone in NYS has access to green space and outdoor recreation.

What other major issues will impact recreation in the State?

Many of the State's most beloved parks and facilities are dealing with a "new normal" from the impacts of our changing climate. More frequent and intense storms and higher water levels at our Great Lakes parks on Ontario and Erie waterfronts are causing shoreline erosion, infrastructure damage, and chronically wet campsites. Coastal parks in Long Island have lost boardwalks, and fragile barrier islands and dune ecosystems have been damaged. High winds, high-intensity rain events, and flooding are impacting many interior areas as well, where creeks and streams can top their banks, bring down trees and damage park infrastructure. Proactive planning with defined action is essential to protecting our outdoor recreation areas and natural and historic resources in light of the new reality.



Plan Content

It is easy to take parks and open space for granted. Here in NYS we are fortunate to have an abundance of public parks, specialized recreation facilities, historic sites and natural green spaces of every size and type, in every region, county, town, city, and village. We'd be hard-pressed to name a place in our state without one (or more) public park, state forest, trailway, community garden, playground, or some other type of outdoor recreation resource. This plan looks at the whole recreation system in the State to identify what is happening in these spaces; how people are using them, what they enjoy doing, and what's changing. It defines what outdoor recreation in NYS is, and helps support and inform those who provide, operate, and value these essential open spaces and recreation resources.

Parks are for people, and it is important for recreation providers to know who these people are and what they want (or don't want) to see and do in their leisure time. It is a statewide initiative to actively create inclusive, walkable, multi-modal, age-friendly and resilient communities that prioritize outdoor recreation and green spaces. New York State is actively engaged in wide-ranging efforts to prepare for a future with more climate-related challenges. The State's ambitious goals include eliminating net greenhouse gas emissions by 2050, with all its electricity coming from carbon-free sources. Many organizations, agencies, political entities, academic institutions and others are studying these issues in-depth and helping to understand what is needed to establish effective responses.

Finally, how will the State's recreation goals and actions be implemented? Funding is essential, but technical input, science and academic information are also necessary. The SCORP provides lists and descriptions of resources and organizations that support outdoor recreation. From snowmobiling to coastal conservation, opportunities for funding and other types of support are available from many sources.



Priorities 2020-2025

Having places to play, relax, and exercise within easy access in your community is a critical quality-of-life issue. Parks and open spaces allow people to have fun, socialize with friends and family, develop physical skills and learn about nature. Access to recreation sites, however, may be limited by physical, social or economic factors, among others. Rural, urban and suburban communities all have their own issues related to recreation access. Cities in NYS have everything from pocket, or mini-parks, to NYC's Central Park, but these green spaces may not be within walking distance or convenient for regular visits by all.

People living in the country or suburbs are often surrounded by trees and open space but may lack the mobility or transportation to get to public parks or nature preserves. To help include everyone in recreation settings, providers can offer support—such as transportation options for people without cars—or targeted programming to interest visitors of all backgrounds, or accommodations—such as modified sports equipment or varied cultural events. With our state's increasing diversity, going forward, these considerations must be integrated into any recreation planning.

Overlaying the recreation goals and recommendations in the 2020-2025 SCORP is the State's response to climate change. As public outdoor recreation and open space providers, we face both a crisis and an opportunity. The natural world is changing rapidly: storms are more destructive, temperatures and water levels are rising, and plants, animals—and ultimately—people are being forced to change. Protecting our invaluable parks, natural areas, and historic sites as a high-quality resource that will continue to be available to residents and visitors must be a priority. However, as large-scale holders of open space, waterfronts and wetlands, state agencies have the opportunity to play a significant role in efforts to adapt to and mitigate the impacts of climate change. The State's plan for outdoor recreation over the next five years must address and prepare for these impacts.



Conclusion

Attendance at parks is up nation-wide, and this is true in NYS as well; in recent years NYS facilities have seen more visitors than ever before. The variety and beauty of the State's natural landscapes and rich history continues to draw visitors from out of state and abroad. Support for parks and related infrastructure is strong.

Letchworth State Park in the State's Genesee Region has been voted the best state park in the nation, winning [USA Today's](#) 2015 Readers' Choice Award, and the park was voted the number one attraction of NYS in 2017. The 750-mile Empire State Trail, targeted for completion in 2020, will become the largest recreational multi-use trail in the country, traversing the State along the historic Hudson River Valley and Erie Canalway corridors. The popular Jones Beach State Park in Long Island has recently been restored and updated with a new concession building, games area, and an "Adventure Course" interactive splash pad.

Recognizing that NYS outdoor recreation system is part of a strong tourism economy, the Governor has provided strong support for state parks. The State continues to invest in its parks, with another \$110 million in its [NY Parks 2020](#) plan.

Building upon this momentum, the goals and recommendations for action in this plan have been carefully considered, with an eye to continuing the current upswing. Public input, knowledge and information from members of the SCORP advisory committee, and other agencies' recommendations, have all provided an important framework for supporting our recreation resources and moving forward.

CHAPTER 1 – INTRODUCTION

What is the SCORP?

The Statewide Comprehensive Outdoor Recreation Plan (SCORP) is New York’s guide for how to preserve and promote opportunities for outdoor recreation in the state. It is the culmination of in-depth research, analysis, and advice from outdoor recreation providers, input from other agencies and from residents who participated in a survey or submitted comments on the draft plan. The plan helps to guide strategy for the State, local governments, and other outdoor recreation providers. It establishes goals and priorities for our recreation facilities and provides recommendations for how those might be achieved. By delineating a clear course of action, it helps the State determine where best to make recreation investments over the next five years.



Outdoor enthusiasts enjoy the varied recreation opportunities of the Adirondack Mountains during all four seasons.

Purpose

The SCORP is prepared by the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) to fulfill two primary objectives: First, the plan serves as a status report and general guidance document for the planning, preservation and development of the State’s outdoor recreation resources. It is the State’s assessment and policy statement on the state of recreation in NYS to the executive and legislative branches of State government, to other units of government, to recreation and preservation interest groups, and to the public.

Goals and recommendations in the SCORP help inform the allocation of State, federal, municipal, and nonprofit funds for recreation and open space projects. The information and analysis presented become criteria for evaluating projects.

As a comprehensive plan developed by a State agency, the SCORP is required to consider potential environmental impacts under the New York State Environmental Quality Review Act.¹ (see Chapter 7: Generic Environmental Impact Statement).

The other purpose for developing the SCORP is to fulfill a federal recreation mandate under the Land and Water Conservation Fund Act. Every five years, each state must provide an outdoor recreation plan prior to consideration by the Secretary of the Department of the Interior for financial assistance for outdoor recreation acquisition and development projects.² As the agency with the authority to represent and act on behalf of the State of New York with the Secretary of the Interior for the purposes of the LWCF Act, it is the obligation of OPRHP to create and update the SCORP. This plan fulfills the State’s LWCF obligation for federal fiscal years 2020 through 2024.

¹ In New York State, most projects or activities proposed by a State agency or unit of local government and all discretionary approvals (permits) from a NYS agency or unit of local government require an environmental impact assessment as prescribed by 6 NYCRR Part 617 State Environmental Quality Review (SEQR) [Statutory authority: Environmental Conservation Law Sections 3-0301(1)(b), 3-0301(2)(m) and 8-0113]. SEQR requires the sponsoring or approving governmental body to identify and mitigate the significant environmental impacts of the activity it is proposing or permitting.

² Land and Water Conservation Fund Act of 1965, as amended (54 U.S.C. §200305) and further detailed in Chapter 2 of the LWCF State Assistance Program Federal Financial Assistance Manual (Oct. 1, 2008).



Process

Developing the SCORP is a major undertaking for OPRHP. Groundwork for the 2020-25 plan required an extensive public outreach effort, which included a statewide survey of NYS residents as well as robust data analysis and collaboration with multiple agencies.

New York is a large state, with a population of nearly 20 million people. The state's 62 counties range in size from more than 2,680 square miles in rural St. Lawrence County, to the Borough of Manhattan's 23 square miles. To ensure that the data provided a comprehensive picture of recreation use for the entire state, the collection model was designed to ensure that feedback was solicited from every region.

More than 10,000 surveys from the public were collected to assess current participation in recreation activities, and to help identify recreation preferences and issues. State and municipal park professionals were surveyed, and the information collected from these sources contributed to the analyses in this plan. A series of meetings held with county recreation providers helped obtain feedback about the State's many county parks and painted a clearer portrait of the range and capacity of outdoor recreation resources in the state.

Planning Principles

The framework used to guide the decisions and overall direction of the SCORP is largely influenced by planning principles established by the agency many years ago. This defined approach is based upon three fundamental principles:

1. Planning is a continuous process.

Planning does not produce a set-in-stone blueprint for the future; it is an open-ended process that provides decision-makers with a range of options. Subject to a changing environment, an effective plan requires that assumptions, methods and objectives are periodically reexamined, and new factors and information are incorporated as conditions change.

2. Planning must be comprehensive.

To be effective, the information and research base supporting the planning process must consider a complete range of human activity, in addition to environmental factors—social, economic and physical. Planning for recreation facilities, programs and services must include the context of the natural and built environment, and their potential use. Recreation planning also analyzes potential environmental impacts, socio-economic factors and demographic changes within the population.

3. Planning must be a coordinated process with public participation.

Effective planning for public agencies must include the opportunity for citizen participation and input. Coordination at all levels of government, and with both the public and the private sectors, is essential. Adherence to these principles is fundamental to the success of OPRHP's overall goal to provide a unified park and recreation system able to serve the needs of all residents. The plan and the process must also be responsive to modification, as warranted, to meet changes in societal needs and values, in the context of existing environmental conditions.

Open Space Plan

In 2016, New York State published a plan to ensure the protection of the State's open space resources:

Conserving Open Space in New York State: New York State Open Space Conservation Plan.

This comprehensive statewide plan establishes the State's open space conservation goals, actions, and tools. Developed by nine Regional Advisory Committees composed of representatives of county governments, and others selected by DEC and OPRHP. Involved agencies were:

- Department of Environmental Conservation (DEC)
- Office of Parks Recreation and Historic Preservation (OPRHP)
- Department of State (DOS)
- Department of Agriculture and Markets (DAM)
- Department of Transportation (DOT)

The Open Space Conservation Plan provides details on priority conservation projects nominated by the Regional Advisory Committees and makes policy recommendations on new initiatives and priorities, such as enhancing wetlands and forests to help mitigate and adapt to climate change.

This document has become an important voice for conserving the quality of life that open space provides and complements the State's resiliency efforts.

www.dec.ny.gov/lands/317.html

Approach

Planning efforts undertaken by OPRHP and the NYS Department of Environmental Conservation (DEC) have evolved in slightly different directions to effectively protect and manage the State's natural, cultural and recreation resources. The framework for planning that OPRHP employs is based on the following hierarchy:

1. SCORP / Statewide Parks and Recreation Plans—Broad policy and assessment document that provides a vision for recreation in New York State and in the State Park system.
2. Statewide trails plan/open space plans—Statewide plans that focus on an aspect of natural, cultural and recreational resource management.
3. Regional planning initiatives—Plans wherein OPRHP is a partner in achieving regional management goals, such as the Great Lakes and the Lake Champlain basin programs.
4. Park/Historic Site Master Plans, stewardship plans, and special studies—Site specific plans that analyze natural, cultural and recreation resources, evaluate alternative management strategies, and recommend a preferred management and/or development direction.
5. Park development and management plans (Five-Year Capital Investment Plan)—Outlines projects (i.e., new development and rehabilitation projects; management actions) scheduled to be undertaken within five years. These plans often implement projects identified in the Park/Historic Site Master Plans and special studies.

Resource planning is, therefore, a progression—from statewide policy and goals, to system management directions, to park and site plans, and finally to implementation of capital projects and resource management actions. All planning is undertaken within the context of public participation.

DEC's planning process differs from OPRHP's, primarily in its focus on land use and management. DEC follows a similar structure for developing State land development and unit management plans and other policy documents, also within the framework of public participation.



Allegany State Park



Sam's Point Preserve in Minnewaska State Park, in New York's Palisades Region, has the highest elevations in the Shawangunk Mountains.

Statewide plans like SCORP and the Open Space Conservation Plan are the product of multi-agency collaborations. This SCORP was developed with consideration of stated goals of both OPRHP and DEC. The plan also incorporates the recommendations of these agencies, builds on the findings of previous plans, and develops recommendations for future action based on public input. The programs and statewide initiatives outlined in the SCORP have a five-year horizon; as a result, the SCORP is an evolving response to changing conditions and new information.

The policies and recommendations of the SCORP reflect an extensive effort to collect and analyze information, engage with recreation and outdoor experts, and compile original and collected research. Together with public input, these provide an accurate representation of outdoor recreation usage and needs in NYS.

What is Outdoor Recreation?

By its very title, the SCORP is focused on outdoor recreation—but in this context, what is “outdoor recreation”? For our purposes this refers to activities that a person chooses to engage in outdoors for pleasure, fun or exercise, during time that is not otherwise obligated by work or other necessity. The term may initially trigger images of a bicyclist on a paved path, a football team practicing on a field, or a jogger running along a neighborhood sidewalk. While such active recreation pursuits are common types of outdoor recreation, other more passive activities—birdwatching, grilling, walking—also fall within this scope. Even some typically outdoor activities that occur under partial enclosure, such as ice skating on a covered rink or baseball within a seasonal inflatable dome, are considered outdoor recreation.

No matter the activity, outdoor recreation generally requires some form of open space, whether a park, field, forest, or waterway. The activities themselves determine where they are practiced. Fishing can only occur on water bodies that support fish, outdoor rock climbing on cliff faces, backpacking on lands that allow hiking and camping. These have become our outdoor recreation resources. It is the responsibility of outdoor recreation providers—whether State, municipal, nonprofit, private, or other—to ensure that these open spaces are healthy and safe spaces with clean land, air, and water. Only then can the benefits of outdoor recreation be fully realized.

Public Participation

Ultimately, the value of this document is as a guide to protecting and managing the State's natural, cultural, and recreational resources for future generations. The plan for recreation in NYS is shaped by several broad, statewide initiatives. They are:

1. Keep our outdoor recreation system welcoming, safe, affordable and accessible.
2. Increase, deepen and improve the visitor experience.
3. Restore, enhance and transform our facilities into a 21st century outdoor recreation system, relevant to all, with emphasis on conservation, restoration and resiliency of our natural and historic resources.
4. Celebrate and teach history and promote historic preservation to strengthen statewide preservation efforts.

To advance these initiatives, OPRHP works with its agency partners to determine focus issues for the SCORP that will help the State better understand and meet its outdoor recreation needs over the next five years.

Content for this plan was developed by a workgroup comprised of the OPRHP Planning Team and representatives from the NYS Department of Environmental Conservation; the Departments of Health and State; the Canal Corporation, Olympic Regional Development Authority, Hudson River Valley Greenway, and other stakeholders (see *Acknowledgements* for a complete list of contributors).

To effectively identify recreation trends, the model used for data collection was kept consistent with previous reports, with only minor modifications to accommodate new types of recreation activities. A more detailed description of data collection instruments and methodology is available in Chapter 3.

To assure comprehensive public participation, two online survey services were contracted to collect supply data statewide. Census population data and statistical software were also used to determine outdoor recreation needs on a county basis. Throughout the year, OPRHP also routinely collects visitor surveys, which provide feedback from individual parks. An evaluation of the feedback from sources such as these lays the groundwork for understanding recreation in NYS and maximizing the public benefit of dollars spent for recreation and open space in the state.



An outdoor celebration at Riverbank State Park, a 28-acre public recreation center in Manhattan, which was constructed on top of a wastewater treatment facility on the banks of the Hudson River.



Rafting at Letchworth State Park in the Genesee Region

Benefits of Outdoor Recreation and Open Space

Many benefits of outdoor recreation and open space are incalculable. How to measure the awe a child feels when she sees her first screech owl? Or place a number on the serenity a kayaker or paddle-boarder experiences by cutting smoothly across a glassy lake? These qualities defy attempts to comprehensively describe the benefits of outdoor recreation and open space.

There is, however, strong evidence that youth who spend more time being physically active can **reduce the risk for developing cardiovascular disease** and can **optimize peak bone mass**, thereby decreasing their risk for developing later-life osteoporosis.

Among adults, **multiple studies** have shown that sedentary behavior can lead to higher risks for cardiovascular disease mortality. No matter one's age, maintaining an active lifestyle can decrease the chances of developing many chronic diseases such as Type II diabetes, cardiovascular disease, and **dementia**.

Physical Activity and Disease Prevention

Many studies have shown that Americans today spend too little time being physically active. Children and adults in the U.S. spend approximately **7.7 hours per day**—approximately 55 percent of their waking time—engaged in sedentary behavior.

In NYS, it was estimated in 2017 that, of children aged 6 to 17, **less than 24 percent** met the recommended 60 minutes of daily physical activity. These low activity levels among both children and adults have an array of complex historic and cultural roots, but one potential contributing factor is related to work: the U.S. Census Bureau in 2016 estimated that, at 32.6 minutes each way, New Yorkers had the country's longest average commute.



Anglers enjoy a quiet bay at Wellesley Island State Park.

Social Infrastructure

Parks and other outdoor recreation sites are neither work nor home. Like libraries and cafes, they are “third places” where people congregate, mingle, and play. Third places and the programming that can occur at them—sometimes referred to as “social infrastructure”—is the cement that binds communities together, and, while less tangible than infrastructure for water, communications, or power, these spaces can have as pronounced an effect.

Social infrastructure is vital for establishing and maintaining the network of interpersonal connections known as a community. People with strong networks are less likely to feel lonely. A **cross-population study** found strong associations among suicide ideation and different ways of being lonely and alone, as well as the varying degree of loneliness. Those with strong social networks are also more likely to survive a devastating flood, storm, heatwave or similar catastrophic event.

A **study of the devastating 1995 Chicago heat wave**, in which 739 people died, found that those with a higher number of social connections were, after accounting for various other factors, less likely to die during the heatwave. This was especially true of the elderly. Those who had more, or stronger, connections are less vulnerable since they are checked on more often. Studies such as this contribute to a body of literature that underlies the importance of communities and the social infrastructure—parks, playgrounds, and open spaces—that underlie them.

The benefits of open space conservation are many, varied and interconnected. Urban parks in densely developed areas provide important habitats for native plants and animals and help reduce the danger posed by heatwaves. The State’s wetlands, forests, and vegetated barrier islands help mitigate storm surges and flooding, and capture carbon from the atmosphere. For a more in-depth discussion on the benefits of open space, as well as recommendations that pertain to outdoor recreation providers, see the **2016 Open Space Conservation Plan**.

Exposure to Nature

American society has a longstanding belief that time spent in nature is healthy. While this belief has a long history—tracing back to Rachel Carson, Aldo Leopold, John Muir, Henry David Thoreau and their predecessors—only recently has the accumulation of scientific studies fully supported it.

In his 2005 book *Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder*, Richard Louv describes how the change in our relationship with nature has severe consequences for the mental, physical and spiritual health of future generations. A growing concern of parents, educators and physicians is the fact that children are not playing outside anymore. With the publication of his book, Richard Louv has sparked a national dialogue among municipalities, states, resource agencies, educational institutions and community-based organizations that believe they can begin to reverse these trends through “leave no child inside” programs and activities.

In 2018, a research team **compiled data** on the health benefits of exposure to nature from more than 20 countries, including the United States, involving more than 290 million people. They found that “living close to nature and spending time outside has significant and wide-ranging health benefits.” Specifically, the researchers concluded that exposure to green space—defined as “open, undeveloped land with natural vegetation as well as urban greenspaces including urban parks and street greenery”—can, among other benefits, reduce the risk for cardiovascular disease, Type II diabetes, premature death, preterm birth, stress, and high blood pressure.

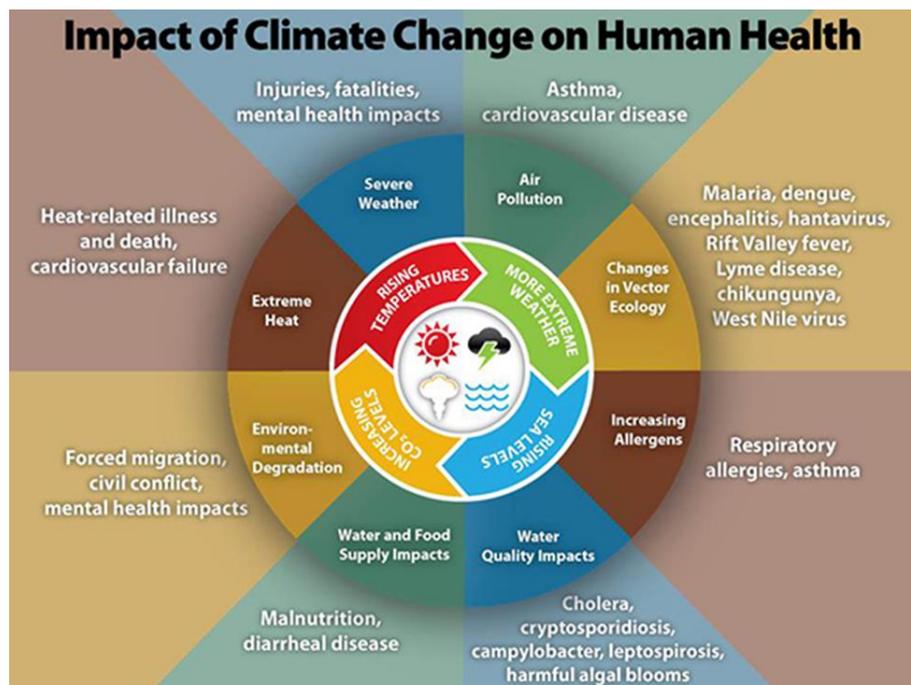
There is also **evidence** that access to green space may have beneficial effects on human immune function. For decades in Japan people have engaged in “**forest bathing**,”—visiting wooded areas for the purpose of relaxation and recreation. A 2008 study conducted in Japan found that increased forest coverage may even contribute to a decrease in mortality from cancer.

Alongside compelling evidence that access to nature has many health benefits, is the fact that these areas may not be as easily accessed by urban residents, who may only encounter nature in their local parks or streetscapes. Fortunately, evidence does show that designed natural environments such as gardens and urban parks can provide similar benefits to large, natural landscapes. A **2018 literature review** found evidence of a positive association between time spent in urban greenspace and mood, attention span, **blood pressure, stress, anxiety, anger, fatigue immune system function**, and urge to engage in physical activity. Conversely, there is a negative association with lack of contact with greenspace for mortality, short-term cardiovascular markers (heart rate), and **violence**. There is also **evidence** that incorporating natural elements in urban environments may increase the restorative potential of urban areas.

Storm Protection

In recent years, weather has had an increasingly significant impact on American communities, many of which have experienced unprecedented levels of damage from flooding, wind, and storm surge. In 2011 and 2012, NYS suffered severe destruction from three extreme weather events: Hurricane Irene, Tropical Storm Lee and Hurricane Sandy. As climate patterns become less predictable, there is a pressing need for outdoor recreation facilities to assess and retrofit their physical infrastructure.

Open space and outdoor recreation areas play a crucial role in increasing the state’s resiliency. Parks, forests, wetlands and other green spaces help to absorb stormwater and act as buffers and are therefore a key component of a comprehensive approach toward designing more resilient communities. Outdoor recreation providers can also contribute to the state’s resiliency by incorporating green infrastructure such as bioswales, green roofs and permeable pavements at their facilities, installing **living shorelines** in areas prone to ocean flooding, and using “green” practices and materials, an increasingly critical component in building resilient, sustainable communities.



U.S. Center for Disease Control & Prevention



Adirondack Mountains

Carbon Sequestration

Human activity since the Industrial Revolution has contributed to a 40% increase in the Earth's atmospheric concentration of carbon dioxide. This gas is released primarily from the burning of coal, oil, and natural gas with additional contributions from deforestation, soil erosion, land use changes, and agriculture. If emissions continue at this rate, annual average temperatures are likely to increase by 1.5 degrees Celsius between 2030 and 2052, according to a **2018 report** by the United Nations Intergovernmental Panel for Climate Change. This would have potentially disastrous effects on biodiversity, ecosystems, and human livelihood.

Outdoor recreation facilities have the opportunity to play a significant role in reducing carbon dioxide emissions. Forests and other vegetated areas become “carbon sinks,” as plants draw carbon dioxide from the atmosphere and store it as they grow.

According to the DEC, of the 30 million acres of land in NYS, 63%—or 18.9 million acres—are forested. These lands, much of which are used for some form of outdoor recreation, help sequester carbon, contributing to the State's efforts to mitigate or defer global warming, and slowing climate change.

Ecological Habitat

The varied geology of NYS creates habitats that support a rich species diversity that is part of the state's natural heritage. Unfortunately, in many areas, habitat loss and fragmentation has been a cause of decline for many native plants and animals. As sea levels rise along the Atlantic coast, Great Lakes, and up the tidal Hudson River, many of these native species will be under increased threat. Outdoor recreation providers play an important part in sustaining the remaining interconnected lands that are both critical to the long-term viability of native species and a valuable recreation resource.

Recreation planning should be undertaken with an eye toward maintaining unfragmented open space and habitat corridors. This requires coordination between outdoor recreation providers, conservation groups, biologists and local experts to identify essential habitats and corridors. Planning efforts must take into consideration pressures on specific species and ecological communities from development (both outside of and within outdoor recreation areas), invasive species, and climate change. In particular, long-term recreation planning should consider that sea-level rise will trigger inland, upland, up-slope and northward migrations of native species and ecosystem types.

Important first-step planning tools for this purpose are provided by the NYS Natural Heritage Program, which maintains an **inventory** of, and **factsheets** on, the state's rare animals, plants, and significant natural communities, as well as an online **mapping tool** to identify general areas where these species and communities have been documented.

Heatwaves

Heatwaves are a major threat to human health. As temperatures rise, so do hospitalizations and mortality, especially among vulnerable groups such as the elderly and the young. Defined as sustained periods of excessively hot weather, sometimes accompanied by high humidity, the occurrence of heatwaves is more likely in cities, where the prevalence of pavements, roofs and other dark surfaces results in significantly higher temperatures than in surrounding rural areas. These “urban heat islands” are less able to release heat back into the atmosphere than vegetation and soil, and thus produce more waste heat from automobiles, air conditioning, and industrial activity. With fewer plants, there is also less evapotranspiration—the cooling process by which water is transferred to the atmosphere by evaporation from soil and transpiration from plants.

With heatwaves **projected** to increase in magnitude, frequency and duration, urban and suburban outdoor recreation providers can help mitigate this phenomenon by reducing paved areas, planting vegetation or restoring bare, compacted areas and using lighter-colored building materials. Installing green roofs or **green walls** on buildings can also help reduce the intensity and duration of heatwaves.

Air Quality

Urban outdoor recreation areas with trees and vegetation can help reduce air pollution by decreasing demand for heating and by directly removing pollutants such as ozone. In urban and suburban areas, the moderating effect of vegetation can contribute to a reduction in emissions. During the warmer months, parks and other outdoor recreation areas with vegetation have a **generally lower ambient air temperature** than nearby developed areas, especially at night. The cooler air in a park will tend to lessen the temperature in the surrounding neighborhood(s), reducing energy use for cooling. In general, the higher the percentage of vegetated acreage, the greater the moderating effect.

While some species of trees can reduce certain pollutants, such as **ozone**, the design of new plantings aimed at improving air quality is crucial. Determinations regarding species, quantity and planting sites should be made on a case-by-case basis with consideration of desired canopy density, seasonal changes, and **wind speed, and wind direction**, as these factors can all impact the potential health value of planting in cities.

Economic Benefits

When people recreate, they improve both their health and support the state’s economy. International and out-of-state visitors who come to Niagara Falls or other scenic areas in NYS help support nearby restaurants, lodging facilities, and car rental companies. Bikers along the Empire State Trail support convenience stores, bike shops, eateries, bed and breakfasts, and inns. Visitors to the state’s many freshwater and marine beaches support Main Street businesses, private recreation providers, and other local entities.

Approximately 52 percent of NYS residents participate in some form of non-motorized recreation annually. This generates approximately \$41.8 billion in consumer spending in the state each year, directly supporting 313,000 jobs, providing \$14 billion in wages and salaries, and producing about \$3.6 billion in State and local tax revenue, according to the **Outdoor Industry Foundation**, an advocacy group.

The State Park system alone received roughly 67 million visits and generated total visitor spending of about \$4 billion from April 2015 to March 2016, **according to a 2016 report**. This spending supported nearly 54,000 jobs and generated \$2.9 billion. For every dollar of direct spending generated by OPRHP facilities, an additional \$9 of spending was induced statewide. The report also noted benefits that were more difficult to measure, such as increased tax receipts and increased valuation of nearby properties.

Opportunities for outdoor recreation in NYS attract significant numbers of visitors, both from within the state and from outside. Natural landscapes, including Niagara Falls, the Long Island beaches, and the Adirondack Mountains continue to be a major draw. According to a **2010 report**, outdoor recreation contributes approximately \$11.3 billion to NYS’s tourism economy—more than 25% of the state’s total tourism industry—and \$800 million in tax revenue.

Other Benefits

Parks and other green spaces offer more benefits than can be addressed in this plan, with new findings every day. These include:

- In healthcare settings, patients with views of green space have shorter postoperative stays, take fewer painkillers, and have slightly fewer postsurgical complications compared to those with no view or a view of a building wall. This effect has led to a widespread establishment of gardens within healthcare settings.
- Spending time in nature gives the cognitive portion of our brains a break, enabling us to focus better and be more patient. Focusing on too many activities, or even on a single thing, for prolonged periods can be mentally draining, a phenomenon called Directed Attention Fatigue. Children who spend time in natural outdoor environments are better able to pay attention and control impulses.
- Large, unfragmented open space helps prevent and diminish the **spread of vectors** that carry pathogens that cause infectious diseases such as Lyme.



Atlantic coastline, Long Island

CHAPTER 2 – THE STATE OUTDOOR RECREATION SYSTEM

Recreation in New York State

What comprises the outdoor recreation system in New York State? Formally, the NYS outdoor recreation system includes all lands directly owned by the government and its municipal subdivisions that are intended for, or in direct support of, public outdoor recreation. It is a subset of the state’s larger outdoor recreation “estate,” which encompasses *all* lands devoted to public outdoor recreation, regardless of their owner or manager. The bulk of the system is managed by the Office of Parks, Recreation, and Historic Preservation (OPRHP) and the Department of Environmental Conservation (DEC). Other land managers include the NYS Canal Corporation, Department of Transportation (DOT) and Office of General Services (OGS). Following are descriptions of the portion of the outdoor recreation system managed by the agencies, corporations and authorities that comprise the government of the State of New York.

New York’s municipal subdivisions—counties, towns, cities, and villages—provide a varied array of outdoor recreation opportunities beyond those directly owned by the State. The recreation facilities they provide are a vital part of the state’s recreation resources. While those facilities are not described here, data about municipal facilities is included in the analysis of recreation trends in the following chapter.

The increasing impact of climate change is a key issue affecting the state, and outdoor recreation providers must be prepared to meet these challenges. Trees, open space, wetlands and other natural systems help to mitigate the impact of extreme weather events, and a discussion of the value, management, and protection of these natural resources is an integral part of this plan.



Luna Island, Niagara Falls, NY

Office of Parks, Recreation and Historic Preservation

The mission of OPRHP is to provide safe and enjoyable recreational and interpretive opportunities for all NYS residents and visitors, and to be responsible stewards of our valuable natural, historic and cultural resources. Within this capacity OPRHP manages the State Park system, which includes State Parks and State Historic Sites. The Parks, Recreation and Historic Preservation Law provided an advisory body, the State Council of Parks and Recreation, and created the State Board for Historic Preservation. The Board provides advisory services and acts as the federally mandated review body in the nomination of sites for listing on federal and state registers of historic places. In addition, the law divides the State into 12 park regions, 11 under the jurisdiction of OPRHP and another, comprised of the Adirondack and Catskill Forest Preserves, administered by DEC.

OPRHP administers more than 350,000 acres of land, 189 State Parks, 35 Historic Sites, 30 nature centers, and 83 marine facilities and boat launch sites. OPRHP oversees more than 5,000 structures; 67 guarded beaches; 36 swimming pools; 22 marinas; 27 golf courses; more than 950 cabins, cottages and rental houses; 8,555 campsites; and more than 2,000 miles of trails.

State Parks and Preservation Areas

With continued losses of natural areas through development, the State recognized the critical need for new parkland designations for places with wildlife, flora, scenic, historical and archeological sites that are unique and rare in the state. Article 20 of the Parks, Recreation and Historic Preservation Law gave OPRHP's commissioner the authority to designate Park Preserves. The Article also allowed creation of Park Preservation Areas, to conserve areas of State Parks, Parkways, Historic Sites, and recreational facilities that, although the entire facility did not qualify as a Park Preserve, nonetheless possess outstanding ecological values, including assemblages of flora and fauna that are unique or rare in the state. The Park Preserve system currently consists of eight Park Preserves and eight Park Preservation Areas comprising more than a third of land under OPRHP's jurisdiction.

Nearly 80% of the State Park system consists of natural areas with varied geologic features and ecological habitats. These notable landscapes include the:

- waterfalls and gorges of the Finger Lakes region,
- Genesee River Gorge at Letchworth State Park (the "Grand Canyon of the East"),
- old growth forests of Allegany,
- islands of the St. Lawrence and Hudson Rivers,
- cliffs at Minnewaska and John Boyd Thacher State Parks, and
- the sandy beaches of Long Island.

State Historic Parks and Sites

The State's historic parks and sites seek to interpret the history of the State from 10,000 BCE, when the first people arrived, to the recent past. The State historic site system began in 1850, with the acquisition of General George Washington's headquarters, which he occupied near the end of the Revolutionary War. Now known as Washington's Headquarters State Historic Site, this Dutch stone house overlooking the Hudson River near Newburgh was the first publicly owned historic site in the country. This acquisition was the genesis of the State historic site system, which grew incrementally over the years, but always with the intent to preserve important places in the state's history.

From military forts and encampments, to Native American villages and the great estates of New York's prominent industrialists, these places offer a real-life glimpse into history, as well as opportunities for leisure and educational experiences that enlighten and enrich visitors. Historic sites are also community anchors that help stabilize neighborhoods and promote investment and economic development in their regions.

Linear Parks in NYS

- Niagara Scenic Parkway Trail
- Niagara Gorge Rim Trail/River Greenway Trail
- West River Shoreline Trail (opened in 2018, former West River Parkway)
- Genesee Valley Greenway
- Catharine Valley Trail
- Black Diamond Trail
- Black River Trail
- Washington County Rail Trail/Slate Valley Rail Trail
- Walkway Over the Hudson State Historic Park
- Old Croton Aqueduct State Historic Park
- Harlem Valley Rail Trail
- Trail View State Park
- Mohawk-Hudson Bike-Hike Trail
- Old Erie Canal State Historic Park



Erie Canal

Heritage Areas

The **NYS Heritage Area** system is a state-local partnership established to promote special areas of significance in NYS. Nineteen State Heritage Areas (and four National Heritage Areas) have been identified. From the Great Lakes to the eastern tip of Long Island, the Heritage Areas encompass some of the state's most significant natural, historic, and cultural resources, as well as the people and programs that keep them vital. The Heritage Areas interpret and highlight significant themes in state history, including Native American culture, colonization, military history, industrialization, transportation, agriculture, invention, architecture, engineering, social reform, African American culture, immigration, landscape and maritime history.

NYS is also home to hundreds of historic sites, museums and cultural centers operated by nonprofit organizations that interpret many aspects of state history. More than 500 destinations with natural and cultural visitor attractions and educational resources have been systematically identified, and many have been incorporated into regional tourism initiatives.

Linear Parks

Beyond providing communities with access to nature, linear parks offer all-season recreation opportunities, including hiking, jogging, biking, snowshoeing and cross-country skiing. Linear parks can be found from Long Island's Trail View State Park—a 7.4 mile link between State Parks in Cold Spring Harbor and Bethpage—to the Finger Lakes, where the Black Diamond Trail offers woodland and pastoral views of rural Tompkins County, and vistas across Cayuga Lake. OPRHP administers 14 linear parks that have been developed on former railroad beds, (the Black River Trail in Jefferson County); on canal towpaths, (Old Erie Canal State Historic Park), and on former utility corridors (Old Croton Aqueduct State Historic Park). Linear parks such as these form a major portion of the backbone of the statewide trail system.

Parkways

The State's parkway system originated in the first half of the 20th century as a series of four-lane, 25 mph roads—then considered high-speed—designed to provide scenic routes from New York City. The first was the Bronx River Parkway, in 1908. Beginning in the 1930s, urban planner Robert Moses greatly expanded the parkway system to provide downstate residents with access to upstate parks, completing the Ocean, Meadowbrook, and Bethpage State Parkways, among others. Most of these parkways have been redesigned to accommodate higher speeds and greater capacity than was initially envisioned. Today, aside from a few idiosyncrasies such as narrow shoulders and curbs, they closely resemble highways built in other parts of the country. With strong interest in the State in providing alternatives to driving cars, some are now being converted to non-vehicular use. Most NYS parkways are owned by OPRHP and managed by the NYS Department of Transportation.

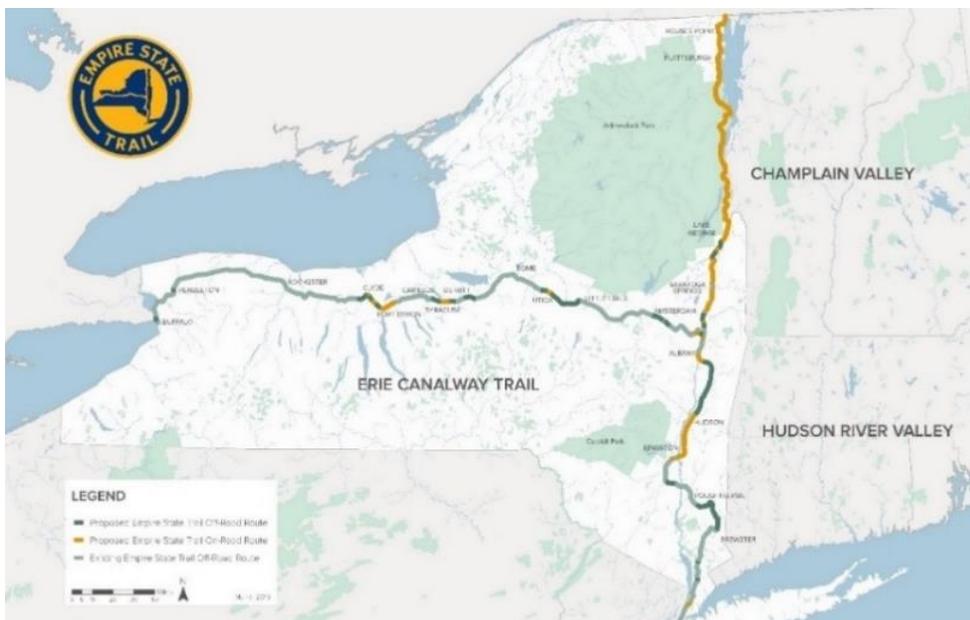
Empire State Trail System (EST)

A 750-mile public multi-use trailway route is being developed that will run from New York City to Canada. The EST will wind north through the Hudson and Champlain Valleys, and west along the Mohawk River and Erie Canals. Once completed, in 2020, the EST will be the longest state multi-use trail in the U.S.

The first phase will unite two existing segments—the Hudson River Valley Greenway Trail and the Erie Canalway Trail, which will serve as a backbone of the overall system. Weaving together existing and planned trails, the EST will link the Hudson Highlands, the Southern Tier, the Great Lakes, and the Catskill and Adirondack Parks. Primary goals for the creation of the trailway system include:

- connecting residents and visitors to the state’s natural, historic, and cultural treasures;
- promoting healthy lifestyles by providing safe and enjoyable outdoor recreational opportunities for all ages and physical abilities;
- supporting regional economic development strategies by providing recreational and history-based tourism opportunities;
- helping to develop a nonmotorized transportation network, providing local and regional transportation options and contributing to the development of Complete Streets design in NYS.

The trail surface and improvements will be compliant with the Americans with Disabilities Act, providing accessibility to older visitors and users with mobility challenges. Annual trail user estimates have been developed for eightyone (81) points along the EST; visitation for the entire 750-mile system is projected to be approximately 8.6 million trail users annually.



Above: A segment of the Empire State Trail will pass through the scenic Hudson River Valley National Heritage Area.

Left: Route map showing the trail alignment

NYS Water Trails

Over the past 25 years, numerous water trails have been developed throughout NYS, which currently has nearly 1,900 miles of operational water trail, 1,750 miles of which are interconnected. Two of the first nine National Water Trails designated by the U.S. Department of Interior were the Hudson River Greenway Water Trail (256 miles) and the Bronx River Water Trail (8 miles).

One international and three interstate water trails: Crossing into Quebec, the Northern Forest Canoe Trail (147 miles in NYS), from the Adirondacks to Maine. The Lake Champlain Paddlers' Trail (120 miles) from Whitehall to the Canadian border, is shared with Vermont. The Delaware River Water Trail (75 miles in NYS), from Hancock, NY to Trenton, New Jersey.

The NYS Canalway Water Trail: (450 miles) consists of the Erie, Champlain, Oswego and Cayuga-Seneca Canals;

Other water trails: the NYC Water Trail (160 square miles); the South Shore Blueway (Long Island).

Under development: water trails on the Susquehanna River (beginning in Cooperstown; ending in Chesapeake Bay); a number in the Finger Lakes, on the St. Lawrence River and Lake Ontario; on Lake George, and coastal Long Island, and on the Wallkill River.



A three-day, 90-mile canoe race, the Adirondack Canoe Classic, follows a historic canoe route from Old Forge to Saranac Lake.

Empire State Water Trail System

In 2019, the Governor announced the creation of the Empire State Water Trail, linking together over 1,700 miles of interconnected, operating water trails across the state.

Water trails are both a very old and a very new concept. In NYS, the first water trails were canoe routes established in the late 1800s by trappers and hunters in the Adirondacks. In the early 1990s, modern-day water trails began to gain national attention. Today, water trails can be defined as a “recreational waterway on a river, lake, or ocean between specific points, containing access points and day use and camping sites for the boating public.”

Water trails differ from blueways, which are community-based revitalization efforts generally focused on an entire waterfront. According to **Parks and Trails NY**, water trails are “similar to land trails in that they host a constant flux of outdoor adventure seekers—kayakers, canoeists and other forms of non-motorized boaters—and come in a variety of shapes and sizes to accommodate paddlers of all different skill levels. They offer a fun alternative to walking, cycling, and hiking.”

Benefits from water trails are similar to that of any outdoor recreation resource, offering users the opportunity to enjoy nature, lead healthier lifestyles, and learn about history. Trails also support local businesses, bringing people to outfitters, shops and restaurants along the route. When the Hudson River Greenway Water Trail was first conceived, for instance, there was just one outfitter on the Hudson River south of the Troy Dam—now there are at least thirteen.

Water trails also promote stewardship of the state’s water resources; clean water, and a litter-free environment are crucial to attracting use. Also, since water trails often pass through multiple communities and regions, both urban and rural settings, and public and privately-owned lands, they foster partnerships, both within and outside the State.

OPRHP Nature and Visitor Centers

New York's State Parks are home to 30 nature centers and museums offering diverse environmental education programs for children, families, adults, and school groups. These centers are located at OPRHP regions across the state, including:

Allegany Region—Red House Natural History Museum at Allegany State Park

Niagara Region—Beaver Island Nature Center

Central Region—Nature Center at Clark Reservation State Park

Genesee Region—Humphrey Nature Center at Letchworth State Park

Long Island—Nature Museum at Caleb Smith State Park Preserve

New York City—Clay Pit Ponds Interpretive Center

Palisades Region—Trailside Museums and Zoo at Bear Mountain State Park

Saratoga/Capital Region—Creekside Classroom Environmental Education Center at Saratoga Spa State Park

Taconic Region—Taconic Outdoor Education Center at Fahnestock State Park

Thousand Islands Region—Nature Center at Robert Moses State Park

Marine Parks and Boat Launches

New York State offers an abundance of scenic waterways for boaters to enjoy, including the Atlantic Ocean, Long Island Sound, the Hudson and St. Lawrence Rivers, Adirondack lakes, the NYS Barge Canal, the Finger Lakes, Great Lakes, and hundreds of other streams, lakes and rivers. Boaters have many opportunities to escape on a serene canal cruise, fish a favorite cove, or embark on a family adventure to explore new waters, all while experiencing first-hand the state's natural beauty.

Nature Centers

OPRHP's nature and visitor centers serve many and varied functions. They are used as classroom space for school or scouting groups, as formal or informal meeting spaces for Friends Groups or other community-based organizations, and house lending libraries and natural history collections used for education and interpretive programming. They also provide a space for parks to house and distribute outdoor gear such as snowshoes, cross country skis, bikes and kayaks.

Nature/visitor centers are a hub of activity in their parks, often the home base for large parkwide programs like First Day Hikes, I Love My Park Day and specific park events like 5K races and seasonal events. OPRHP is working diligently to maintain and grow these valuable resources.

Other Recreational Facilities

OPRHP owns parkland that is managed by other entities such as friends' groups, municipalities, or specially designated commissions. For example, the 3,300-acre Albany Pine Bush Preserve in Albany County is jointly owned by OPRHP, DEC, the City of Albany, and the towns of Guilderland and Colonie. It is managed by the Albany Pine Bush Preserve Commission.



Pitch Pine Scrub Oak Barrens of the Albany Pine Bush Preserve, where visitors can see a globally rare ecosystem in New York's Capital District.

DEC Management Areas

The DEC administers nearly five million acres of land, including:

- **Forest Preserve**—three million acres
- **State Forest**—approximately 784,500 acres
- **Wildlife Management Areas**—nearly 200,000 acres
- **Conservation Easements**—more than 907,000 acres
- **Public Fishing Rights Easements**—approximately 1,300 miles

Other facilities under DEC's jurisdiction include:

- 12 fish hatcheries,
- 400+ boat launch and fishing access sites,
- Three Submerged Heritage preserves,
- 132 accessible sites (including campsites, fishing piers, trails, horse mounts),
- 55+ campgrounds and day-use areas,
- +/-1700 primitive campsites,
- 300+ lean-tos, several environmental education centers and summer camps,
- 5,000+ miles of hiking trails on Forest Preserve lands in the Adirondack and Catskill Parks, State Forests, Wildlife Management Areas, and Unique Areas.

Department of Environmental Conservation

DEC's mission is to conserve, improve and protect New York's natural resources and environment, and to prevent, abate and control water, land and air pollution, in order to enhance the health, safety and welfare of the people of the state and their overall economic and social well-being. This means that DEC has a dual purpose of both land management and environmental regulation. In its management capacity, DEC oversees the Adirondack and Catskill Forest Preserves, the State Forests, Wildlife Management Areas, State Nature and Historical Preserves and facilities, and land areas that support fish and wildlife programs, environmental education centers, and camps.

Lands and Forests

The Division of Lands and Forests manages nearly five million acres of public lands and conservation easements across New York State. This includes the Forest Preserve in the Adirondack and Catskill Parks; State Forests which include Unique Areas, Reforestation Areas, Multiple Use Areas and the State Nature and Historical Preserve; and more than 900,000 acres of conservation easement lands. The Division of Lands and Forests is responsible for the management, protection and recreational use of these lands, the care of the people who use these lands and the acquisition of additional lands to conserve unique and significant resources.

Lands and Forests provides leadership in forestry and forest management on public and private lands. The Division of Lands and Forests is a leading force in invasive species management statewide with a focus on early detection and rapid response.

Forest Preserve

Of the 4.8 million acres of DEC-managed land, nearly three million acres, or 61%, are classified as **Forest Preserve**. With over 2.6 million acres in the Adirondack Forest Preserve and over 287,000 acres within the Catskill Forest Preserve, these lands represent a majority of all State-owned property within the Adirondack and Catskill Parks. These two parks were established by the NYS legislature near the turn of the 20th century, originally including only State-owned Forest Preserve land. In 1912, the description of each park was revised to include *all* lands, both public and private, within what was termed "the Blue Line"— as blue is the color used on State maps to delineate the two parks. The term is still used today.

Protected as "forever wild" by Article XIV of the NYS Constitution, NYS Forest Preserve lands have "exceptional scenic, recreational, and ecological value." Rugged mountains, remote lakes, millions of acres of unfragmented forests, and nearly 2,000 miles of trails provide resources for recreation within a variety of plant and wildlife habitats. Lands within New York's Forest Preserve are rich in both recreational opportunity and ecological significance.

These public lands, which range from remote backcountry to DEC-operated campgrounds, include more than 1,800 miles of marked trails available for people of all interests and abilities. Depending on park-wide land classifications and specific unit management plans, there are a variety of opportunities for public enjoyment of the Forest Preserve, including hiking, camping, paddling, hunting, fishing, trapping, snowmobiling, skiing, mountain biking, and rock climbing.

Adirondack Park

The Adirondack Park is a six-million-acre patchwork of public and private lands located in northeastern New York and roughly corresponding with the boundary of the Adirondack Mountains. The Park was designated in 1892 to protect the region from uncontrolled forest clearing that was common during the 1800s. Today the Park is the largest publicly protected area in the contiguous United States, greater in size than Yellowstone, Everglades, Glacier, and Grand Canyon National Park combined. Nearly half of that land belongs to the people of New York State and is managed by DEC; the remaining half is private land including settlements, farms, timber lands, businesses, homes, and camps. Land use and development within the Park is regulated by the Adirondack Park Agency.

Catskill Park

A mountainous region in New York's Ulster, Greene, Delaware and Sullivan Counties, the Catskill Park was established by statute in 1904 with 576,126 acres, since enlarged to 705,500 acres. Like the Adirondack Park, the Catskill Park includes both public and private lands: however, its administration differs from the Adirondack Park's. Within the Park, the NYS Bureau of Forest Preserve Management and Conservation Easements is responsible for management and administration of 287,500 acres of State land, which comprises the Catskill Forest Preserve.

Public lands in the Catskill Park are primarily forested, but also include meadows, lakes, rivers, wetlands, waterfalls, cliffs, and many species of fish, wildlife, and plant life. With constitutional protections that prevent the removal of timber, lands within NYS Forest Preserve areas provide both recreational opportunities and a range of plant and wildlife habitat. Opportunities for public enjoyment of the Forest Preserve include hiking, camping, hunting, fishing, skiing, mountain biking, rock climbing, canoeing, and snowmobiling, as well as more passive recreational activities.

State Nature and Historical Preserve

Outside the Forest Preserve counties, the State Nature and Historic Preserves consist of 313 designated properties noted as having exceptional beauty, wilderness character, or geological, ecological or historical significance. Vischer Ferry Nature and Historic Preserve, located along the Mohawk River, is a natural area and historic place with more than 700 acres of wetlands, floodplain, and special bird and amphibian habitats. This linear greenway includes national historic treasures including two Erie Canal towpath trails, and other historic canal infrastructure, as well as an abundance of nature trails. The site is designated both a Bird Conservation Area (DEC) and Important Bird Area (Audubon NY), where more than 200 bird species have been observed.



Forested areas in NYS of five acres and greater, shown in green.

State Forests

“State Forest” is a generic term for the more than 780,000 acres of DEC-administered lands outside the Adirondack and Catskill Parks and under the direction of the Division of Lands and Forests. There are approximately 480 State Forest areas, ranging from 100 acres to 9,000 acres, that are generally classified as Reforestation Areas, Unique Areas, and Multiple Use Areas.



Reinstein Woods Nature Preserve, a 292-acre forested complex near the City of Buffalo, includes wetlands and ponds within a developed suburban area. (Photo: DEC)

The State Reforestation Law of 1929 and the Hewitt Amendment of 1931 authorized DEC to acquire land for reforestation, which make up approximately 85% of State Forest lands. These areas are to be forever devoted to “reforestation and the establishment and maintenance thereon of forests for watershed protection, the production of timber, and for recreation and kindred purposes” (Article 9, Title 5, Environmental Conservation Law).

State Forests are “working forests,” offering a variety of resources, products and experiences. Demand for recreational use of State Forests has increased substantially in recent years, and snowmobiling, horseback riding, hunting, and fishing, hang gliding, picnicking, cross-country skiing, bird-watching, and hiking are now a major component of State Forest plans. More than 2,000,000 person-days of hunting occur at State Forests annually and approximately 570,000 person-days for freshwater fishing at the lakes, ponds and streams.

NYS State Forests also contain unique features of interest. Rare and endangered plant communities provide the recreational naturalist with the opportunity to observe specialized habitats, and cultural resources such as old homesteads, cemeteries, and historical Native American sites can provide notable experiences for visitors. Unique habitats such as the pine barrens in Long Island or the oak savanna in Monroe County, also provide land managers the challenge of their restoration and perpetuation.

Fish and Wildlife

New York is characterized by a mix of landscapes and habitats with abundant fish and wildlife. Varied habitats for people to enjoy fish and wildlife are available, from Long Island’s oceanfront beaches to the 5,344-foot summit of Mt. Marcy, in the Adirondack High Peaks. Native brook trout and the State trout stocking program attract people to small mountain streams or anglers can fish for migratory striped bass from Montauk’s marine waters, up the Hudson River to Troy. The Great Lakes offer trophy-size Coho salmon, and black bass fishing tournaments. Big game hunting is popular in both the Northern and Southern Zones, each offering different hunting experiences.



Campers Fishing (Photo: DEC)

Wildlife Resources

The state’s diversity of wildlife makes a unique contribution to recreation. Recreation resources are often seen as site-specific; habitat and wildlife, however are independent of property boundaries. As a recreation resource, wildlife is therefore viewed in terms of species and populations, rather than in acreage or sites. In the U.S., jurisdiction over wildlife does not correspond to ownership of real property but is vested in the people of each state. In NYS, DEC acts as a steward of the people’s wildlife. Migratory species are under the authority of the federal government; DEC and analogous agencies in other states are major participants and cooperators. The table in Appendix C identifies recreational values for various species, which provides a framework for the variety of wildlife-related recreation in NYS. It is important to recognize however, that many ecological distinctions determine the distribution of wildlife, and opportunities for associated recreation. This data provides only a sampling; the actual variety is much greater.

DEC's Wildlife Program

The mission of DEC's Wildlife Program is to provide the people of New York with the opportunity to enjoy all the benefits of the State's wildlife resources, now and in the future. This mission is embodied in five broad goals:

- to assure that populations of all wildlife are of appropriate size to meet all the demands placed on them;
- (2) to assure the public desire for information is met and to obtain public input into management decisions;
- (3) to provide sustainable uses of wildlife for an informed public;
- (4) to minimize the damage caused by wildlife and wildlife users; and,
- (5) to foster and maintain an organization that efficiently achieves these goals.

Recreation is one of the major aspects of DEC's wildlife program. Achievement of appropriate wildlife population sizes, meeting desires for varying uses, and exchanging information with the public are the goals most closely related to recreation.

Current Resources

Rare species occur in various places in NYS. Encounters with known rare species are most likely to occur in the Adirondacks, in the coastal lowlands of Long Island and New York City, the Hudson Valley, and the Catskills. Species such as the bald eagle, the osprey and the peregrine falcon have increased in numbers and distribution in recent years, stimulating significant recreational interest.

The many waterways and bays in and around New York City include the Hudson River, the East River, Long Island Sound, Great South Bay and others along the south shore of Long Island, the upper and lower New York City bays, the Jamaica Bay Refuge, the Arthur Kill and the Kill Van Kull. These provide city and suburban residents with viewing pleasure for bird species that include gulls, terns, cormorants, herons, waterfowl and other water dependent birds.

The Adirondacks and the Catskills offer abundant wildlife observation, hunting and trapping in wilderness or wild forest settings unique from the rest of the state. Animal life in the Adirondacks in particular differs from the rest of the state, with boreal ecosystems that include a small, seemingly stable, moose population (a viable moose population has wildlife observation and tourism values and might eventually provide limited hunting). Less common species such as spruce grouse, Canada jay, three-toed and black-backed woodpeckers, and loons also contribute to an enjoyable wilderness experience.

The shores and plains south and east of Lake Ontario and along the St. Lawrence River are a destination for those who seek wetland wildlife. Major wetland complexes, such as the Montezuma Wildlife Refuge between Syracuse and Rochester, and the Iroquois-Oak Orchard-Tonawanda area, between Rochester and Buffalo are home to varied wetland wildlife. Similar concentrations are found in the Champlain and Hudson River Valleys, and along the coast of Long Island.

Wildlife recreationists and hunters will find bear throughout upstate, as populations have expanded in the Adirondacks, the Catskills and the Allegheny Plateau. Wild turkey populations have been reestablished across much of NYS, and deer are plentiful, with the highest likelihood of hunting success in western, central and eastern NYS south of the Adirondacks. Songbirds, squirrels and cottontails may be found in backyards, neighborhood parks and along roads and trailways, contributing to the quality of everyday life.





Sterling Forest State Park

The existence of wildlife enhances everyday living, working, and traveling, in both direct and indirect ways. In general, humans find pleasure in observing, photographing, and studying wildlife. Although they may never have direct contact with them, many get satisfaction from knowing that species such as loons, moose and bears still exist in places like the Adirondack Park.

While camping, hiking, walking, skiing, or engaged in other outdoor activities, people often encounter wildlife and eventually come to expect it. In some parts of NYS, access to natural areas is declining or severely limited and, in some cases, political and legal challenges exist. For the public to continue to experience wildlife for recreation, an abundant and diverse wildlife population that includes endangered, threatened and rare species, must be protected and restored.

To promote public use of wildlife resources on private lands, wildlife recreationists need to understand and practice standards of ethics, courtesy and safety. Training and educational programs help promote understanding and develop skills. Income, education level, health, and urban, suburban, or rural living are all factors that can influence the public's involvement with wildlife. To engage all of the public, programs that develop skills and offer wildlife recreational experiences for potential users are needed. DEC is committed to effective and comprehensive outreach about its wildlife programs, and to providing wildlife-related recreation opportunities. Efforts to recruit, retain and reactivate hunters, anglers, trappers and wildlife observers are a priority focus in the Agency's efforts to reconnect people to nature.

Wildlife Managements Areas (WMA)

The DEC Division of Fish and Wildlife manages more than 115 WMAs, nearly 197,000 acres, including 124,000 acres of forests and grasslands and 53,000 acres of wetland. The WMA program is part of a long-term effort to provide permanent access to NYS lands and ensure the protection and promotion of fish and wildlife resources. Beginning in the early 1900s with the acquisition of abandoned farm lands and fields, DEC (and its predecessor, the NYS Conservation Department), worked with federal and state governments, and with sportsmen and women, to secure these lands for public use.

A combination of State and federal funding has been used to acquire WMA lands. Established in 1925, the Conservation Fund was the first dependable source, followed by the Federal Resettlement Administration, in the 1930s, which bought marginal and worn-out farmland and later donated it to the State for wildlife management and use. Today, the Pittman-Robertson Act also provides federal funding, from an excise tax on guns and ammunition which supports restoration and management efforts for wildlife. In 1984, the USFWS Wallop-Breaux Amendment captured motorboat fuel excise taxes to provide boaters with new and improved docks and piers, wetlands conservation and boating safety programs, among many other boating and fishing initiatives. NYS Bond Acts in 1960, 1972 and 1986 have also helped expand the WMA system, providing unique areas where the public can interact with a wide variety of wildlife species. NYS residents have also helped acquire a large portion of the WMAs through license fees and the federal tax on guns and ammunition.

Primary activities on many WMAs are fishing, hunting, trapping and bird watching. Most also provide the opportunity for hiking, cross-country skiing, or just enjoying nature. WMAs also provide the opportunity for wildlife research. A grouse study conducted at the Connecticut Hill WMA is considered the standard reference on ruffed grouse in the northeast U.S. Habitat management methods and techniques such as controlled burns, wildlife food plots have also been established and refined on WMAs. DEC's **Young Forest Initiative** aims to increase "young forest" habitat on WMAs. (While mature forests are home to certain species, others need young forests.) Declining species such as the Golden-winged Warbler and New England cottontail, benefit from younger growth habitat, as do popular game species like American Woodcock and Ruffed Grouse.

Fisheries

The state's freshwater resources provide recreational fishing benefits to nearly one million licensed anglers, who enjoy more than 20 million fishing trips each year. Hundreds of thousands of young people under age 16 are also introduced to fishing activities without any licensing requirements. Four million acres of lakes and ponds, and 70,000 miles of rivers and streams support abundant and diverse fish populations, offering a broad range of recreational options. Trophy-size salmon, muskellunge and striped bass are available in Lake Ontario, the St. Lawrence River and the Hudson River respectively. Many waters across the state provide trout, walleye, bass and northern pike fishing of a quality that is notable nationwide, while excellent panfish stocks provide sport to all levels of angling expertise.

The state also offers quality experiences for varying angling techniques and preferences. Options include boat trolling for salmon, pond fishing in remote areas for native brook trout, wading in 15,000 miles of stream for trout, and over 50,000 miles of warm-water streams and rivers for shore fishing for smallmouth bass. The state has thousands of lakes and ponds that offer many species of game and panfish via ice fishing, shore fishing, rowboat, bass-boat and cabin cruiser access. DEC's overall fisheries program mission is to maintain the quantity and quality of the state's fisheries resources—and their recreational benefits—for future generations.

Operations

As the centralized support service unit for DEC, the Division of Operations designs, builds, operates and maintains DEC's infrastructure. Engineering and technical functions are consolidated in the Central Office in Albany, while day-to-day operating and maintenance services are provided through regionalized staff. DEC's infrastructure consists of more than 1900 geographically dispersed facilities spread across more than four million acres. This infrastructure includes: boat launch sites, game farms, offices, wildlife areas, flood protection facilities, education centers, fish hatcheries, campgrounds, summer residential camps for children and many more.



Wilmington Notch Campground and Day Use Area is located beside the Ausable River and accommodates fishermen looking to challenge the rapids in search of a great catch.

Campgrounds

DEC operates 52 campgrounds located in the Adirondack and Catskill Parks that provide a wide variety of experiences including island camping, tent and trailer camping, boat launching facilities, hiking trails, beaches, and day use areas with picnic tables and grills. Campgrounds and day use areas are critically important elements of the recreation-based tourism opportunities in both Parks. DEC works in coordination with OPRHP in administering the NYS campground reservation system. Most DEC campgrounds also have day use areas for the public to enjoy. DEC also operates four day-use-only areas in the Adirondacks that offer picnicking and/or swimming facilities. Pets are prohibited at all DEC day use areas.



DEC residential youth camps combine environmental education and outdoor recreation using a fun, hands-on approach to teach outdoor skills including fishing, backpacking, camping and canoeing (Photo: DEC).

Education

DEC's environmental educators conduct outdoor education and interpretation programs across the state. The overall goal is to encourage natural resource stewardship, through programs that give children and adults hands-on contact with nature. These efforts are multiplied via partnering organizations and volunteers; special emphasis is on training educators to conduct environmental learning activities with their students.

Environmental Education Centers

DEC's four environmental education centers are Stony Kill Farm (Dutchess County), Five Rivers (Albany County), Rogers (Chenango County) and Reinstein Woods Nature Preserve (Erie County). All have interpreted nature trails, exhibits, and on-site programs for schools and the public, as well as off-site programs for schools, community groups and environmental organizations. Each center has an active friends' group and engages their communities in volunteer activities and citizen science projects. In 2010, Stony Kill Farm and Rogers lost their DEC education staff due to the State's fiscal situation and are now operated by their friends' groups under agreements with DEC.

Summer Residential Youth Camps

DEC's residential summer camp program began in 1947 as a conservation camp for boys. Today the program welcomes more than 1,350 participants, ages 11 through 17, for broad-ranging environmental education programs. Four camps—two in the Adirondacks (Pack Forest and Colby), one in the Catskills (DeBruce), and one in Western New York (Rushford)—operate for seven weeks each summer. Pack Forest offers an additional Outdoor Adventure Week for 14- to 17-year-olds, which focuses on field studies, outdoor recreation skills development and careers in natural resources. All camps offer fishing, camping and hiking that help foster a life-long interest in outdoor recreation activities. Approximately five percent of the campers receive scholarships, called camperships, the majority from low income and minority urban communities. Prior to attending camp, DEC's Bureau of Environmental Education staff work with community-based organizations to provide youth in Buffalo, Albany and New York City with outdoor education and recreation experiences as part of the Campership Diversity Program. Participating youth receive free transportation to and from the camps.



Surf casting, Montauk, Long Island

Regional Educators

Regional environmental educators in Long Island, NYC, the Hudson Valley, and central NYS train educators in environmental issues, concepts, and actions, and methods for incorporating STEM (science, technology, engineering and math) into class curricula. They also provide programs for schools, community groups and youth-serving organizations and participate in fishing clinics, fairs, and festivals in local communities. Environmental educators with the Hudson River Estuary Program offer place-based lessons using research data to convey current issues and topics concerning the Hudson. DEC's regional environmental education efforts generally focus on environmental justice areas and underserved communities.

Training

National environmental education programs, such as Project WILD, Project WET (Water Education for Teachers) and Project Learning Tree, are the cornerstones of DEC's curriculum workshops for teachers and youth-group leaders. These programs address conservation and stewardship of our natural resources. For every classroom teacher trained to use the materials, 20 to 30 students are impacted. Environmental educators also partner with colleges and universities to provide pre-service teachers the skills and knowledge to incorporate environmental science into their lesson plans as they enter the teaching profession.

Adirondack Park Agency (APA)

Created in 1971 by NYS law, the APA is responsible for protecting Forest Preserve lands and overseeing development proposals for the privately-owned lands within the “Blue Line.” Legislation defined the makeup and functions of the APA, and authorized the Agency to develop two plans for lands within its borders: the **Adirondack Park Land Use and Development Plan**, which regulates land use and development on the approximately 3.2 million acres of privately owned lands in the Adirondack Park, and the **Adirondack Park State Land Master Plan (APSLMP)**, which establishes guidelines for DEC management of the remaining 2.8 million acres of public lands. Protecting the park’s outstanding natural resources governs its recreational use, and the APSLMP focuses on the natural resource capacity rather than user demand. This reflects not only the importance of the Adirondack Park to the state, but also its national and international significance.

Together, the APA and DEC create plans to improve recreational opportunities in the Park. Unit Management Plans have been created for specific areas, such as popular public campgrounds and remote, less-used wilderness areas. Going forward, a primary objective of APA is to work with DEC to develop a sub-regional planning approach to broaden both “front country” and “back country” recreational opportunities. Expanded recreation will be balanced with natural resource protection, balancing motorized and non-motorized uses, and strengthening connections to communities.

The APA also administers the State’s **Wild, Scenic and Recreational Rivers System Act** for private lands adjacent to designated rivers in the Park, and the State’s **Freshwater Wetlands Act** within the Park. APA operates an interpretive center, which serves as the Agency’s environmental education and traveler orientation center.



View from Moxham Mountain, Adirondack Park (Photo: APA)

Canal Corporation

Administered by the NYS Canal Corporation, the 524-mile NYS Canal System is a navigable, 524-mile inland waterway that includes four historic canals: the Erie, Champlain, Oswego and Cayuga-Seneca. The system includes sections of the Hudson and Mohawk Rivers system and links the Great Lakes, the Finger Lakes and Lake Champlain. Five large lakes (Oneida, Onondaga, Cross, Cayuga and Seneca) connect to the canal, and short sections at Ithaca and Watkins Glen, feeder reservoirs, and Canal terminals on Lake Champlain. In 2017 the Canal Corps. celebrated the 200th anniversary of the Canal 's groundbreaking, which occurred in the city of Rome, NY on July 4, 1817. More than three-quarters of the 365-mile Erie Canalway Trail, from Buffalo to Albany, is a multi-use trail designed to accommodate pedestrians, bicyclists, and cross-country skiers. In 2017, a design competition titled Reimagine the Canals, which sought innovative ideas to boost local economies, increase recreation and strengthen environmental resilience along the Erie Canal. Two winning entries were awarded \$2.5 million to move their proposals forward.

Office of General Services (OGS)

OGS issues licenses, permits, leases, and easements for underwater lands; grants to other governmental or private entities. It disposes of uplands determined surplus to the needs of the State and provides transfers of jurisdiction for State agencies and local agencies for certain purposes (including recreational uses) subject to special acts of the State legislature. OGS facilitates the transfer of jurisdiction of State lands to county or local governments for listed purposes such as park, recreation and playground areas. These transfers are subject to reversion to the State if these uses are no longer to be pursued. OGS's participation in various programs, such as the Hudson River Valley Greenway and the Heritage Rivers Program, provides the agency the opportunity to advance recreational objectives.

OGS participates in recreational programs by providing local communities with rights to lands underwater, or filled (previously underwater), for connection and access. OGS is a member of the ad-hoc Interagency Committee for Submerged Cultural Resources, whose participants include OPRHP, DEC, the Department of Education (State Museum), DOS's Coastal Management Program, the Attorney General's Office, and the Canal Corporation. This group reviews proposals and issues affecting submerged historic, archeological, and cultural resources, predominantly shipwrecks. The Committee established the first dive preserves, including the Radeaux Land Tortoise in Lake George, a floating gun platform of the French & Indian War, reputed to be North America's oldest intact warship.

Olympic Regional Development Authority (ORDA)

The facilities and venues that ORDA manages and maintains are not just for elite athletes; they're also a vacation destination for winter recreationists of all kinds. The Sports Complex from the 1980 Winter Olympics in Lake Placid has 31 miles of cross-country ski trails that are available to the public for skiing or snowshoeing. ORDA manages and operates ski centers at Gore Mountain in North Creek, Whiteface Mountain in Wilmington, and Belleayre Mountain in the Catskills near Kingston. These facilities generally operate from mid-November to mid-April, when the public can ride a bobsled or try out the luge run. ORDA also offers public skating from December through March on the Speed Skating Oval also used in the 1980 Olympics.



**Gore Mountain, "Upper Steilhang,"
an intermediate-level ski trail in the
Adirondack Mountains**

Others

Various other State agencies manage open space and/or provide recreation programs. The Health Department encourages recreation activities to improve the health of NYS citizens. The NYS Museum offers interpretive facilities, programs and kiosks. The Office for the Aging and Office of Children and Family Services also provides outdoor recreation programs.

CHAPTER 3 – TRENDS, ISSUES, AND NEEDS

A recreation needs assessment has been an important and consistent element of every SCORP published by New York State since 1973. The supply and demand analysis are an essential tool for determining the allocation of resources through the evaluation of grant applications. This analysis also provides an accurate overview of the current condition of recreation in the state. A supply and demand model has been used to integrate both types of data. However, the process of developing the needs assessment has evolved over the last 30 to 40 years. It is important to note that this is just one tool of many that may be used to help recreation providers make effective choices that will successfully meet the state’s recreation needs.

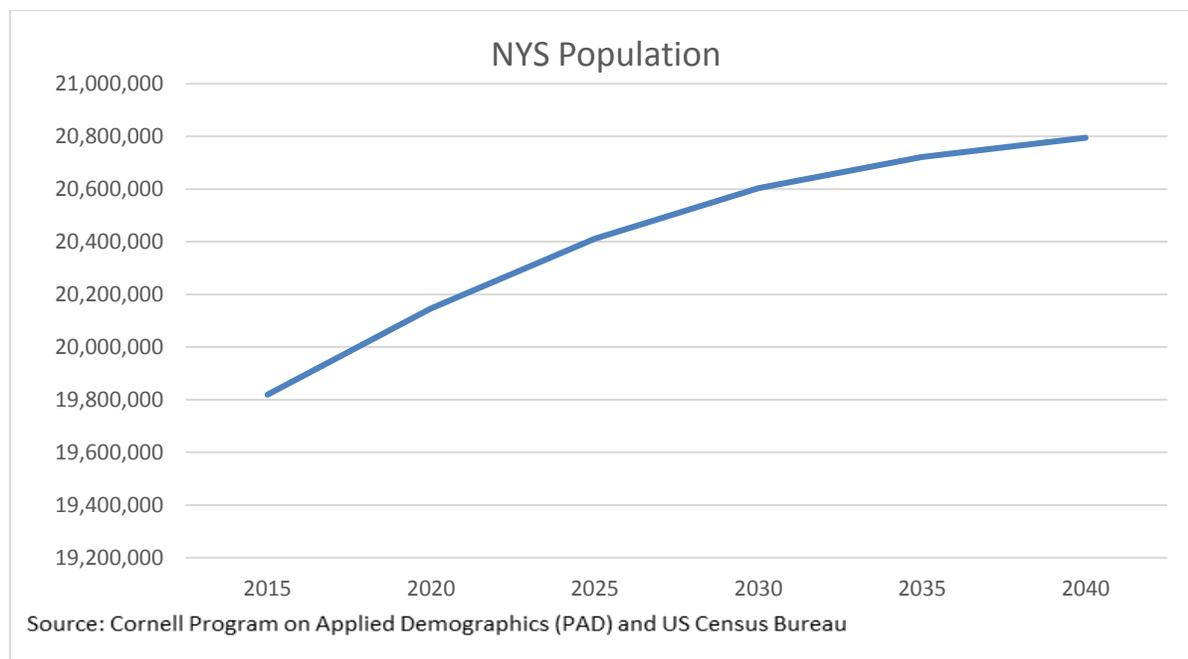
Population Trends

With an estimated 19.5 million residents, New York is the fourth **most populated state** in the country (2018 US Census Bureau). The population is projected to remain fairly level through 2030, when it is estimated to total 19.8 million, a 1.5% increase. Between July 2017 and July 2018, NYS **lost over 48,500 residents**, and over a million residents since the 2010 Census. This net out-migration is keeping population growth to a minimum.

Population rise through 2030 in NYS is primarily attributed to consistent growth projected for all five boroughs of New York City and three upstate counties—Albany, Monroe and Saratoga. Long Island’s population is retracting, with a slight increase in Nassau County off-set by a larger decrease in Suffolk County. The remainder of NYS will have a slight decrease in population, both in absolute numbers and relative to the rest of the State.

Population changes in the State are a result of a large number of immigrants—with a corresponding increase in racial diversity—as well as a net out-migration, especially among younger New Yorkers. An increasing elderly population will emerge, a result of both longer life expectancy and, most significantly, the aging of the baby boomers. The rising senior population means that by **2030, the number of residents over the age of 65** is projected to increase by 30%. These changes, more than the change in total population, will have the greatest impact on recreation patterns. As geographic location determines the types of facilities that are available, population changes will impact the overall patterns of recreation in the State.

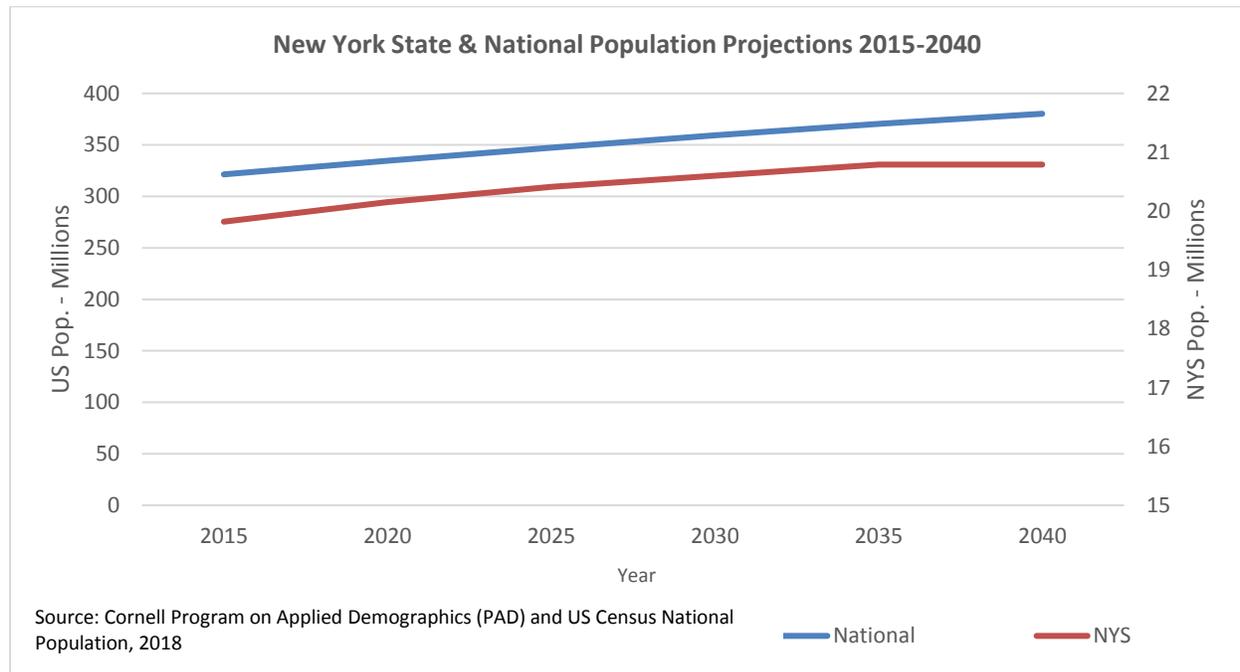
Chart 3.1 – New York State Total Population



Composition of the Population

While the NYS population will increase only marginally over the next twenty years, the composition of this population will differ from what it is today. There will most likely be increased diversity, especially seeing a greater Hispanic and Asian population. These two ethnic groups have had an increase in population in the State between 2010-2017 and continues to grow. Facility design, signage, park programming, and public awareness will need to consider the culturally diverse populations being served.

Chart 3.2 – New York State and National Population to 2040



Roberto Clemente State Park, Bronx, NY



Rollins Pond, Adirondacks

Chart 3.3 – New York State Age 65+

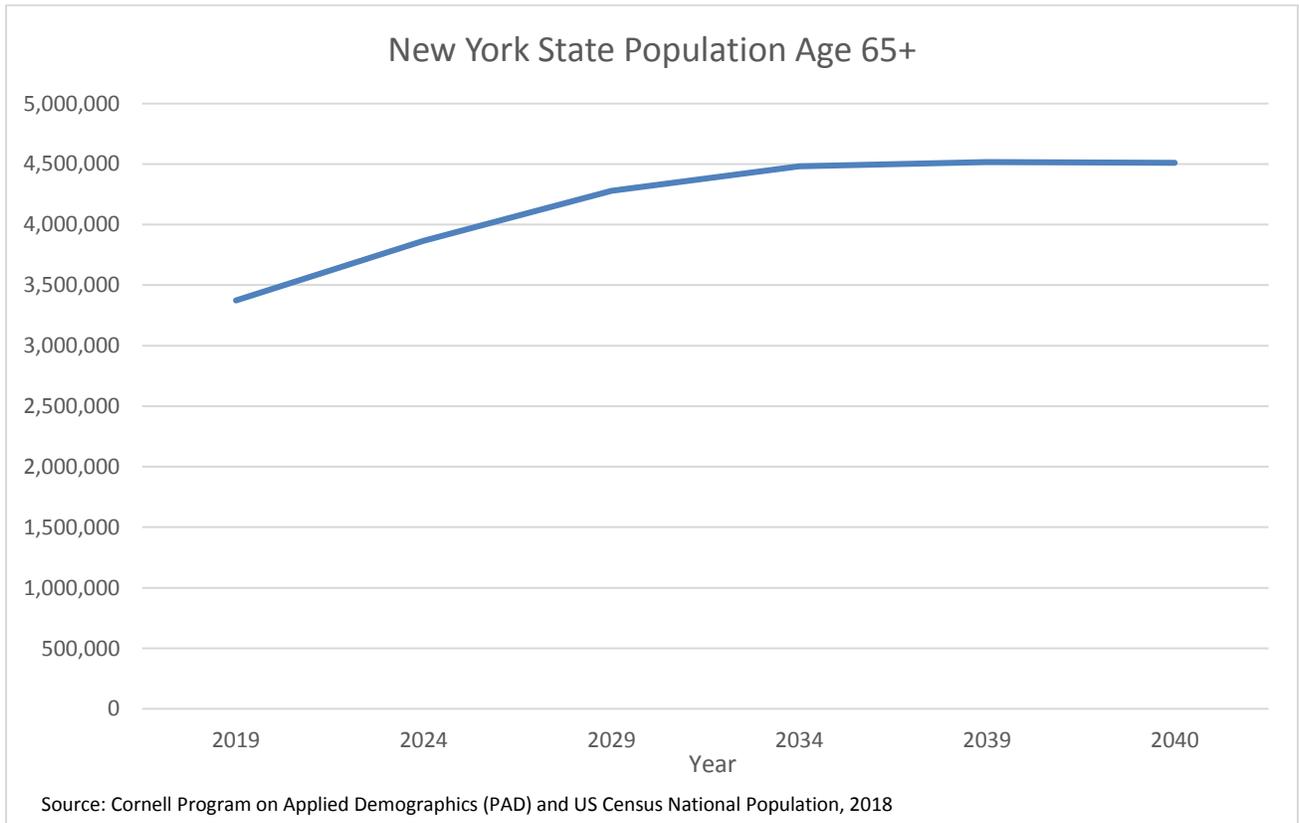


Chart 3.4 – New York State Population Age by Gender 2020 - Cornell PAD

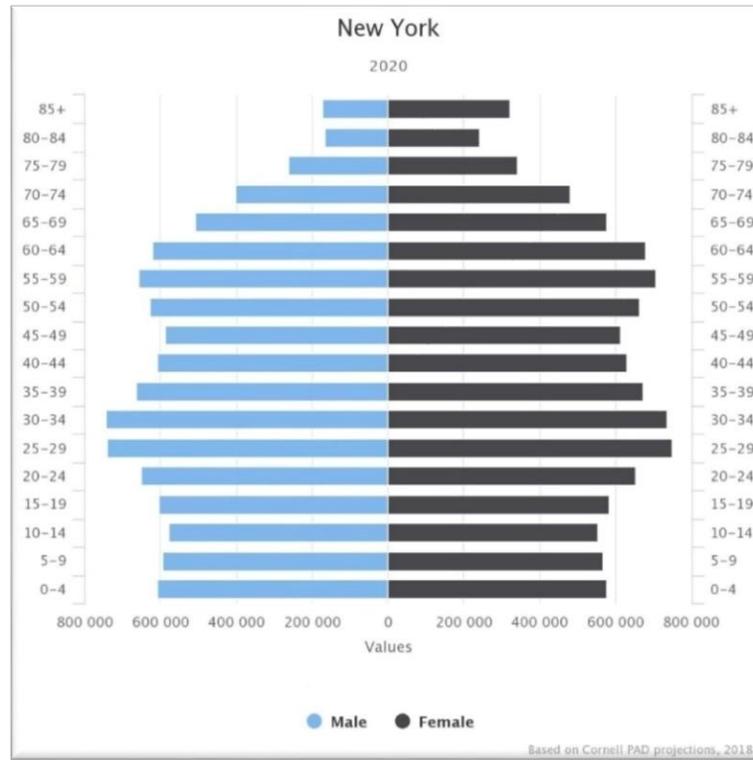
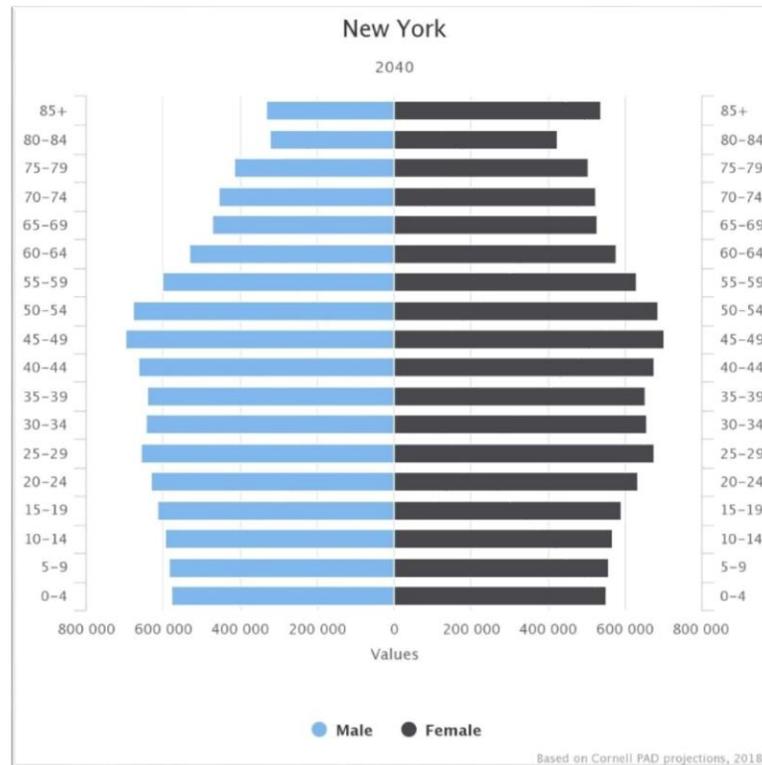


Chart 3.5 – New York State Population Age by Gender 2040 - CORNELL PAD



The Age-Friendly City

Along with other NYS agencies, OPRHP faces the challenge of evolving to serve an aging population. Research shows that to feel safe and comfortable in parks and other open spaces, people over the age of 65 have specific needs. Factors that help make public space more comfortable and inviting as we age include:

- ADA Accessible comfort stations, pavements, curbs and parking;
- options for both passive and active recreation, sun or shade, single or multiple seating;
- small, quieter, contained green spaces within parks;
- seating with both sun and shade along walkways to allow a place to rest;
- priority of access for pedestrians, not cars;
- crossing lights with longer crossing times and a visual “countdown” so pedestrians know how much time they have to cross a road;
- better maintenance and security in public places;
- wayfinding signage with large, visible fonts;
- programming appropriate to the interests and varied capabilities of older adults.

Aging

As more people live longer and more active lives, it becomes increasingly important that their needs are met and that they can continue to be active in their communities. Having access to green spaces is one of the most commonly mentioned age-friendly features. However, in many communities there are barriers that prevent older people from using green spaces.

Although the State’s population will increase slightly over the projected period, the number of senior citizens is increasing at a greater rate. According to the **US Census**, by 2030, adults over age 65 will exceed the number of children in NYS. This will have a dramatic effect on the quantity and types of outdoor recreation taking place statewide.

The baby boom generation (those born from 1946 to 1964) will continue the transition from being the most elderly part of the workforce into retirement. For recreation providers, this means a trend away from activities typically associated with youth: team sports, court games and other highly physical activities. Growth of other activities such as walking, relaxing in the park, swimming, and other modified activities such as pickleball, will allow New Yorkers to recreate on their own terms as they age.

These changes in the State’s population will require OPRHP to adapt. Park attendance is expected to increase. Much of the increase may occur on weekdays when some services are provided free or at reduced cost to park visitors age 62 and older, such as OPRHP’s **Golden Park Program**. An increase in attendance (as any added use of facilities) will increase impacts to the environment and to recreation facility infrastructure. Additionally, to continue to enjoy these facilities and services, an aging population will require that parks have greater adherence to the Americans with Disabilities Act (ADA) standards, and OPRHP staff will require additional training to work with the aged.

The 2018 Public Outdoor Recreation Survey (2018 PORS) results for the most popular activities among New Yorkers age 65 to 85 are shown on Table 3.8. Charts 3.4 and 3.5 show the age/sex breakdown for NYS in the years 2020 and 2040. Again, the most notable change is the movement of the baby boomers, currently 54 to 72 years old.

Executive Order 190

In 2018, the Governor issued **EO 190**, an executive order that directs state agencies to include consideration of the NYS Department of Health’s **NYS Prevention Agenda** priorities, and the **AARP/World Health Organization’s** “eight domains of livability” for age-friendly communities, in federal and state planning and agency policies, procedures, and procurements. The intent of EO 190 is to ensure that the principles of healthy communities are embedded into the fabric of state government—including parks and recreational resources—with a goal of creating communities that support and attract people of all ages.

Youth and Recreation

Children today experience record levels of obesity and preventable diseases like hypertension and Type II Diabetes, caused in part by a decrease in physical activity. Increasing access and using parks programming to encourage children to move more can help improve their health and live longer. The benefits of access to parks are clear:

- Children who live within two-thirds of a mile from a park with a playground are five times more likely to be a healthy weight.
- A 20-minute walk in a park or other natural area can help children with attention deficit hyperactivity disorder focus better.
- Active children show more brain activity, and they are 20 percent more likely to earn an A in English or math.
- Youth living in neighborhoods with multiple recreation and park facilities are more likely to be active five times a week, compared to young people who don't have access to any parks.
- Young people who live in poor or mostly minority neighborhoods are 50% less likely to have a recreation and park facility near their homes.

-- **National Recreation and Park Association**



Youth

Physical inactivity and sedentary behavior are key risk factors associated with childhood obesity and related health problems in most Western countries. Today's youth and teens face a variety of chronic illnesses that have been linked to a lack of activity, poor nutrition and too little time outdoors. Access to parks and recreation programs have been proven to be a key to overcoming these issues and promoting healthy youth.

OPRHP joins with other partners, including the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration, in accepting the National Park Service's Every-Kid-in-a Park pass, which allows free entry for 4th grade students into all New York State Parks in 2018-2019. This program is part of a series of initiatives to encourage youth to visit state parks, historic sites and public lands.

A 2010 **NRPA report** states that: "Youth are valuable resources to invest in and not problems to be solved. Adolescents want to develop their capacities, but they need opportunities and appropriate adult involvement and guidance to do so." This mindset can inform new efforts to engage youth in their local parks. Park and recreation agencies have, for example, begun to sponsor "eSports" tournaments—combining digital gaming with supplemental programming, including physical challenges. For participants, this offers a chance to have fun while engaging in heart-healthy physical activities, as well as for public recreation providers to attract and engage youth. Many resources are also available in NYS for events and information for children and youth with varying abilities.

Another development predicted by NRPA is that some recreation providers will increase their efforts to combat the opioid crisis. Forging stronger partnerships with health departments and nonprofits and developing targeted programming for youth enrolled in out-of-school time programs are two strategies showing promise. Allocating funding for specialized training for staff, and improved park safety measures, may also be required.

Public Health and Parks

Having access to green spaces can reduce health inequalities, improve well-being, and aid in treatment of mental illness. Recent estimates show that physical inactivity linked to communities and neighborhoods with poor walkability, as well as lack of access to recreational areas, accounts for 3.3% of global deaths.

Public open spaces, with their lakes and woodlands, streams and meadows, encourage physical activity and help people relax. The vegetation produces oxygen and filters out harmful air pollution. Seascapes, waterways, and even fountains help moderate air temperature and provide places to cool off. Parks also provide safe routes for walking and cycling, and encourage socialization, providing pleasant spaces to meet friends and family for fun and outdoor recreation.



Tallman State Park, Sparkill, NY

NYS Prevention Agenda

A NYS Department of Health initiative, the NYS Prevention Agenda's goal is to help New Yorkers get healthier and reduce health disparities for racial, ethnic, disability, and low socioeconomic groups. A partnership between more than 100 organizations across the State, the Agenda provides a blueprint for State and local action.

One priority of the Agenda is the development of environments that encourage healthy physical activity. Increasing the number of municipalities that adopt Complete Streets policies, for instance, can create a stronger network of pedestrian, trail and bike routes. Public health can be improved by designing and retrofitting communities in ways that result in safer places to walk and bike. Now in its third cycle, the Agenda is updated by the NYS Public Health and Health Planning Council. In 2018, the updated Prevention Agenda was approved for 2019-2024.

Social Conditions

Although public park and recreation amenities are—in theory—available to all Americans, the continued rise of economic inequality in the U.S. in the last few decades has had a detrimental impact on access to recreational opportunities for poorer Americans. Studies have documented that poorer Americans are less likely to use publicly-funded recreation resources, less likely to travel or spend money on leisure activities and are less likely to visit parks. Further, a **2008 report** on the availability of recreational resources in minority and low socioeconomic status areas found that recreational facilities and resources are not equitably distributed, and that low-income neighborhoods are 4.5 times less likely to have recreational facilities than high-income areas. Improving the quantity, types, and quality of recreational resources available in parks is an important strategy in reducing these disparities.

OPRHP's **Parks 2020 Plan** has prioritized investing in underserved communities and reconnecting a new generation of New Yorkers to park facilities and recreational opportunities. To better serve traditionally overlooked or disadvantaged communities, outdoor recreation providers can emphasize strategies that encourage working with community groups, schools, and other allies. Improving accessibility to recreational facilities and keeping amenities affordable will help everyone feel welcome.

Getting Kids Outdoors

Field trips offer children a chance to experience new places, to move beyond classroom learning, and make important connections with the outdoor world. For many of New York’s public schools, however, finding funding for taking students on field trips can be a challenge.

In 2016, the NYS Legislature recognized the need to support public school field trips and established **Connect Kids Field Trip Grant** (CKFTG), a program to connect school children with both nature and NYS history. The grant refunds up to \$1,000 of field trip costs, including subway and ferry tolls, program and pavilion fees and special attractions. The funding supports field trips to visit state lands managed either by OPRHP or DEC.

Funded through the State’s **Environmental Protection Fund** (EPF), CKFTG was so successful in its first year that it was doubled—to one million dollars—by the Governor in the 2017-2018 state budget, and continued at the same level through 2019-2020. In the program’s first year, over 30,000 school children visited OPRHP and DEC sites that included: taking hiking adventures to the Hadley Mountain Fire Tower in Wilcox Lake Wild Forest, trips to park playgrounds for students that do not have access to playgrounds, and traveling to the Adirondacks, where first graders met real animals and saw habitats that helped bring their classroom studies to life.

In 2017-2018, the program’s second round, close to 78,000 NY school children were able to go on field trips. With over 250 destinations, students

can try snowshoeing, experience NYS history in the places where it happened, and explore dunes, gorges, forests, streams, lakes, trails, and meadows. Activities were also expanded to include ice skating, service learning trips, and working with DEC biologists to learn to fish or help with fish stocking.

OPRHP administers CKFTG in collaboration with DEC, and with nonprofit organizations that operate on State land. Any public school in a district with a Title 1 school (a federal designation for public schools with the highest percentages of children from low-income families), grades preK-12 (including school-sponsored clubs), Advantage After School Programs, 21st Century Community Learning Centers (NYC funded afterschool program), or the Empire State After-School Program, is eligible to apply for the grant, as are municipal recreation programs in communities with Title 1 schools.

A Watertown elementary school principal summed up the importance of the CKFTG program, noting that “the children at Ohio Elementary were very appreciative of being able to go to the various parks: Pulaski Fish Hatchery, Sackets Harbor Battlefield, Wellesley Island State Park and Rock Island Lighthouse State Park,” adding that, “Many of them do not even get the chance to get out of the city where they live.”



Left: Baldwin Middle School Students get to know a horseshoe crab at Jones Beach State Park.

Middle: Yonkers Elementary School students learn history and technology at the Old Croton Aqueduct State Historic Park.

Right: Schenectady Elementary School children explore a creek at Saratoga Spa State Park.

Urbanization

Most upstate NY cities are declining in population. Between 2017 and 2018, according to **US Census data**, the State's population declined faster than any other state, even as the U.S. overall population grew over the same period. However, with the aging of the population and change in lifestyle of the younger working class, there is renewed interest in urban living, which can provide greater access to services and cultural opportunities. The City of Buffalo, for instance, has outpaced the **national average** in total young adult population growth (**U.S. Census Bureau, 2016 American Community Survey**).

To make cities like Buffalo more walkable, green and pedestrian-friendly for everyone, development and transportation practices need to be revisited. This may require re-purposing infrastructure designed for the automobile, as in the City of Niagara, where OPRHP is retrofitting a portion of the **Robert Moses Parkway** with multipurpose pathways exclusively for biking, walking, and other non-motorized activities providing a multimodal route that will link to publicly accessible walking trails, parks and woodlands.

As the State's population continues to migrate to suburbs and cities, there will be an increasing need to provide green space and places for safe outdoor activity in and around cities. As stewards of outdoor recreation resources, providers need to both maintain and adapt their sites and facilities to meet greater demand from increased density, while ensuring that these resources are safe and accessible to everyone.



Top: Visitors to Riverbank State Park in upper Manhattan enjoy an outdoor summer festival.

Above left: Urban playgrounds help city kids stay active and cool off.

Right: Park programs help urban residents experience contact with nature.

Universal Access

More than three million adults in New York State experience some type of disability, as do many children. Providing recreational opportunities that include this population requires existing and future recreation facilities are – where practicable – universally accessible.

OPRHP

It is OPRHP's mission to provide safe and enjoyable recreational and interpretive opportunities for all visitors, recognizing individual needs and abilities (see **OPRHP Accessibility Policy**). OPRHP is committed to making all reasonable efforts to ensure facilities, programs and services are accessible to and usable by all visitors. The agency makes ongoing efforts to comply with the **Americans with Disabilities Act (ADA)**, the **Architectural Barriers Act of 1968 (ABA)**, the **Rehabilitation Act of 1973**, and the **NYS Building Code**. Through the physical design of its facilities, use of multi-modal interpretive material, adaptive recreation equipment, and reasonable accommodations, OPRHP continues its commitment to providing access to all facilities, programs, and services throughout the State Park System.

OPRHP currently provides individuals with disabilities access to many areas within the State Park System, including the use of wheelchairs where pedestrians are allowed. As OPRHP continues to make its facilities and programs more accessible, information will be made available at facilities and through publications, informational materials and on the **OPRHP** website.

DEC

The goal of the DEC's accessibility efforts is for people with disabilities to be able to participate in and enjoy the benefits of DEC services, programs and activities. This may be achieved in a variety of ways, including through physical design, alternative forms of communication, inclusive programs and individual accommodation.

Existing facilities, programs and services are being assessed to determine compliance with the most recent standards. Newly built and/or renovated facilities, sites and trails, as well as new programs and services, are designed to adhere to current standards for accessible design, wherever applicable. The Accessibility Advisory Committee, consisting of individuals with disabilities and representatives from organizations that serve people with disabilities, reviews and assesses existing facilities. Further information about DEC's accessibility policy is available on the agency's **website**.



New York's campgrounds and educational centers offer a variety of recreational opportunities for people with disabilities, including camping, picnicking, fishing and nature viewing.



Niagara Falls Overlook

Park Professionals Survey

In the spring of 2018, OPRHP's Planning and Programs Section sent out a survey similar to versions sent in previous SCORP years (2003 & 2008), to better understand the needs of park managers at the State, DEC, and county levels. Over 250 surveys were sent to park managers across the state. OPRHP received 166 completed surveys, mainly from state park management professionals. Seventy-eight percent (78%) of NYS counties were represented in this survey, apart from nine rural counties and one upstate county with a secondary city. The majority (82.4%) of respondents represent OPRHP Park Management.

Park professionals responded to recreation needs in their communities as well as their attitudes on important recreational and environmental issues. More than half of park professionals surveyed agree that a variety of trails (56%) and low impact activity areas (54%) are in demand. The need for trails within 30 minutes of home was the second choice among all respondents from the 2018 PORS. Conversely, park professionals indicated a low need for golf courses and downhill hill winter sport activities. These findings illustrate a need for more low-impact recreation facilities to meet the requirements of an aging population.

The top three issues park professionals feel most strongly about are:

1. More money should be spent on public park maintenance and repair.
2. The quality and condition of programs and facilities are being adversely impacted by budget and staff reduction.
3. The government should increase spending for outdoor recreation facilities (e.g. pools, marinas, trails, campgrounds).

Recreation Supply

New York State has approximately 15,700 public and private recreation sites. The "supply" side of recreation resources is derived from data extracted from the NYS Recreation Facility Inventory System (RFIS), which maintains information on the location of each of these sites and the number and types of recreation facilities each provides. There are fewer facilities operated by state agencies compared to other operators, but the sites are larger in acreage.

In general, by comparing the supply of recreation facilities to the demand, areas with need for additional resources becomes evident. For analysis, this report takes into consideration private, not-for-profit and publicly owned facilities. More results from this survey can be found in the Outdoor Recreation Activity Analysis section and the following tables.

Recreation Facility Tables

Table 3.1 – Day Use Facilities by Operator and Region

Day Use Facilities by Operator and Region																
Operator	Facilities with Picnicking	%	Number of Picnic Tables	%	Facilities with Tennis	%	Facilities with Basketball	%	Facilities with Playgrounds	%	Facilities with Baseball	%	Facilities with Football	%	Soccer, Rugby and Multi-Use	%
State	457	26.1	61,245	57.1	90	7.9	119	7.7	224	8.0	105	6.6	65	20.6	50	19.8
County	264	15.1	26,585	24.8	92	8.1	66	4.3	154	5.5	109	6.8	51	16.1	12	4.8
City or Village	489	28.0	10,101	9.4	566	49.8	985	63.5	1,619	57.8	801	50.2	118	37.3	87	34.5
Town	531	30.4	9,282	8.6	386	34.0	381	24.6	804	28.7	579	36.3	82	25.9	103	40.9
Federal	7	0.4	121	0.1	2	0.2	0	0.0	1	0.0	3	0.2	0	0.0	0	0.0
Total	1,748	100	107,334	100	1,136	100	1,551	100	2,802	100	1,597	100	316	100	252	100
Region	Facilities with Picnicking	%	Number of Picnic Tables	%	Facilities with Tennis	%	Facilities with Basketball	%	Facilities with Playgrounds	%	Facilities with Baseball	%	Facilities with Football	%	Soccer, Rugby and Multi-Use	%
Allegany	81	4.6	2,665	2.5	23	2.0	14	0.9	43	1.5	37	2.3	7	2.2	3	1.2
Central	290	16.6	13,770	12.8	147	12.9	207	13.3	342	12.2	213	13.3	51	16.1	48	19.0
Finger Lakes	166	9.5	8,380	7.8	46	4.0	76	4.9	153	5.5	125	7.8	19	6.0	19	7.5
Forest Preserve	103	5.9	4,179	3.9	14	1.2	7	0.5	42	1.5	12	0.8	3	0.9	3	1.2
Genesee	117	6.7	8,321	7.8	46	4.0	30	1.9	102	3.6	109	6.8	21	6.6	7	2.8
Long Island	236	13.5	19,995	18.6	273	24.0	250	16.1	557	19.9	312	19.5	44	13.9	21	8.3
New York City	59	3.4	2,539	2.4	144	12.7	514	33.1	789	28.2	191	12.0	9	2.8	13	5.2
Niagara	114	6.5	16,964	15.8	119	10.5	74	4.8	175	6.2	171	10.7	40	12.7	19	7.5
Palisades	124	7.1	7,177	6.7	47	4.1	64	4.1	110	3.9	74	4.6	22	7.0	11	4.4
Saratoga	154	8.8	7,714	7.2	88	7.7	137	8.8	203	7.2	114	7.1	21	6.6	16	6.3
Taonic	166	9.5	10,014	9.3	128	11.3	117	7.5	176	6.3	160	10.0	47	14.9	72	28.6
Thousand Islands	138	7.9	5,616	5.2	61	5.4	61	3.9	110	3.9	79	4.9	32	10.1	20	7.9
Total	1,748	100	107,334	100	1,136	100	1,551	100	2,802	100	1,597	100	316	100	252	100

Table 3.2 – Swimming Facilities by Operator and Region

Swimming Facilities by Operator and Region										
Operator	Facilities with Swimming	%	Facilities with Beaches	%	Beaches (Linear Feet)	%	Facilities with Pools	%	Pools (Square Feet)	%
State	143	12.6	179	26.8	176,102	41.8	73	11.7	944,614	27.4
County	65	5.7	58	8.7	70,216	16.7	36	5.8	370,009	10.8
City or Village	476	42.1	142	21.3	67,294	16.0	340	54.7	1,609,011	46.7
Town	444	39.3	285	42.7	92,129	21.9	173	27.8	518,280	15.1
Federal	3	0.3	3	0.4	15,270	3.6	0	0.0	0	0.0
Total	1,131	100	667	100	421,011	100	622	100	3,441,913	100
Region	Facilities with Swimming	%	Facilities with Beaches	%	Beaches (Linear Feet)	%	Facilities with Pools	%	Pools (Square Feet)	%
Alegany	21	1.9	17	2.5	7,910	1.9	9	1.4	6,500	0.2
Central	160	14.1	56	8.4	29,661	7.0	127	20.4	499,856	14.5
Finger Lakes	62	5.5	46	6.9	16,103	3.8	40	6.4	144,000	4.2
Forest Preserv	87	7.7	84	12.6	23,291	5.5	3	0.5	11,000	0.3
Genesee	33	2.9	14	2.1	6,535	1.6	22	3.5	90,377	2.6
Long Island	331	29.3	241	36.1	188,483	44.8	123	19.8	589,184	17.1
New York City	92	8.1	22	3.3	39,907	9.5	73	11.7	906,417	26.3
Niagara	74	6.5	21	3.1	15,180	3.6	62	10.0	155,792	4.5
Palisades	50	4.4	30	4.5	10,394	2.5	30	4.8	315,608	9.2
Saratoga	77	6.8	29	4.3	29,700	7.1	56	9.0	244,944	7.1
Taconic	83	7.3	50	7.5	13,465	3.2	52	8.4	435,199	12.6
Thousand Islan	61	5.4	57	8.5	40,382	9.6	25	4.0	43,037	1.3
Total	1,131	100	667	100	421,011	100	622	100	3,441,913	100



Cayuga State Park

Table 3.3 – Boating Facilities by Operator and Region

Boating Facilities by Operator and Region										
Operator	Facilities with Cartop Launch Areas	%	Facilities with Boat Ramps	%	Facilities with Docks or Anchorages	%	Number of Docks/Moorings	%	Facilities with Boat Rentals	%
State	209	83.3	188	36.6	102	36.6	3,419	20.6	81	48.5
County	12	4.8	50	9.7	17	6.1	1,464	8.8	37	22.2
City or Village	20	8.0	105	20.4	58	20.8	4,673	28.2	25	15.0
Town	10	4.0	169	32.9	101	36.2	7,001	42.3	24	14.4
Federal	0	0.0	2	0.4	1	0.4	0	0.0	0	0.0
Total	251	100	514	100	279	100	16,557	100	167	100
Region	Facilities with Cartop Launch Areas	%	Facilities with Boat Ramps	%	Facilities with Docks or Anchorages	%	Number of Docks/Moorings	%	Facilities with Boat Rentals	%
Allegheny	10	4.0	15	2.9	6	2.2	533	3.2	9	5.4
Central	57	22.7	41	8.0	17	6.1	464	2.8	17	10.2
Finger Lakes	23	9.2	52	10.1	22	7.9	1,477	8.9	11	6.6
Forest Preserve	26	10.4	52	10.1	18	6.5	330	2.0	34	20.4
Genesee	14	5.6	16	3.1	9	3.2	102	0.6	7	4.2
Long Island	12	4.8	146	28.4	103	36.9	7,914	47.8	21	12.6
New York City	2	0.8	21	4.1	10	3.6	1,048	6.3	12	7.2
Niagara	7	2.8	34	6.6	12	4.3	522	3.2	8	4.8
Palisades	23	9.2	14	2.7	7	2.5	64	0.4	15	9.0
Saratoga	17	6.8	30	5.8	15	5.4	146	0.9	10	6.0
Taconnic	14	5.6	22	4.3	13	4.7	2,414	14.6	16	9.6
Thousand Islands	46	18.3	71	13.8	47	16.8	1,543	9.3	7	4.2
Total	251	100	514	100	279	100	16,557	100	167	100

Table 3.4 – Winter Activities by Operator and Region

Winter Activities by Operator and Region										
Winter Activities by Operator	Facilities with Ski Areas	%	Lifts	%	Facilities with Ice Skating	%	Snowmobile Trails (Miles)	%	Crosscountry Ski Trails (Miles)	%
State	11	18.3	6	33.3	50	9.2	1,225	86.5	1,925	80.0
County	9	15.0	3	16.7	51	9.4	77	5.5	362	15.0
City or Village	19	31.7	1	5.6	229	42.1	6	0.4	20	0.8
Town	21	35.0	8	44.4	213	39.2	108	7.6	93	3.9
Federal	0	0.0	0	0.0	1	0.2	0	0.0	6	0.3
Total	60	100	18	100	544	100	1,416	100	2,406	100
Winter Activities by Region	Facilities with Ski Areas	%	Lifts	%	Facilities with Ice Skating	%	Snowmobile Trails (Miles)	%	Crosscountry Ski Trails (Miles)	%
Allegheny	1	1.7	0	0.0	8	1.5	195	13.8	122	5.0
Central	7	11.7	1	5.6	92	16.9	346	24.5	318	13.2
Finger Lakes	1	1.7	0	0.0	21	3.9	128	9.0	191	7.9
Forest Preserve	12	20.0	12	66.7	23	4.2	167	11.8	153	6.3
Genesee	5	8.3	0	0.0	36	6.6	125	8.8	268	11.1
Long Island	4	6.7	1	5.6	80	14.7	0	0.0	218	9.1
New York City	10	16.7	0	0.0	48	8.8	0	0.0	3	0.1
Niagara	5	8.3	1	5.6	43	7.9	39	2.8	92	3.8
Palisades	3	5.0	1	5.6	33	6.1	16	1.1	141	5.9
Saratoga	3	5.0	0	0.0	64	11.8	200	14.2	405	16.8
Taconnic	6	10.0	0	0.0	66	12.1	39	2.8	315	13.1
Thousand Islands	3	5.0	2	11.1	30	5.5	160	11.3	180	7.5
Total	60	100	18	100	544	100	1,416	100	2,406	100



Table 3.5 – Camping Facilities by Operator and Region

Camping Facilities by Operator and Region										
Operator	Facilities with Camping	%	Number of Campsites	%	Facilities with Cabins	%	Number of Cabins	%	Facilities with Group Camping	%
State	153	53.3	25,427	79.6	37	72.5	849	92.7	38	50.7
County	68	23.7	3,579	11.2	13	25.5	67	7.3	27	36.0
City or Village	18	6.3	891	2.8	0	0.0	0	0.0	3	4.0
Town	41	14.3	1,905	6.0	1	2.0		0.0	5	6.7
Federal	7	2.4	148	0.5	0	0.0	0	0.0	2	2.7
Total	287	100	31,950	100	51	100	916	100	75	100
Region	Facilities with Camping	%	Number of Campsites	%	Facilities with Cabins	%	Number of Cabins	%	Facilities with Group Camping	%
Allegany	22	7.7	1,029	3.2	2	3.9	380	41.5	3	4.0
Central	27	9.4	3,200	10.0	9	17.6	110	12.0	10	13.3
Finger Lakes	32	11.1	4,643	14.5	12	23.5	117	12.8	10	13.3
Forest Preserve	59	20.6	6,295	19.7	1	2.0	0	0.0	4	5.3
Genesee	12	4.2	3,245	10.2	4	7.8	114	12.4	6	8.0
Long Island	25	8.7	2,597	8.1	3	5.9	0	0.0	16	21.3
New York City	1	0.3	38	0.1	0	0.0	0	0.0		0.0
Niagara	13	4.5	1,516	4.7	2	3.9	2	0.2	1	1.3
Palisades	14	4.9	1,150	3.6	3	5.9	39	4.3	2	2.7
Saratoga	20	7.0	1,507	4.7	1	2.0	2	0.2	5	6.7
Taconic	23	8.0	1,378	4.3	7	13.7	84	9.2	8	10.7
Thousand Islands	39	13.6	5,352	16.8	7	13.7	68	7.4	10	13.3
Total	287	100	31,950	100	51	100	916	100	75	100

Table 3.6 – Golf Facilities by Operator and Region

Golf Facilities by Operator and Region								
Operator	Facilities with Regulation Golf	%	Number of Holes	%	Facilities with Miniature Golf	%	Facilities with Driving Ranges	%
State	19	14.2	729	27.2	9	31.0	15	24.2
County	29	21.6	558	20.8	11	37.9	18	29.0
City or Village	48	35.8	792	29.5	6	20.7	13	21.0
Town	35	26.1	567	21.1	3	10.3	15	24.2
Federal	3	2.2	36	1.3	0	0.0	1	1.6
Total	134	100	2,682	100	29	100	62	100
Region	Facilities with Regulation Golf	%	Number of Holes	%	Facilities with Miniature Golf	%	Facilities with Driving Ranges	%
Allegany	0	0.0	0	0.0	2	6.9	0	0.0
Central	10	7.5	207	7.7	4	13.8	3	4.8
Finger Lakes	8	6.0	189	7.0	3	10.3	5	8.1
Forest Preserve	3	2.2	36	1.3	0	0.0	0	0.0
Genesee	5	3.7	90	3.4	1	3.4	1	1.6
Long Island	26	19.4	675	25.2	9	31.0	16	25.8
New York City	18	13.4	324	12.1	0	0.0	3	4.8
Niagara	17	12.7	288	10.7	0	0.0	7	11.3
Palisades	14	10.4	279	10.4	0	0.0	9	14.5
Saratoga	8	6.0	180	6.7	1	3.4	6	9.7
Taconic	17	12.7	324	12.1	7	24.1	9	14.5
Thousand Islands	8	6.0	90	3.4	2	6.9	3	4.8
Total	134	100	2,682	100	29	100	62	100

Table 3.7 – Public Recreational Facilities in NYS by OPRHP Region

Region Name	Number of Facilities	%	Area (Acres)	%
Allegany	218	3.0	196,606	4.5
Central	860	11.9	320,453	7.3
Finger Lakes	368	5.1	118,571	2.7
Forest Preserve *	223	3.1	2,995,173	68.3
Genesee	248	3.4	55,837	1.3
Long Island	1,570	21.8	75,035	1.7
New York City	1,755	24.3	37,202	0.8
Niagara	329	4.6	26,101	0.6
Palisades	325	4.5	130,791	3.0
Saratoga	498	6.9	110,109	2.5
Taconic	484	6.7	68,140	1.6
Thousand Islands	331	4.6	253,148	5.8
Total	7,209	100	4,387,167	100

* Includes undeveloped recreational lands under jurisdiction of the New York State Department of Environmental Conservation.



Recreation Demand

The needs assessment is developed using a comprehensive online survey of NYS adult residents, which helps us to understand their outdoor recreation activity participation levels, specific recreation facility needs, and other key variables. Results from the 2018 Public Outdoor Recreation Survey (2018 PORS) comprise the “demand” side of the model. These demand data are inserted into a mathematical model that estimates recreation activity occurring throughout the State at the county level. Data gathered from this survey established levels of participation and perceived recreation needs for community recreation facilities.

The survey was conducted among a geographically stratified sample of adult NYS residents and was balanced to the population at the county level. Information from the survey is valuable because it provides input from the entire State’s adult general population, rather than from specialized groups, such as “friends” groups, or activity club members. Survey findings were analyzed, and demographic variables assessed as to their influence on recreation choices. The results of this analysis, along with U.S. Census data, are used to make projections for current and future levels of recreation within NYS by activity and county.

OPRHP collected data from 10,096 individuals across the State regarding their participation in fifteen outdoor recreation activities during the 2017 calendar year. Walking for enjoyment—including jogging/running, day hiking—with 86.6% of total respondents participating, continues to be the top outdoor recreation activity participated in by most adult NYS residents. This is followed by relaxing in the park (86.0%), swimming (68.9%), biking (49.3%) and camping (44%).

As part of the 2018 PORS, survey participants were asked what recreation facilities they felt were needed within 30 minutes of their home. Forty percent (40.2%) of all surveyed reported their community was lacking outdoor recreation facilities. Over half (54.4%) indicated more recreation facilities are needed in their community. At least 20%_ of survey participants who indicated that outdoor recreation facilities within 30 minutes of home are lacking in their community, identified swimming pools/beaches, playgrounds, picnic facilities, open space and trails as top recreation needs.

Table 3.8 – 2017 Outdoor Recreation Activity Participation – Age 65-85

Activity	Age 65-85 Participate
Walk	86.2%
Park	85.1%
Swim	64.8%
Bike	39.7%
Boat	38.3%
Camp	37.8%
Fish	34.4%
Field Sports	33.2%
Court Games	33.2%
Local Winter Activities	30.9%
Golf	26.4%
Downhill Winter Sports	18.6%
Snowmobiling	18.0%
Hunting	13.5%
Equine	13.5%

Table 3.9 – 2017 Outdoor Recreation Activity Participation

Activity	2017 Activity Days	% Participate	2025 Activity Days	% Participate
Walking for enjoyment including jogging, running, and day hiking	909,922,025	68.48	994,316,467	68.59
Relaxing in the park including picnicking, playground use, visit nature centers, dog parks, croquet	406,916,021	30.81	445,658,294	30.99
Swimming in an ocean, lake, river or in a public or private pool	187,683,314	18.24	201,714,275	18.22
Bicycling on and off-road bicycling including mountain biking	107,153,202	15.52	114,615,470	15.64
Field sports such as baseball, soccer, football, and disc golf	61,954,373	10.38	64,151,311	10.45
Court games including tennis, racquetball, basketball, handball, pickleball, etc.	60,312,610	10.40	63,135,769	10.52
Camping including, tenting, RV, cabins, backpacking/long distance hiking, etc.	45,379,704	7.53	47,600,821	7.54
Fishing from land, by boat, or ice-fishing	39,559,358	7.36	41,930,561	7.36
Boating including motor boating, sailing, canoeing, kayaking, paddle boarding, and jet skiing	34,679,290	5.80	36,726,649	5.79
Local winter activities including ice skating, cross country skiing and snowshoeing, etc.	22,894,989	4.53	23,858,443	4.55
Golfing including 9-hole, 18-hole, par 3 courses, miniature golf, driving ranges, pitch and putt	21,604,099	5.21	22,893,884	5.22
Downhill winter sports including skiing, snowboarding, ski boarding, telemark, etc.	8,177,230	2.79	8,271,148	2.81
Equestrian activities including dressage, show jumping, polo, trail riding	8,159,510	3.73	8,165,784	3.77
Hunting including big and small game	8,513,312	3.69	8,582,004	3.70
Snowmobiling	5,536,500	2.52	5,557,970	2.54

Source: 2018 Public Outdoor Recreation Survey and US Census Bureau

Relative Index of Need (RIN)

OPRHP maintains a computerized database, the Recreation Facilities Inventory System (RFIS), in principle lists all known outdoor recreation sites in the state. This information can be transformed into a numerical value, which equals the optimal number of people who can participate in each activity at a given site, also known as the recreation capacity. When aggregated, the capacity across sites for a given geographic area is the recreation supply.

Recreation demand is measured in terms of recreation activity days, equal to the number of participants for an activity, multiplied by the number of days per year each participant does the activity. Demand is also aggregated by county for each of the various measured outdoor activities.

Once all the supply and demand calculations for each county are completed, a single number is calculated for each activity, which indicates the ratio of demand to supply. This number, known as the relative index of need (RIN), is calculated by taking the projected ratio of recreation demand to supply, expressing it as a ratio of the statewide average, and translating it to a value on a scale of 1 to 10. Note that:

- The higher the value, the greater the need. A figure of three or less indicates that the county-wide recreation needs for a given activity are generally being met—but even in these cases there may exist pockets of recreation deficiency. This number provides information on where recreationists live and how often they participate.
- A value of four or greater indicates a need for additional recreation sites within a county. Need may reflect the lack of facilities, or that new facilities need to be constructed to take the place of older ones, which deteriorate or close.
- Much recreation involves travel, including travel across county lines. The RIN therefore also considers the fact that people travel for recreation, by using information on the location of parks and other recreation facilities. Using data on the quantity of recreation amenities at various destinations, with an estimate of an individual's resistance to traveling for a particular activity, it is possible to calculate how much activity takes place at various destinations. Comparing the number of future visitors at the destination counties with the availability of present facilities helps to project the present and future needs for both new and rehabilitated facilities.
- While RIN figures are valuable in looking at the big picture, often the number presented for the county represents an average for the county and the actual need is not homogeneous within a county. For example, a county may have a river or other natural resource with limited facilities, that attracts greater numbers of visitors, while having largely undeveloped areas elsewhere in the county (that satisfy the recreational needs in those locations). The county-wide figure would consider both areas. It would over-estimate the needs in certain areas of the county and underestimate it in others. Nonetheless, an index of need is relevant in comparing one county to another.

Due to the limitations of the 2018 PORs, an alternate means is utilized for grant rating purposes to provide a RIN at the county level. In these cases, an estimated RIN can be calculated on an ad hoc basis using information from the available RIN table. For instance, if a RIN figure was needed for ATV activity, its value might be estimated by averaging the values of snowmobiling with hiking. While ATV use is distinct from both activities, there are certain commonalities. ATV use appeals to participants who enjoy using vehicles to explore the outdoors and, at the same time, often requires the availability of trails such as those that are enjoyed when hiking.

This approach, while not optimal, provides an approximation of real-world needs. If this methodology is applied, the inputs will be determined by OPRHP and maintained for future use so that figures are applied consistently through time.

The RIN is a valuable tool to determine need for facilities at geographic areas over the next five to ten years, but other factors can and should be considered for any final decisions.

Table 3.10 – Relative Index of Needs (RIN)

County	Park	Swim	Bike	Golf	Court	Field	Walk	Camp	Fish	Boat	LocW	DnSki	SnM	Hunt	Equine
Albany	4	9	6	7	8	5	5	4	7	7	7	10	6	5	4
Allegany	9	5	3	3	4	4	4	10	5	3	6	3	4	4	4
Bronx	10	5	10	4	5	6	8	4	6	10	3	9	10	7	8
Broome	4	4	5	5	6	4	5	4	4	3	4	5	5	5	4
Cattaraugus	3	5	3	7	5	4	2	4	4	2	10	4	4	4	3
Cayuga	5	4	3	4	6	4	4	5	4	4	10	4	4	4	3
Chautauqua	4	5	3	9	8	6	5	5	4	4	8	4	4	4	4
Chemung	5	8	4	4	6	5	6	4	7	2	7	3	4	4	3
Chenango	4	5	3	3	5	3	3	4	4	3	7	5	4	4	3
Clinton	3	3	3	4	6	4	3	4	4	4	6	2	4	4	2
Columbia	3	3	4	2	9	3	3	5	4	3	4	4	5	5	3
Cortland	4	6	3	3	3	6	4	4	4	3	10	6	4	4	3
Delaware	6	4	4	5	3	3	2	7	4	3	4	6	5	4	3
Dutchess	5	6	6	5	9	5	4	5	6	5	8	10	6	5	4
Erie	3	6	7	7	9	5	8	5	6	6	8	6	5	5	4
Essex	3	3	3	4	7	4	2	3	4	3	3	2	4	4	2
Franklin	4	4	3	3	9	6	3	3	3	2	3	2	4	4	4
Fulton	3	5	4	4	5	3	10	4	5	4	9	9	5	4	3
Genesee	4	6	4	4	6	4	3	10	5	4	4	3	4	4	3
Greene	4	7	4	6	4	5	4	6	7	5	10	5	5	5	3
Hamilton	2	3	3	3	2	2	1	2	4	3	2	3	4	4	2
Herkimer	4	4	3	3	7	6	4	5	4	3	10	5	4	4	3
Jefferson	4	3	3	6	4	3	3	4	3	3	5	4	4	4	3
Kings	10	6	10	5	5	7	10	4	6	10	3	10	10	7	9
Lewis	4	2	3	3	3	2	3	5	4	3	9	3	4	4	3
Livingston	4	4	4	4	4	4	3	4	5	3	4	4	4	4	3
Madison	6	3	3	3	4	7	2	3	5	4	7	5	4	4	3
Monroe	4	6	7	5	10	5	8	3	5	5	3	5	5	5	5
Montgomery	6	3	4	3	4	3	4	6	4	3	4	3	5	4	3
Nassau	6	6	9	6	5	4	8	4	7	8	3	8	10	7	5
New York	10	6	10	5	5	7	9	4	6	5	3	8	10	7	9
Niagara	3	4	5	5	6	3	5	3	4	5	6	5	4	4	4
Oneida	4	5	4	6	7	5	6	6	5	4	10	6	4	4	3
Onondaga	4	5	5	7	6	4	4	3	5	5	8	8	5	5	3
Ontario	6	5	4	4	10	6	6	6	5	3	10	5	4	4	3
Orange	6	8	6	6	8	7	4	6	6	4	9	8	7	5	5
Orleans	4	7	3	4	5	6	4	4	4	4	5	3	4	4	3
Oswego	5	4	4	5	9	6	4	7	4	5	8	4	4	4	3
Otsego	3	3	3	3	3	2	3	5	4	3	4	5	5	4	3
Putnam	6	6	6	3	5	6	3	4	6	5	6	5	7	5	4
Queens	10	6	10	5	5	6	9	5	6	8	2	9	10	7	9

(cont.)

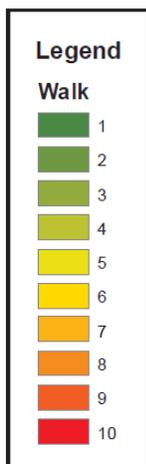
Table 3.10 – Relative Index of Needs (RIN) (cont.)

County	Park	Swim	Bike	Golf	Court	Field	Walk	Camp	Fish	Boat	LocW	DnSki	SnM	Hunt	Equine
Rensselaer	5	5	5	9	6	7	4	9	5	4	8	3	5	5	3
Richmond	9	5	10	4	4	5	8	4	5	6	3	8	10	7	8
Rockland	5	5	8	5	7	5	4	3	5	8	3	5	8	6	4
St. Lawrence	4	4	3	5	4	5	3	3	4	3	6	9	4	4	4
Saratoga	4	5	5	5	7	4	5	7	5	4	7	2	5	4	4
Schenectady	10	4	5	5	6	4	6	4	5	4	9	4	5	5	4
Schoharie	4	3	3	2	3	3	5	7	4	4	9	3	5	4	3
Schuyler	3	4	3	2	3	3	3	4	4	5	7	3	4	4	3
Seneca	2	3	3	3	4	2	3	3	4	3	3	2	4	4	3
Steuben	4	6	3	4	7	3	4	4	5	4	10	4	4	4	4
Suffolk	5	6	8	6	7	5	5	4	6	8	5	9	10	6	4
Sullivan	4	6	4	6	6	5	2	7	6	4	10	8	5	4	2
Tioga	9	3	3	3	3	3	3	3	6	3	9	4	4	4	4
Tompkins	4	5	4	4	8	3	3	4	4	3	7	5	4	4	4
Ulster	7	5	5	4	10	6	3	6	6	6	10	5	6	5	5
Warren	3	4	4	5	5	3	5	4	5	4	4	3	4	4	3
Washington	4	3	3	4	5	3	3	2	4	4	6	2	4	4	3
Wayne	5	3	4	4	5	4	8	3	4	4	6	4	4	4	4
Westchester	6	5	8	7	6	5	3	4	5	7	2	7	8	6	4
Wyoming	3	8	3	4	7	7	5	4	6	4	10	3	4	4	4
Yates	4	6	3	2	8	4	6	4	5	3	10	4	4	4	5

ABBREVIATIONS USED IN THE RELATIVE INDEX OF NEED (RIN) TABLE

- Park** Relaxing in the park, picnicking, playground use, visiting nature areas and gardens, croquet, dog parks, etc.
- Swim** Outdoor swimming, either in a pool (public or private), lake, ocean or river
- Bike** Bicycling/mountain bikes whether on trails, established paths, off-road or on highways
- Golf** Golfing on either regulation 18 or 9-hole including miniature golf, driving ranges, pitch and putt
- Court** Court games, includes basketball, handball, tennis, racquetball, pickleball
- Field** Field sports, includes baseball, football, soccer and disc golf
- Walk** Walking for enjoyment/jogging/running on paths and trails, and day hiking
- Camp** Camping includes tenting, primitive, RV, cabins, backpacking/long distance hiking
- Fish** Fishing from land, by boat, or ice fishing
- Boat** Boating includes canoeing, kayaking, sailing, motorboating, row boating, paddle boarding, jet skiing, etc.
- LocW** Local winter activities include ice skating, cross country skiing and snowshoeing
- DnSki** Downhill winter sports includes skiing, snowboarding, ski boarding, telemark, etc.
- SnM** Snowmobiling
- Hunt** Hunting big and small game
- Equine** Equestrian activities, dressage, show jumping, polo, trail riding

Activity Analyses



Overview

The RIN table uses a scale of 1 to 10 to represent the county-wide ratio of recreation demand to recreation supply. A RIN of 1 indicates areas where recreation needs for a given activity are generally being met, and 10 indicates areas with the greatest need for an activity relative to recreation supply.

The choropleth maps in this section show the same data for recreation activities shown in the RIN table, with need represented by a scale of color: green = 1, or counties with lowest need (i.e., supply is adequate), and red = 10, indicating areas with the greatest need for facilities offering that activity. This format makes it easy to see where there is a need for the targeted activities in the State, and where demand for specific recreation activities are being adequately met.

Legend (left) shows color equivalents of items shown on RIN Table for choropleth maps below.

Trail Activities

Walking for Enjoyment (86.6%—represents the total survey sample)

Walking, jogging and day hiking was the most popular activity category from the 2018 Public Outdoor Recreation Survey (PORS) among all respondents, and those ages 65-85 (86.2%). (See Table 3.8 for outdoor recreation participation of those ages 65-85.) This activity encompasses well over half of the total activity days of all recreation activities measured. (See Table 3.9.) Trails are an important component of active transportation such as biking and walking. According to the **American Public Health Association** using active transportation can lead to a decreased incidence of cancer, cardiovascular risk and obesity with better mental health.

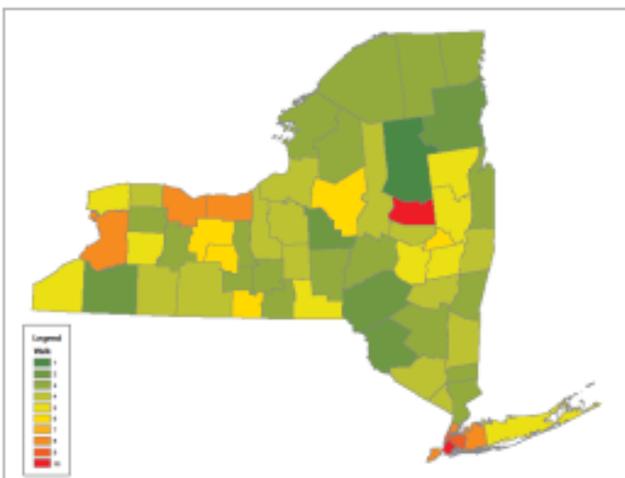


Figure 3.1 – Need for Walking, Jogging, and Hiking Facilities

Bicycling (49.3%)

For recreation purposes, on and off-road biking, including mountain biking, was the fourth most popular activity in the 2018 PORS with 49.3% of total respondents participating at least once. Statewide there were over 107 million activity days in 2017. Bicycling is a growing mode of transportation. Much of the recreational bicycling takes place on public roads. An important component of improving this activity is increased safety. There are several ways to accomplish this including: promoting the use of helmets, traffic law education and the construction or designation of separate lanes for bicyclists. The installation of separate bike lanes has been gaining popularity and acceptance across the country. It has been shown to increase cycling and reduce risk.

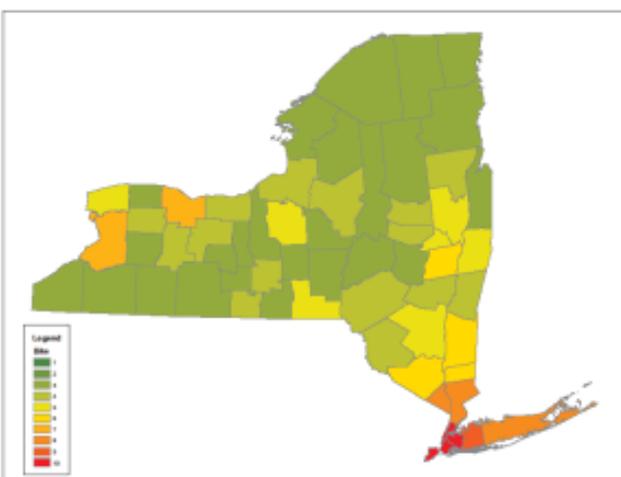


Figure 3.2 – Need for Bicycle Facilities

Bicycling is one of America’s major outdoor recreation and transportation activities. While this document focuses on the recreational aspect of bicycling, it should be noted that the transportation component will likely grow in importance as the cost of gasoline and concerns over environmental issues increase in the future.

Bicycle-sharing services provide public-use bicycles on a short-term basis for a price or for free. In Albany, NY, Capital District Physicians’ Health Plan (CDPHP), a health care provider, partnered with Capital District Transportation Authority (CDTA) to provide a bike-sharing service, called **CDPHP Cycle!** It launched in 2017. The service was so successful, it exceeded expectations its first year, and again in 2018. In its first two years the program garnered more than 6,500 members, who burned a collective 2.25 million calories, reduced 71,000+ pounds of carbon, rode 80,500+ miles, and took nearly 35,000 trips.

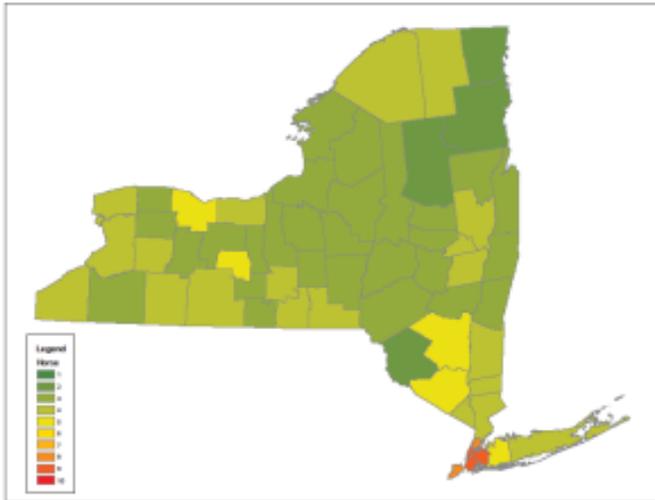


Figure 3.3 – Need for Equestrian Facilities

Equestrian (20.7%)

Horse ownership and ridership is a popular recreation activity throughout NYS and is important to many regional economies. In 2017, the American Horse Council Foundation’s **National Economic Impact Study** estimated that in NYS, equine recreation’s economic impact of \$765 million worth of goods and services provided the equivalent of nearly 8,000 jobs. The NYS **Horse Council** estimates there are 200,000 horses in the State. Approximately 140,000 are used recreationally. Horseback riding is not limited to the suburban and rural areas of the state. The RFIS lists equestrian trails in every county, including New York City. Statewide, some OPRHP facilities offer equestrian camping, and many of the DEC trail networks provide support infrastructure such as hitching rails, horse shelters, lean-tos for riders and parking amenities.



Day Use Activities

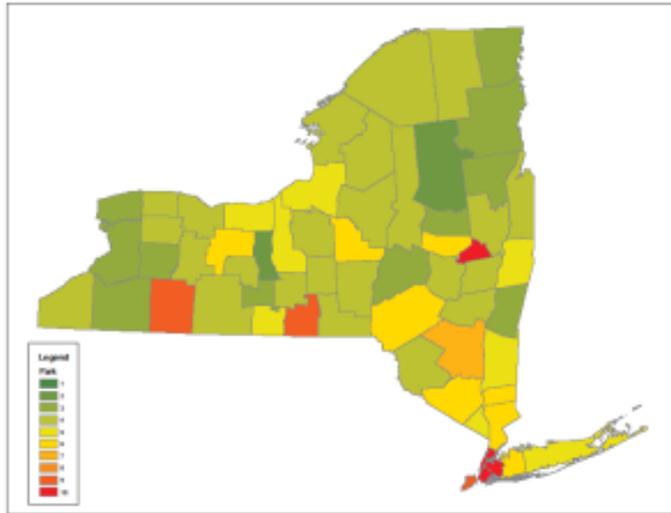


Figure 3.4 – Need for Relaxing in the Park Activities

Relaxing in the Park (86.0%)

This category includes picnicking, relaxing and playground use. Requiring minimal physical exertion and almost no equipment costs, these activities can be enjoyed by all ages regardless of income. It is no surprise that the number of participants for picnicking/day use/relaxing in the park is the 2nd most popular activity (86%) for total respondents. It has the same rank among those ages 65-85 (85.1%) according to the 2018 PORS. Additional facilities for relaxing in the park was the second greatest outdoor recreation need, according to the 2018 Park Professionals Survey.

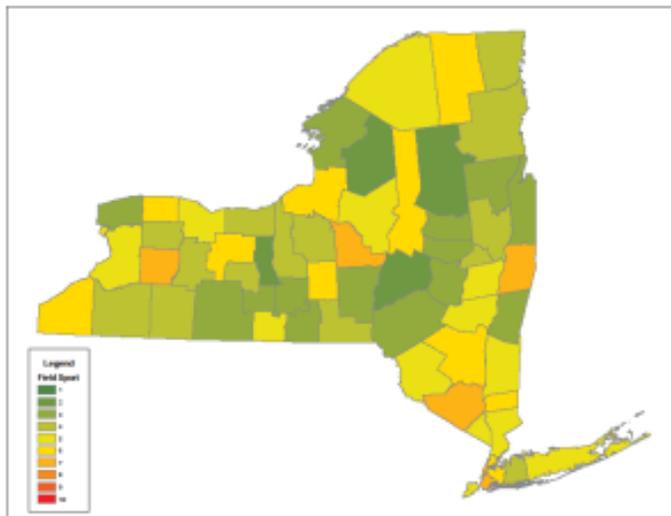


Figure 3.5 – Need for Field Game Facilities

Field Games (43%)

Field sports include the following: baseball, football, soccer and disc golf. They are the 7th most popular activity category in the 2018 PORS based on total survey respondents with 43% having participated in at least one day of field games. For those between ages 65-85, field sports are ranked 8th based on 33.2% participating. There are nearly 2,200 public facilities that have sport fields. There are many more fields for baseball than any other type of field for recreational use with Long Island having the most baseball fields.



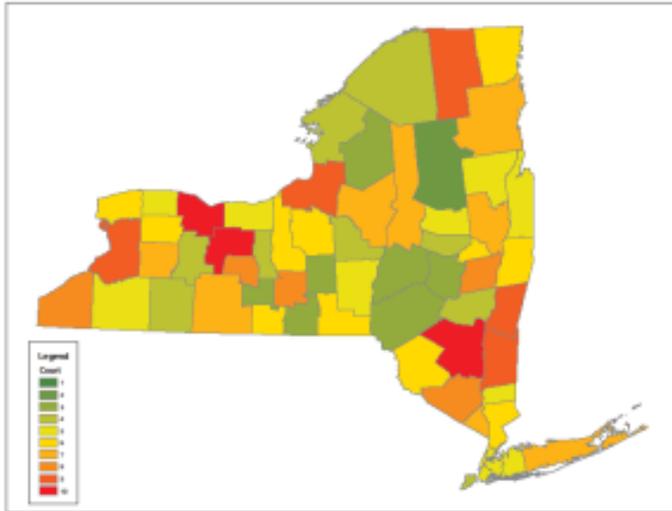


Figure 3.6 – Need for Court Games Facilities

Court Games (42.1%)

Court games had a participation rate of 32.2% among those ages 65-85 per the 2018 PORS. There are over 60 million court game activity days in 2017 taking place in NYS operated by cities, counties, state, town and federal operators. The largest operator of court games are cities and villages. The New York City region has the greatest number of basketball courts, per the RFIS. **Pickleball** is an activity that encompasses elements of tennis, ping pong and badminton. It appeals to seniors because it's a low-impact game, low stress, played on a court smaller than a tennis court, and easy to learn. A larger racquet is used that's lighter than a tennis racquet using a whiffle type ball. It can be played inside or outside and by people of all abilities.

Water Activities

Swimming (68.9%)

Of the activities surveyed in the 2018 PORS, swimming (68.9%) was the 3rd most popular outdoor recreation category when measured by activity days and number of participants for the total sample and those ages 65-85 (64.8%). When asked what type of recreation facility was most needed within 30 minutes of their homes, swimming facilities were the most requested.

Conversely, park professionals did not indicate a need for swimming facilities. This may be due to the staffing and maintenance costs associated with pool facilities. Swimming is very popular in Long Island. Based on information from the RFIS, Long Island is home to approximately 40% of New York's developed beaches and 20% of the State's managed pools.

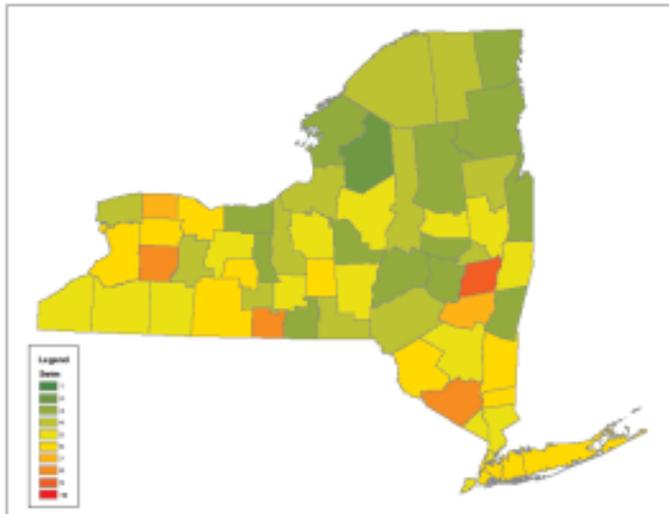


Figure 3.7 – Need for Swimming Facilities



Jones Beach State Park

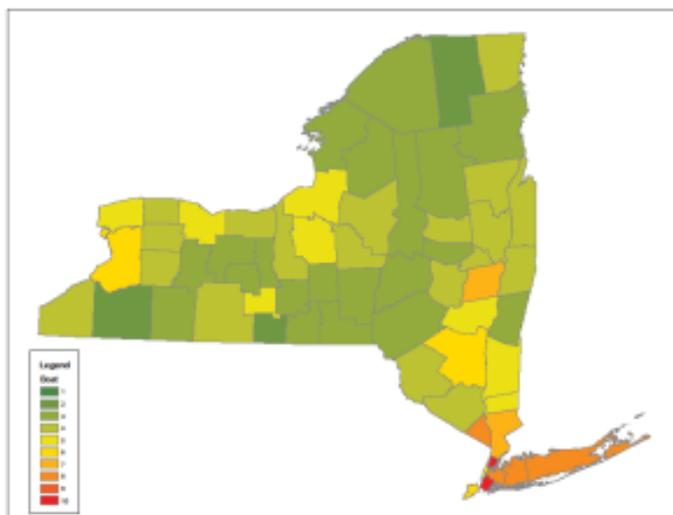


Figure 3.8 – Need for Boating Facilities

Boating (43.2%)

NYS has abundant water resources and most areas of the State provide numerous facilities for this activity. The Long Island Region has the greatest percentage of boating facilities, yet also appears to have the greatest need for such facilities. OPRHP is responsible for providing the public with a safe, enjoyable environment for recreational boating. Ultimately, the goal is to help boaters develop and employ safe boating habits: wearing personal floatation devices (PFDs), attach a whistle to the PFD, use a map and GPS device, and boat with a group. See OPRHP’s [Boating Education](#) site for more information.

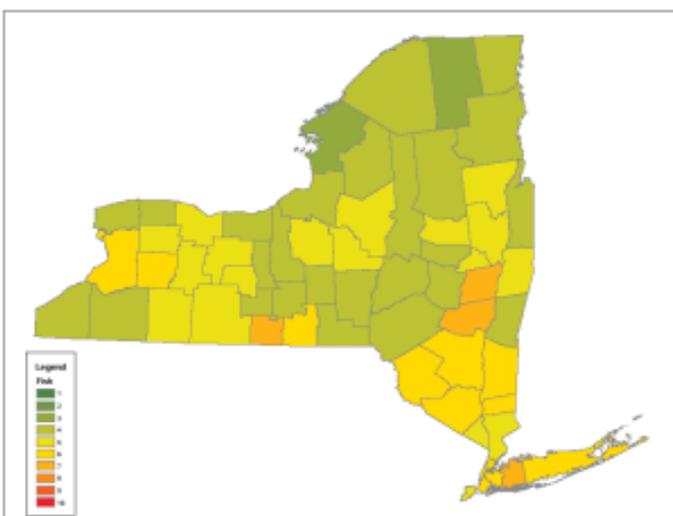


Figure 3.9 – Need for Fishing Facilities

Fishing (40.2%)

A **2017 report** by the U.S. Fish and Wildlife Service shows that 101.6 million Americans participated in wildlife-related outdoor recreation (hunting, fishing and wildlife activities) last year. An increasing number of people are participating in fishing. New Yorkers can choose from a variety of fishing experiences. Salt water fishing, surf casting and deep-water fishing are popular throughout Long Island and New York City. Because of the many sources of fresh water throughout the state, freshwater fishing is also popular. In winter, ice fishing is prevalent, mainly in upstate areas.

According to the 2018 PORS, fishing is most popular in Western NY. DEC requires fishing licenses and publishes an annual guidebook to help people make healthier choices about which fish to consume. NYS Department of Health (DOH) issues **recommendations** and advisory notices about eating sportfish (i.e., the fish you catch). These recommendations educate residents and visitors about the health benefits and hazards of consuming certain fish species. An interactive map with more information on fish consumption can be **found at the NYSDOH website**.



Ice Fishing, Allegany State Park

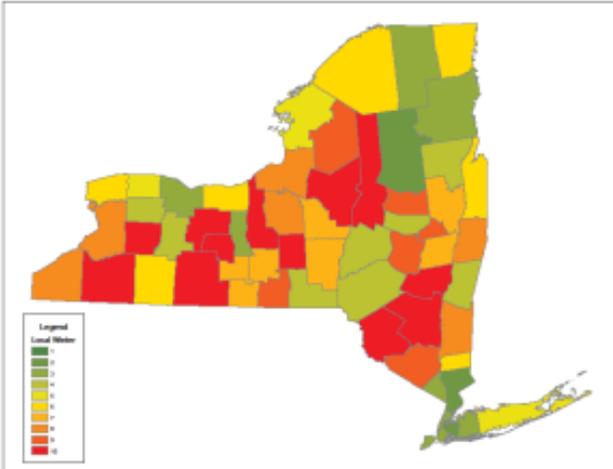


Figure 3.10 – Need for Local Winter Facilities

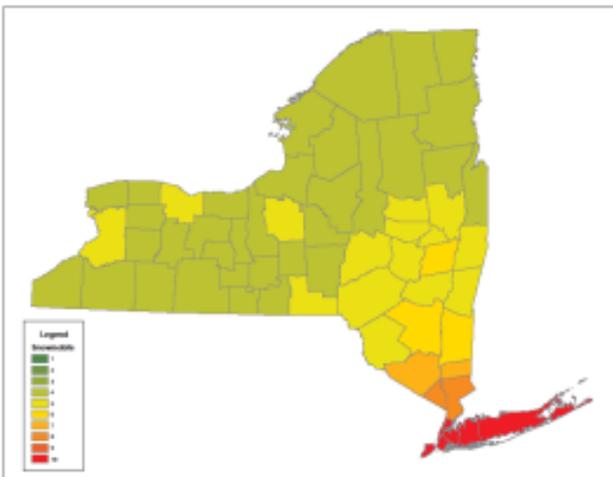


Figure 3.11 – Need for Snowmobiling Facilities

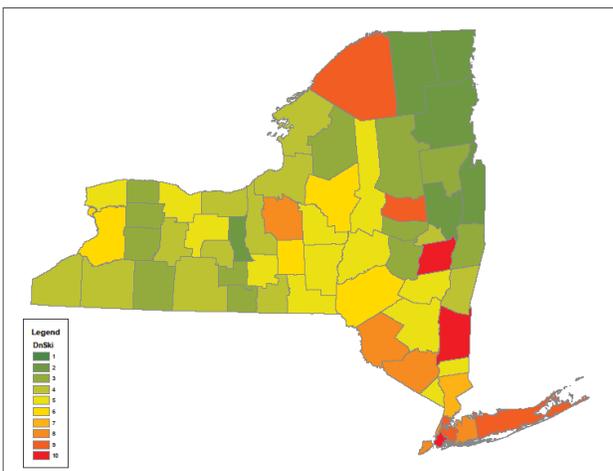


Figure 3.12 – Need for Downhill Skiing Facilities

Winter Activities

Local Winter Activities (37.8%)

Total participation in winter sports is generally lower than in summer activities. A shorter season and school attendance are factors. There are numerous trails in NYS for winter activities. Basically 31% of those ages 65-85 have participated in at least one day of local winter sport activities in 2017. For this report, outdoor winter activities include ice skating, cross-country skiing and snowshoeing. Snowmobiling and downhill skiing are considered separately, as these two activities require more of an investment by their participants in both equipment expenses and travel time.

Snowmobiling (24.4%)

In many remote New York communities snowmobiling is an important part of the economy. The 2013 Snowmobile Owners Survey Executive Summary: Economic Impact of the Snowmobile Industry in New York State indicated that spending in the State exceeds \$860 million. This includes expenditures on equipment, insurance, maintenance, gasoline and travel. In recent years, however, the number of snowmobiles registered in the State has decreased, from approximately 172,000 registrants in 2002-03, to 117,000 in 2012-13, and continued to decline to 112,000 in 2017-18. A 2017 **Research and Markets** report indicates the high cost of snowmobiles and susceptibility to weather conditions create market challenges for the snowmobile industry and are primary factors contributing to industry decline. See OPRHP's **Snowmobile web page** for more information.

Downhill Skiing (25.3%)

As with snowmobiling, for some areas in NYS this activity is an important component of the local economy. Skiing is a commercially viable operation and the private sector provides more niche facilities. The State maintains 3 downhill ski facilities: Whiteface Mountain, Gore Mountain and Belleayre Mountain. According to the **Ski Areas of NY (SANY) Economic Value Analysis Report**, during the 2016-2017 season over \$140 million was spent on winter sports equipment in NYS. Visitors to these venues in 2017-18 generated more than \$26 million in total revenue.

Other Activities

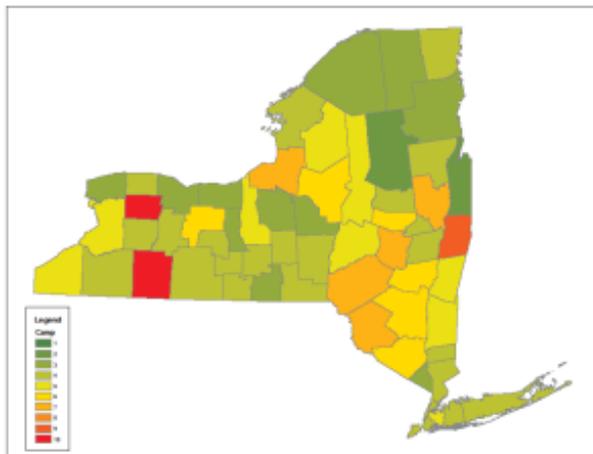


Figure 3.13 – Need for Camping Facilities

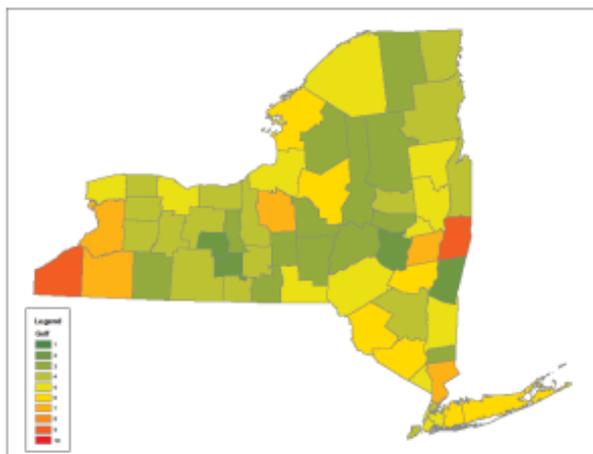


Figure 3.14 – Need for Golfing Facilities

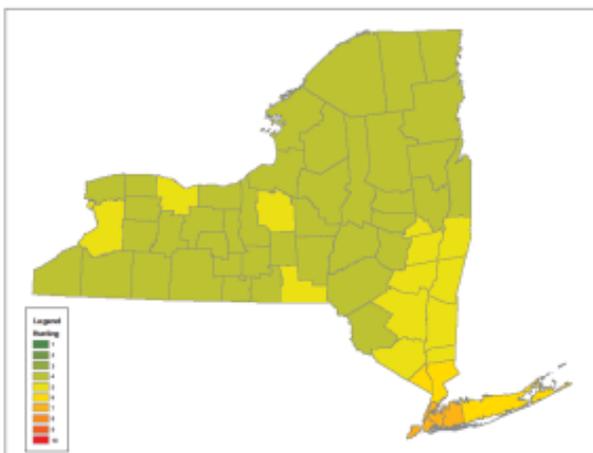


Figure 3.15 – Need for Hunting Facilities

Camping (44%)

Camping differs from most other outdoor recreational activities in that it is a multi-day activity, often involving other activities such as hiking, fishing, swimming, and boating. The style of camping (e.g. tent, RV, camper) changes over the course of an individual's lifetime. Younger campers tend to participate in backpacking and tent camping. The 2018 Outdoor Recreation Outlook by the **American Recreation Coalition** notes camping is on the rise with millennials. Key reasons given include: spending more time with friends and family, being physically active, improving their overall emotional well-being and health. Camping facilities are available throughout NYS, although more limited within New York City and Long Island. Because travel is an important component of these activities, campers in New York City and Long Island are willing to travel to more remote areas. The Catskill and Adirondack Parks contain the most camping sites of any other region and offer a variety of other recreation opportunities year-round. Check out NYS OPRHP's [camping website](#).

Golfing (32.3%)

Golfing is one of the few activities for which participation rates appear to increase with age, although an increase in income over the same years of the lifetime may also be a contributing factor. With the aging of the baby boomers, this has been a rapidly growing activity for many years. Now, however, with the youngest baby boomers turning 54, the number of golfers is not increasing as rapidly as before. The 2018 PORS indicated that golf is now the 11th most popular activity among all surveyed and those ages 65-85 (26.4%) with over 21 million total activity days in 2017. Visit [OPRHP's golf web page](#) for more information.

Hunting (21.9%)

This outdoor recreation activity remains a select outdoor sport with only 21.9% participation rate per the 2018 PORS. It includes big and small game. A 2017 **report** by the U.S. Fish and Wildlife Service shows that 101.6 million Americans participated in wildlife-related outdoor recreation last year. Participation in hunting dropped by nearly 2 million people to a total of 11.5 million hunters nationally. Total expenditures by hunters also declined 29% from 2011 to 2016, from \$36.3 billion to \$25.6 billion during the same timeframe.



Jones Beach State Park, Long Island

Emerging Trends

The Outdoor Industry Association (OIA) predicts that participation in outdoor recreation will continue to grow. There are over 760 million visitors to state parks annually nationwide, according to the National Association of State Park Directors (NASPD). Consistently through the years, OPRHP has shown a steady increase in overall park attendance. In 2016, 70.6 million people **visited parks** across NYS, and more than 74 million in 2018.

The National Recreation and Parks Association (NRPA)'s 2019 **Agency Performance Review Issue** predicts that technology will have a greater impact on park agency efficiency, costs and performance. As they are developed, new products will provide cost-effective options that management can use in their parks to determine facility use and staffing needs. These include:

- **Monitoring products** – items such as beacon counters, which use inexpensive blue-tooth technology to detect a person's presence via their cell phone signal used to monitor facility use. The devices can be mounted indoors or outdoors, at strategic locations including poles, signs, trees, or on walls and light fixtures.
- **Geofencing** – using radio frequency identification (RFID), or global positioning systems (GPS), to create a virtual perimeter to collect information within a real-world geographic area. This technology can be used to detect people entering and exiting specific locations or to locate people within large areas.
- **Drones** – with mass production and falling prices, drones are receiving greater public acceptance. **NRPA** contends that commercial drones will play a more strategic role to facilitate greater efficiency in park management, security, public management and recreation. Drones are used for monitoring, search and rescue, wildfire management, public safety, and at cultural historic or archeological sites. They can safely provide aerial images of sites and structures for assessment, when human access is deemed unsafe.

According to NRPA, the need for self-generated revenue is expected to increase, as support for the **general fund** declines. As local government spending on parks and recreation continues to recover from the Great Recession, agencies have been increasingly challenged to generate more of their operating and maintenance costs from fees and charges. NRPA notes general fund support from local and state government for parks and recreation systems is weakening across the country, and there are no signs this trend will subside.

CHAPTER 4 — RECREATION AND RESILIENCY

Extreme weather events and sea level rise are already affecting many of New York State’s parks and sites, and these impacts are predicted to increase in the future. Recreational open space along the Hudson River, Long Island Sound, Atlantic Ocean, and the Great Lakes—among others—are experiencing greater and more frequent flooding. The destruction wrought by Tropical Storms Lee and Irene in 2011, and Hurricane Sandy the following year, demonstrated the impact that extreme weather can have, not only on our communities and crucial infrastructure but on the State’s environmental and outdoor recreation resources. As high-intensity storms become more frequent, proactive planning is essential to protecting our outdoor recreation areas and natural and historic resources.

Natural infrastructure such as forests, parks and wetlands, can help communities recover from, and become more prepared for, stresses from natural hazards such as storm surge and flooding. In NYS, wetlands are regulated by the DEC and are therefore included with that agency’s section. Including wetlands as a plan component is also a requirement of the Land and Water Conservation Fund of 1965, as amended.

Climate Change

Many of our public beaches, trailways, and historic landscapes are located in flood-prone areas, and when floods occur, the system of roadways, bridges, dams, and other infrastructure that serves them can be catastrophically damaged. Tropical Storms Lee and Irene caused severe flooding upstate—especially in the Catskill Mountains—and Hurricane Sandy wreaked havoc on counties downstate, washing away boardwalks, buckling pavements, and damaging buildings at Jones Beach and Robert Moses State Parks, both located on vulnerable barrier islands off the coast of Long Island. The destruction wrought by this storm trifecta changed the perception of climate change from a paper concern to an immediate threat requiring rapid and large-scale action.



Damage to the boardwalk at Jones Beach State Park from Hurricane Sandy, November 2012.

Climate changes are affecting the balance of natural ecosystems and impacting the plants and animals that characterize our parks and natural areas. Scientists at Columbia University’s **Earth Institute** have found that “spring arrives a full week earlier than it did several decades ago, causing plants to bloom earlier and pollinating bees and migrating birds and insects to arrive sooner. Species that are adapted for warm temperatures or warmer waters are extending their range, as habitat for species favoring cooler temperatures or waters shrinks.” They note that if some tree species in the Northeast U.S. move north or to higher elevations, NYS “is expected to lose its spruce-fir forests in the Catskills and Adirondack Mountains by 2100.”

Climate Change: Impacts on Plants and Animals

For many species, temperature is the trigger for key ecological events. In the last several decades, many North American plants and animals have moved approximately 36 feet, to higher elevations, or 10.5 miles, to higher latitudes every 10 years. New environments are often less hospitable — there might be less space or more competition for food. A 2016 study noted that climate-related local extinctions have already occurred in hundreds of species, including 47% of the 976 species surveyed.

Impacts on Outdoor Recreation

Climate change poses an unprecedented challenge to New York State’s communities, environment, and economy. As we experience more extreme and unpredictable weather events, our parks and open spaces are particularly at risk. Planning for changes in sea level and other potential climate-related impacts has become an integral component of the recreation planning process. Rising annual temperatures, more frequent heatwaves and shortened winter seasons are just some of the impacts that will change where and when we recreate. The destruction of landscapes and ecosystems can have profound effects on the familiar outdoor places that families may have visited for generations.

The State recognizes that climate change is a complex global issue that is affecting our overall environment and infrastructure in complex and interconnected ways. The future of travel, tourism and recreation will continue to be vulnerable to the impact of these forecasts. Proactive planning is essential to protecting our outdoor recreation areas and natural resources. Improved preparedness, outreach and education, and warning systems are essential to help mitigate these detrimental impacts. As such, preparing for—and adapting to—climate change requires an interdisciplinary effort. With finite resources, the challenge for outdoor recreation providers is to find creative and effective strategies to increase resiliency through their operations, programs and management.

Resiliency

At more than one hundred years in age, the State’s outdoor recreation system has its own historic value. Our parks, canals, buildings and other irreplaceable relics of New York’s history are periodically assessed and—when needed—upgraded. Improving, renovating and retrofitting these facilities not only helps make them more appealing to today’s visitors, it reduces their carbon footprint and helps to protect them from the effects of a changing climate. As our recreation system becomes more storm-resilient, wildlife habitat is enhanced, trails and playgrounds are protected, and waterfront access is safer.

The State’s resiliency efforts include incorporating green stormwater infrastructure into its facilities and restoring natural systems such as marshes, streambanks and wetlands, which retain and infiltrate water and provide a buffer against flooding and other natural hazards. Trails and greenway connections are being made to link open spaces and provide a carbon-free transportation option. Ongoing planning ensures that the public’s valued collections of art, furniture, books, textiles and other artifacts at state historic sites are appropriately maintained and protected.

Hurricane Sandy was a game-changer for NYS, showing the potential magnitude of weather-related impacts on our coastal communities. In the aftermath of the storm, the Governor established a preparedness research center, the **NYS Resilience Institute for Storms and Emergencies (NYS RISE)**, to better prepare the state for future storms. The initiative brings together leading thinkers from academia, government, and first responders to study storm risks in NYS coastal communities.



Empty pilings are visible at Robert Moses State Park on Long Island after Hurricane Sandy destroyed an extensive pier system (photo from October 29, 2012). The Fire Island Inlet bridge can be seen in the background.

A **2016 study** evaluating the effects of marsh systems on upland damage during Hurricane Sandy found that coastal areas with large marsh systems contributed to a 10% average reduction in property damage. Lake Ontario also experienced record high water levels in 2017, and even higher water in 2019 that caused significant impacts to communities and outdoor recreation. Existing marshes in many coastal areas face two significant problems that must be addressed if the marshes are to maintain their storm protection capabilities: chronic erosion from waves and boat wakes and loss of marsh areas due to sea level rise.

The repercussions of climate change on recreation are immediate and ongoing and will increasingly affect management decisions in our parks and open spaces. OPRHP is investing some \$35 million in federal disaster relief funds for projects, designed to help mitigate flooding and improve the overall water ecology in targeted high-risk parks. Drainage infrastructure at Jones Beach State Park, for instance, will be upgraded to better filter stormwater and make critical facilities more resistant to flooding. At Roberto Clemente State Park in the Bronx, disaster relief funds were used to renovate a lower plaza and esplanade to include an intertidal pool, as well as replace the park's damaged bulkhead. In addition to giving these important gathering places a makeover, these improvements help create a more resilient public recreation system.

Statewide Efforts

In 2011, the NYS Energy Research and Development Authority (NYSERDA), published a technical report, **Responding to Climate Change in NYS** (ClimAID), which assessed climate change impacts on a statewide basis. Completed by researchers from Cornell University, The City University of NY, Columbia University, and NYSERDA, the report—updated in 2014—identifies both observed and projected climate changes in the State. It identifies regional vulnerabilities; considers social, economic, public health issues, and looks at the potential for “cascading” environmental impacts. The authors asked how the State can best anticipate and plan for its response to these impacts. Who is most vulnerable, and how can we help them? What are potential impacts to agriculture, the power grid, telecommunication, transportation? The report provides some answers and ideas for adaptation and mitigation, and makes recommendations for potential actions to be considered by policy and decision makers in NYS.

Regional Efforts

Lake Ontario Resiliency and Economic Development Initiative (REDI)

In 2019, the Governor established a multi-agency task force and committed \$100 million to rebuild communities along the Lake Ontario shoreline that were devastated by flooding in 2017. A plan will be developed to address continued high water levels and flooding along the lakefront and strengthen the region's local economy, which is heavily dependent on summer tourism. The approach developed by REDI, and any subsequent investments resulting from its recommendations, will take into account the new reality facing these communities. The commission will also examine areas along the St. Lawrence River that have been heavily impacted by high water levels to determine additional measures that can be taken to improve resiliency in those communities.

Great Lakes Coastal Resilience

According to the **National Organization for Atmospheric Administration** (NOAA), NYS has 2,625 miles of coastline, with more than 15 million people living in coastal areas. The regional economy in many of these communities relies on recreation and tourism. The long stretches of coast that border Lakes Ontario and Erie in NYS, are vulnerable to climate change impacts. Changes that may affect outdoor recreation include shore erosion, an increase in harmful algae blooms, shifts in the range and distribution of some plants and animals, and increases in invasive species. A number of online resources for recreation providers are available for planning efforts. The **Great Lakes Coastal Resilience Planning Guide** provides strategies and tools for addressing flooding, shoreline erosion, and lake-level fluctuations that can impact recreation facilities. The guide has specialized maps, data, apps, and interactive mapping services specific to the region. Another regional resource, the **Great Lakes Climate Centers**, has information and research data on projected climate impacts on forestry, agriculture, and natural ecosystems.

Lake Champlain Management Plan

With shorelines in New York, Vermont, and the Canadian Province of Quebec, Lake Champlain is a valued destination for recreation and tourism. The health of its waters and ecosystems is crucial for it to remain a recreational and economic engine for the region. Pressures on the lake today, which include the spread of aquatic invasive species, algal blooms, impacts from water control devices such as dams, erosion and sedimentation, will likely increase with more frequent and intense weather events. The **Lake Champlain General Management Plan** was developed in partnership with the NY District, U.S. Army Corps of Engineers and the Lake Champlain Basin Program, to establish goals for flood resilience and climate change impacts to communities and habitats in the basin. The plan provides flood risk analyses and considers habitat restoration projects and other actions that can help address these issues.

Hudson River Programs

The Hudson River is connected to the sea, which is why it experiences tides and contains saltwater in its lower reaches. It is also the reason the river's water level is rising with global sea levels—15 inches since 1900. Since 1987, DEC's **Hudson River Estuary Program** (HREP) has implemented restoration projects, education programs, research, and natural resource conservation in the Hudson River Valley, which stretches from the Verrazano Narrows in NY Harbor to its northernmost tidal range at the Troy Dam near Albany. Scientists project another 4 to 10 inches of sea level rise in the 2020s, and from 9 to 27 inches by mid-century. A higher sea level will exacerbate flooding and put waterfront communities at risk. HREP's 2015-2020 **Action Agenda** provides an implementation program based on a shared vision for the region as defined by diverse groups of people who live and work along the river.



Low-lying public recreational sites such as Rock Island Lighthouse State Park are particularly vulnerable to higher water levels and flooding. The park is located on an island in the St. Lawrence Seaway, a deep draft waterway extending from Montreal to mid-Lake Erie.

Hudson River Estuary Grants Program

Climate change impacts anticipated in the Hudson River region include increases in flooding, heat waves, drought, and sea-level rise. DEC provides funding through the **Hudson River Estuary Program** to help communities in the watershed increase resiliency to flooding and protect water quality, wildlife habitat, and other natural resources. Funded projects have included (recipients in parentheses):

Flood Mitigation, Green Infrastructure & Stream Habitat

- Stream habitat: Roeliff Jansen Kill-Copake and Hillsdale (Trout Unlimited), Black Creek-Esopus (Tighe & Bond)
- Flood mitigation: Poesten Kill Creek-Poestenkill, Grafton, Brunswick, Sand Lake, Berlin, Troy (Rensselaer Plateau Alliance)
- Green infrastructure: Harlem River and Staten Island (NYC Parks)

Climate Resiliency

- Climate Adaptive Designs, Planning & Resilience Task Forces/Networks: Catskill, Hudson, Kingston, Stony Point, Piermont, Albany County watersheds (Pace University)
- Climate Smart Communities adaptations: Ancram, Town of Athens, Village of Athens, Beacon, Cairo, Coxsackie, Fishkill, Hudson, Kingston, Pleasant Valley, Poughkeepsie, Town of Red Hook, Village of Red Hook, Village and Town of Rhinebeck, Wappingers Falls, Saugerties.

Funding is also available for river access and education, habitat, research and monitoring.

See Chapter 6 for more information on the Hudson River Estuary Program.

Hudson River National Estuarine Research Reserve (HRNERR)

In 1982, four tidal wetland sites in the Hudson River Estuary were designated by DEC as the **Hudson River National Estuarine Research Reserve**. Each site contains different kinds and combinations of tidal habitats found within the Hudson River estuary, and provide living field laboratories for estuarine research, stewardship and education. The Reserve is part of the National Estuarine Research Reserve System, which includes 29 reserves in 23 states and Puerto Rico. In 2019, HRNERR published a **management plan** in partnership with DEC and NOAA that describes major programs for the Reserve and lays out objectives and strategies for the next ten years.

Nearly 5,000 acres of tidal wetlands in the Reserve represent the diverse plant and animal communities of the Hudson Estuary, which include Stockport Flats in Columbia County, Tivoli Bays in Dutchess County, and Piermont Marsh in Rockland County. Reserve staff and partners conduct studies of the Hudson River ecosystem, which provides a solid foundation for programs in education, outreach, training, stewardship and restoration. Education and outreach are a key component of the Reserve's mission. Among their offerings are:

- interpretive exhibits,
- community events for the public,
- information and training sessions for coastal decision-makers,
- workshops for teachers, and
- field-based programs for middle school, high school, and post-secondary students.

Free canoe programs for adults and children allow the public to paddle with a naturalist to explore tidal marshes, observe birds and wildlife, and look for specialized plants.



Freshwater tidal wetlands on the Hudson River

Resiliency Strategy: Shoreline Restoration

Hudson River Park, Greene County, NY

A small waterfront park on the Hudson River in Coxsackie, NY offers a quiet spot for people to enjoy river views and launch their kayaks. Historically, this was a working waterfront, where goods from local factories and farms were loaded and sent down river to New York City. A relic of the village’s maritime past is still visible today in the water at low tide: the outline of the steamship Storm King, which sank here in 1938.

During the 20th century, shoreline erosion was addressed by adding material dredged from the river bottom, much of which is still in place at the site. Over the years, other attempts at stabilizing the shoreline included installing rip-rap on the northern bank and building a stone wall and sheet metal bulkhead on the eastern bank. Despite these efforts, by the early 2000s the park was gradually diminishing in size from erosion.

In 2012, a shoreline restoration project was completed at the park, helping to establish a more natural edge with native plantings, and boulders installed in the intertidal zone, to protect the shore from wave action and ice erosion. The final design created three terraces with a shallow slope, planted with native vegetation. The design also ensured that visitors are still able to access the river here, on foot or with kayaks. State permits required that the restoration avoid impacts to the historic ship, as well as limit any potential damage to benthic species (organisms that live in shallow water and are an important food source for larger species).



The Storm King, a steamship that sank in 1938, is still visible in the water at Hudson River Park in Coxsackie, NY. (Google Maps)

Completed in partnership with OPRHP, DEC’s **Hudson River Sustainable Shorelines** program, and Stevens Institute of Technology, the project demonstrates that a restored natural shoreline can provide erosion protection and improved natural habitat while still allowing for recreational use. Local volunteers helped with the restoration work, which engaged the community and encouraged area residents to be future stewards of the site.



Volunteers from the local community helped install the native plantings that protect the shoreline from erosion.

Top left: Site before restoration

Bottom right: Completed restoration

New York City Region

Parks and public open space in all five boroughs of NYC have a strong presence along its rivers, bays, canals and oceanfront areas, making them especially vulnerable to storm surge, winds and flooding. These green and open spaces are also increasingly recognized as a first line of defense against sea level rise and flooding. As a vital urban center surrounded by water, NYC and policymakers and stakeholders in the region have taken a wide range of actions to prepare for future impacts.

NYC has established a multitude of initiatives and resources to help businesses, residents and agencies address issues related to climate change. These include:

The Mayor's **Office of Climate Policy and Programs** leads the City's program for climate action. Programs include:

- New York City's **Green New Deal**, announced in 2019, is a plan to address global warming issues. Comprised of \$14 billion in new and committed investments, as well as legislation and specific actions, with the goal of reducing the City's emissions by nearly 30 percent annually by 2030.
- **OneNYC 2050** is a vision and implementation plan that proposes actions the City will take to address ongoing and anticipated climate issues. Published in April 2019, a primary goal for 2050 is to ensure that all NYC neighborhoods have high-quality parks available to everyone regardless of race, gender, ethnicity, or disability. Input from NYC residents helped shape the discussion.

The Mayor's **Office of Recovery and Resiliency** addresses the challenge of climate change with urban planners, architects, engineers, lawyers, and policy experts to employ science-based analysis, policy and program development, and capacity building, with the goal of better understanding and addressing the challenges NYC anticipates in the coming decades.

To aid in recovery and promote rebuilding after Hurricane Sandy, the NYC Department of City Planning (DCP) created special zoning rules for floodplains. Neighborhood and citywide studies help identify resiliency issues related to residential, commercial and industrial areas. To allow the city to incorporate long-term resiliency when designing or retrofitting existing buildings, DCP also released preliminary recommendations regarding zoning in coastal flood areas.

New York Harbor

With more than 8.6 million people living in NYC—many in waterfront neighborhoods at elevations near sea level—NYC is particularly vulnerable to the growing impacts of climate change. Public spaces and parks in the City are often in waterfront floodplains or other flood-prone areas. Many initiatives, programs, and projects are underway to increase resiliency in the region; below is a sampling.

The NY District of **U.S. Army Corps. of Engineers (COE)** has developed both water- and land-based measures for high-risk coastal areas in the New York/New Jersey Harbor. These include shoreline structures such as levees, floodwalls and seawalls, beach nourishment (replenishing sand or other materials that have eroded or been washed away), and storm-surge barriers. The COE findings and recommendations take into account the many ongoing, planned projects and studies by other federal agencies, states, New York City, and other municipalities.

Living With the Bay is a statewide resiliency effort from the Governor's Office of Storm Recovery. It identifies projects and prioritizes interventions that will serve as prototypes for addressing resiliency goals. Increased resiliency will be achieved using green infrastructure for capturing stormwater runoff, restoring coastal marsh areas to soften wave action, and building seawalls above flood and storm surge elevations. The report also serves as a guide for administering federal disaster recovery funds.



Artist's rendering of the "Big U," a plan to increase the resiliency of lower Manhattan. Elevations in this area range from 5' to 10' above sea level, and the floodplain is home to approximately 220,000 people.

Rebuild by Design is a design competition launched by the U.S. Department of Housing and Urban Development (HUD) as a response to Hurricane Sandy. Designers world-wide were asked to develop innovative solutions to increase the NYC region's resilience. Teams of scientists, engineers, designers, and architects spent months studying the vulnerabilities of Sandy-affected areas and developing projects to address these areas. In 2014, HUD awarded \$930 million to seven winning ideas, each comprising multiple phases. One winning project, titled "**The Big U**," envisions a continuous protective system along 10 miles of low-lying geography in lower Manhattan, which would incorporate berms, levees, bridges, and elevated walkways to help protect this extremely dense and active urban area from future climate risk. Together, HUD and NYC committed nearly \$1 billion toward implementation of the Big U.

After Manhattan's Lower East Side was severely damaged by flooding during Hurricane Sandy, NYC initiated the **East Side Coastal Resiliency Project** (ESCR) to develop a coastal protection system designed to reduce future impacts of flooding. The result of years of planning and cooperation among city, state, and federal agencies, community partners and residents, ESCR proposed a 2.4-mile flood protection system to protect lower Manhattan from storm surge and sea level rise. The system incorporates floodwalls of three to eight feet tall, an elevated and reinforced bulkhead, a raised esplanade, and deployable drainage infrastructure. To be constructed within City parkland and streets and offer comprehensive protection, the project will be engineered above **FEMA's 2050 projected elevation**. The system will provide improved coastal protection to more than 110,000 vulnerable New Yorkers, an enhanced waterfront, improved ecology, and more resilient public urban spaces. Design components are being reviewed by stakeholders and adjusted as the project moves forward.

In 2019, NYC released the **Lower Manhattan Climate Resilience Study**, a comprehensive look at current and future climate risks and impacts on Lower Manhattan as a part of the Lower Manhattan Coastal Resiliency project. The study identified approximately \$500 million worth of investments in climate resilience and developed an overall strategy of both capital projects and additional planning for increasing the climate resilience of Lower Manhattan. The **Lower Manhattan Coastal Resiliency Project** (LMCR) is an initiative aimed at implementation of coastal protection strategies to increase resiliency while preserving public space and access to the water.

Long Island Region

The **Ocean Action Plan** (OAP) was released by DEC in 2017 as a coordinated effort to maintain healthy ocean ecosystems. Some of the State's largest and most popular parks are its beaches and marine ecosystems. Reaching from NYC to the tip of Long Island, the State's ocean waters include those immediately offshore and to the edge of the continental shelf. Plan goals include promoting sustainable growth while increasing the resilience of ocean resources to climate change impacts, and providing guidance on mitigating the effects of shoreline erosion, extreme weather and sea-level rise. Recognizing that people are an integral part of any ecosystem, and that ecosystems are vital in supporting human life, the OAP uses an ecosystem-based management approach, which emphasizes the necessity of sound scientific understanding and strong partnerships to address complex and often contentious issues. Given the interconnectedness of ocean waters with other waterbodies, the relationship with estuaries and their habitats is also examined, to include the Peconic, Hudson River, and NY-NJ Harbor Estuaries, Long Island Sound, and the bays of the south shore of Long Island—Great South Bay, Jamaica Bay, Moriches Bay, Hempstead Bay, and Shinnecock Bay.

The **Long Island Sound Comprehensive Conservation and Management Plan** (CCMP) was approved by the states of Connecticut and New York and the U.S. Environmental Protection Agency in 1994. Since then, the annual discharge of nitrogen has been reduced by 40 million pounds, nearly 1,625 acres of habitat has been restored, and more than 300 miles of fish passages have been reopened. These efforts involved hundreds of thousands of people, via education and volunteerism. In 2015, a revised CCMP was developed to help attain more ambitious ecosystem goals over the next 20 years.

The **Peconic Estuary Comprehensive Conservation and Management Plan** (PEP) was originally published in 2001 as a blueprint for restoring and protecting the waters of the Peconic Bays. Located at Long Island's east end, the estuary encompasses over 100 harbors, embayments, tributaries, 5,680 acres of tidal wetlands, and is home to more than 100 rare plants and animal species. Tourism and recreation are central to the local economy, with restaurants and marinas that cater to recreational fishermen, nature enthusiasts, boaters, bathers, and hunters. The ecosystem here supports commercial fin and shell fishing, and other water-related commercial and recreational activities. Climate change is profoundly impacting the estuary, increasing water temperatures, changing precipitation patterns, raising the sea level, and increasing acidification. A revision of the 2001 **PEP** is underway to reflect the new issues affecting the estuary.



Peconic Estuary

Sustainability Efforts: OPRHP

Conversion to clean energy sources at OPRHP facilities is a top priority for reducing the State's carbon emissions. In recent years, the agency has accelerated its solar implementation program, in part by training in-house staff in system installation. With the completion of solar installation projects planned through 2019, OPRHP facilities will have the capacity to capture around 2,274,000 kWh of solar energy annually. Park projects have included: light poles with solar cells and battery storage, and off-grid battery operated systems.

Sustainable Practices

A range of progressive programs have been implemented by OPRHP, with targeted goals for recycling, water conservation, landscape practices and green cleaning. In order to foster a culture of energy efficiency, more than 150 employees have been trained in green technologies including energy auditing, High Efficiency Air Conditioner (HVAC) repair, and Green Professional Certification.

Solar Energy at OPRHP

In-house Solar Installations: (partial list)

- Discovery Center
Niagara Falls (9kW)
- Letchworth Visitors
Center (25kW)
- Allan Treman (25kW)
- Robert Moses Field
Houses (34kW)
- Grafton Lake (12kW)
- Keewaydin (10kW)
- Fort Niagara (50kW)
- Letchworth Nature
Center (36kW)
- Peebles Island (144kW)

Total: 1,192kW

Contractor Installations

- Taconic Regional HQ:
12kW
- Thacher Park Visitors
Center: 26kW
- Grafton Lake Police
Station: 8kW
- Peerless Pool: 101kW

Total: 147kW

Fossil Fuel Reduction

Since the inception of the clean fueled vehicle program in 1998, OPRHP has eliminated the need for over 800,000 gallons of gasoline and diesel. The agency has more than 1,000 registered electric, hybrid, propane, compressed natural gas, bio-fuel or hydrogen powered vehicles and equipment, and, as of 2018, 40 electric vehicle charging stations were available at facilities across the state, and 40 additional stations are to be installed in 2019.

Waste Management

Efforts to reduce landfill contributions from State parks include providing recycling opportunities in every park that is not a "Carry-in/Carry-out" facility, with plans to add 1,500 new recycling bins over the next five years. When possible, OPRHP also reduces waste flow by purchasing used equipment through the NYS Office of General Service State and Federal Surplus Program. More than 7,000 items have been acquired, including heavy machinery, office furniture, tools and building supplies, that would otherwise have been sent to landfills.



A 144-kilowatt solar array installed by OPRHP staff at Peebles Island, a 190-acre state park located at the confluence of the Mohawk and Hudson Rivers.

Water Conservation

OPRHP is in the process of developing a comprehensive water plan, with goals to reduce water usage and protect water quality throughout the park system. A water audit of park facilities was conducted in 2017–18, and a pilot water conservation project was launched at Rockland Lake State Park. Partnering with the **Rochester Institute of Technology’s Pollution Prevention Institute**, OPRHP developed an agency vehicle washing system that uses recycled water to clean chemicals from the undercarriages of vehicles and equipment which will be operational in 2019.

Carbon Reduction

OPRHP’s regions are incentivized to cut down on their contributions to climate change by reducing their greenhouse gas emissions and reducing their carbon footprint. Buildings are being converted from oil to natural gas, and new energy-efficient systems installed. Over the next decade, OPRHP aims to become electric energy neutral by 2030, generating 100% of its power from the sun.

OPRHP has made greenhouse gas reduction a fundamental goal and will continue to implement projects that lower emissions at its facilities. Utilizing construction methods and materials that reduce long-term energy consumption is a commitment that will make the recreation system more efficient, self-sustaining and require less maintenance.

Landscape Management

Since 2012, OPRHP has allocated more than \$18 million toward invasive species control and habitat restoration projects that promote species diversity and improve ecosystem resilience. Ecological restoration efforts have included work at Buckhorn Island, Beaver Island, and Allegany State Parks to restore and enhance ecosystem function. Enhancing wetland habitat, improving shoreline resiliency, and invasive species management actions helps improve ecological diversity and increase resistance to invasive species. OPRHP has developed an Invasive Species Management Plan Template, designed to guide invasive species management plans and priority-setting at individual facilities.

OPRHP facilities are also decreasing lawn areas that require mowing. Less mowing means lower fuel consumption, reduced fertilizer use and increased wildlife habitat. With a reduced mowing program in place since 2009, OPRHP has been able to prevent the emission of 1,777 metric tons of carbon dioxide into the atmosphere, saving more than \$200,000 in fuel costs.

Anticipated Future Actions

As OPRHP continues to work towards reducing greenhouse gas emissions and improving resiliency, future efforts will include:

- building “smarter” before rebuilding in-kind; considering adaptation alternatives and long-term value. In some cases, this may involve changing current management practices, relocating or modifying infrastructure, and re-visioning recreational resources;
- prioritizing acquisition of open space to protect large natural areas, creating connected land and water corridors to reduce flooding, filter runoff and pollutants, improving species’ ability to move with a changing climate, and conserving habitat;
- assessing dams and culverts to meet new safety standards while recognizing that, in some cases, the best course of action may be removal, to increase flood capacity and improve natural habitat;
- relocating and hardening utility lines, phone lines, and septic systems;
- restoring and maintaining wetlands, estuarine systems and salt marshes within the OPRHP lands.
- innovatively adapting and retrofitting existing infrastructure; and
- partnering with public and private entities to improve resiliency.

OPRHP Sustainability Strategy: Adaptive Re-Use



OPRHP's Taconic regional office, formerly a school, in Staatsburg NY

OPRHP's Taconic Regional Headquarters is housed in a 1930 Dutchess County school building that has been retrofitted as an energy efficient and sustainable 21st century building. Adaptive re-use is the term for reusing an old building or site for a purpose other than it was originally designed. This approach can have several benefits over new construction, including cost savings, waste reduction, energy conservation, less consumption of new materials, and preservation of historic character.

OPRHP made use of adaptive re-use at its offices at Margaret Lewis Norrie State Park in Staatsburg. The vacant school house was retrofitted with energy-efficient technologies, and now houses staff responsible for OPRHP's Taconic regional operations.

The structure was updated with geothermal heating and cooling systems, solar panels, improved insulation, historically appropriate, energy efficient windows, and more efficient lighting. Increased ventilation rates and use of low emission glues, paints and carpets helped improve air quality. Other elements used in the renovation of the building included recycled building materials, water-conserving appliances, rain gardens, and permeable pavement. Hardscape was removed to increase stormwater infiltration and reduce site runoff.

In 2011, the building was awarded a Platinum certification through the Leadership in Energy and Environmental Design (LEED) Green Building Program, the first LEED Platinum award for a public building in NYS.

Sustainability Efforts: DEC

DEC is committed to reducing its environmental footprint and undertakes numerous sustainability projects each year. These projects range from diverting organics from landfills to reducing energy use, decreasing the agency's impact on the environment and saving money while modeling actions New Yorkers can take to improve the environment.

Reduced Energy Use

Since 1990, DEC has reduced energy use at approximately 250 facilities across the state. Projects include high-efficiency heating and cooling systems, energy efficient windows and doors, upgrading indoor and outdoor lighting to LEDs, replacing old hand-driers with energy efficient models, and adding motion-detectors so lights are off when spaces are not occupied. These efforts have reduced energy use by at least 40 percent. DEC is moving forward with additional energy reduction projects and will be installing computerized building management systems, high efficiency-low emissions biomass heating systems and continuing with LED lighting conversions. More information about ways to save energy and water at home are available on DEC's [website](#).

Waste Reduction

DEC's composting programs collect food scraps and other compostable materials at its Albany headquarters and at seven of the nine regional offices. Diverting food scraps and other compostable materials from landfills helps reduce greenhouse gas emissions, creates green jobs, and conserves landfill space. These efforts have diverted more than 17 tons of organic material from landfills (2019 data).

Carbon Emission Reduction

DEC has approximately 740 plug-in, alternative fueled, or hybrid vehicles in its fleet of approximately 1,800 light-duty vehicles. In addition, DEC now has 58 short-range electric vehicles operating at its facilities, including campgrounds and day use sites. These vehicles help lower greenhouse gas emissions, reduce air pollution, and save money; compared to gasoline-powered cars, EVs are more energy efficient and cost about 50 to 70 percent less to operate per mile. DEC is also installing electric vehicle chargers at its facilities for workplace, fleet, and public charging.

DEC's **Regional Greenhouse Gas Initiative (RGGI)** was the first mandatory market-based emissions trading program in the U.S. to reduce carbon dioxide (CO₂) emissions, and the first anywhere to use a cap-and-invest model for reducing pollution. With this initiative, New York, Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, Rhode Island and Vermont agreed to set a cap for total emissions of CO₂ from electric generation facilities. Since 2005, these states have collectively decreased CO₂ emissions from RGGI-affected power plants by more than 45%.



Dedicated in 2017, Five Rivers Visitor Center in Albany County is DEC's first Platinum LEED building, certified by the U.S. Green Building Council.

Climate Change Mitigation

Projected climate change impacts on natural resources, public health, agriculture, transportation, tourism, water supply and quality, public infrastructure, and energy all have the potential to affect outdoor recreation. Recreation providers in NYS have access to a range of resources and programs offered by DEC to support efforts to address climate change impacts. These include:

- **Community Risk and Resiliency Act (CRRA)** is a NYS effort to mainstream consideration of climate change throughout the State's operations. It requires applicants for certain state funding and permits to address climate change risks and mitigate hazards due to sea level rise, storm surge, and flooding. Other requirements include:
 - *Official sea-level rise projections:* DEC is required to adopt science-based sea-level rise projections into its regulation procedures.
 - *Consideration of sea-level rise, storm surge and flooding:* Applicants for permits or funding in specified programs must demonstrate that future physical climate risk impacts have been considered, and DEC must consider incorporating these factors into certain facility-siting regulations.
 - *Guidance on Natural Resiliency Measures:* DEC, in consultation with the NY Department of State, will develop guidance on the use of natural resources and natural processes to enhance community resiliency.
- The State's **Climate Action Plan** sets the State's goal to reduce greenhouse gas emissions by 80% below levels emitted in 1990 by the year 2050.
- The **Climate Smart Communities** program provides guidance to local governments on best practices for mitigating and adapting to climate change. Its goal is to create a network of NYS communities engaged in reducing greenhouse gas emissions and improving climate resilience.

Wetlands

Protecting wetlands is a priority in New York, and the State has a strong wetlands conservation program. The Freshwater Wetlands Act states: "It is the public policy in the State of New York to preserve, protect and conserve wetlands and the benefits derived therefrom, to prevent despoliation and destruction of wetlands, and to regulate use and development of such wetlands to secure the natural benefits of wetlands, to preserve and protect tidal wetlands, and to prevent their despoliation and destruction, giving due consideration to the reasonable economic and social development of the State."¹ consistent with the general welfare and beneficial economic, social and agricultural development of the State."

NYS recognizes that wetlands provide many benefits and functions—including recreational—and works through its agencies to protect and manage this resource. For the purposes of this plan, the broadest concept of wetland is used, to address all wetlands, not just those protected by regulatory programs.

Value of Wetlands

Along with the many environmental benefits that wetlands provide, their importance is increasingly recognized as a protective mechanism against climate change impacts. With more frequent, higher-intensity storms anticipated, preserving and restoring wetlands is more important than ever. Some functions and benefits that wetlands provide include:

¹ Article 24 of the Environmental Conservation Law, Freshwater Wetlands Act

What is a Wetland?

Natural areas in which water covers the soil or is present at or near the surface, all or part of the year, including during the growing season, are considered wetlands.

Common types include:

Fringe wetlands – areas of surface water, including ponds, lakes or streams found on the water edge of oceans, inland estuaries, and lakes. Types of wetlands include:

Depressional wetlands – low areas which reach into the groundwater layer; e.g., the prairie potholes of the American Midwest, and vegetated ponds of Long Island.

Hillside seeps or slope wetlands – where groundwater emerges at the surface, usually on a slope.

Freshwater Wetlands – areas that support primarily hydrophytic (water-loving) vegetation that survive only where they find hydric (wet) soils, such as marshes, swamps, bogs and fens.

Tidal wetlands – wet areas that border on tidal waters, and/or with connections to ocean water and which are subject to tides and have water-loving vegetation.

A wetland can also occur where surface water is trapped in a shallow depression over soil that will not allow the water to seep downwards, such as the clay soils found in the Great Lakes region.

Flood and Storm-water Control—In periods of heavy rain or spring snow melt, wetlands serve as natural reservoirs, storing and slowing water. Filling in wetlands can increase flood risk, both locally and far downstream.

Climate Change—Wetlands act as a “carbon sink” to help capture and store carbon, keeping it out of the atmosphere.

Recreation—In NYS, over 12 million people annually go hiking, bird watch, hunt, fish, boat, camp and photograph wildlife, often in natural areas associated with wetlands.

Erosion and Sedimentation Control—Wetland vegetation decreases water velocities, allowing suspended particles to settle out and keeping them out of navigational channels, lakes and reservoirs. Wetlands also help reduce shoreline erosion and preserve agricultural lands by protecting inland areas from wave action or high stream flows.

Water Quality—As runoff filters through a wetland system, microorganisms break down and use nutrients frequently found in agricultural runoff, such as nitrogen and phosphorus, which can contribute to algal blooms. Wetlands also protect drinking water in coastal areas by preventing saltwater from seeping into groundwater and contaminating the aquifer.

Recharge of Groundwater Supplies—Wetlands help recharge groundwater. This function is especially important in communities where groundwater is a primary source of drinking water.

Open Space—Wetlands are an important part of a healthy open space system, often the only undeveloped areas along crowded waterfronts or in urbanized areas. As sea levels rise, protecting open space where wetlands can migrate upland will be critical to their continued existence and function.

Wildlife Habitat—Many species of fish and wildlife depend on healthy wetlands for critical parts of their life cycle. By providing breeding, nesting, and feeding grounds and cover, tidal wetlands are vital to the continued health of vertebrate and invertebrate species of the State’s marine district. Over two-thirds of the fish, shellfish and crustaceans harvested in NYS (both commercial and recreational) are dependent on wetlands for some portion of their life cycles.

Biological Diversity—Local, regional and global biological diversity are essential to human existence. Wetlands are unique, natural communities that contribute significantly to the State’s overall diversity, providing habitat for many rare and indigenous plant and animal species.

Nutrient Production and Cycling—Wetlands are one of the most ecologically productive systems on earth, converting sunlight and nutrients into food for animals. They filter sediment and organic and chemical nutrients, which break down and re-enter the food web.

Educational and Scientific Research—Wetlands provide outdoor laboratories for science and living classrooms for schoolchildren, providing educational resources for a wide range of study.

Wetlands Program Implementation

In NYS, the DEC has lead responsibility for wetland conservation. Several organizational units implement the State's wetlands protection program:

- **Division of Fish, Wildlife and Marine Resources**—holds primary responsibility for both tidal and freshwater wetlands
- **Division of Lands and Forests**—lead for acquisition activities
- **Division of Environmental Permits**—processes regulatory permits
- **Division of Law Enforcement and Legal Affairs**—supports enforcement efforts
- **Division of Water**—administers Clean Water Act-directed or funded programs that afford additional water quality programs from which wetlands benefit
- **Adirondack Park Agency**—administers the Article 24 permitting program in the Adirondack Park and administers land-use regulations related to wetlands. The APA uses sophisticated GIS approaches to mapping wetlands in a watershed approach, providing the State with important tools for planning and protection

Many stakeholders are involved with wetlands conservation in the State. Following is a listing of State agencies (see Chapter 4 for a discussion of the many watershed, ecosystem-wide programs that are currently working on multi-benefit resources in NYS).

State Agencies

NYS Department of State (DOS)—administers the Coastal Zone Management Program and performs coastal consistency reviews on federal projects related to wetlands conservation. DOS also provides grants for Local Waterfront Revitalization Plans and watershed management guidance for localities along the State's coastlines and designated inland waterways.

Office of Parks, Recreation, and Historic Preservation (OPRHP)— As a significant landowner in NYS, OPRHP conserves and manages wetlands on state parklands, and has a vital role in biodiversity conservation on its public lands. With DEC, OPRHP jointly produces and updates the **NYS Open Space Conservation Plan**.

NY Attorney General's Office—the State's legal representative; litigates wetlands cases in both federal and state courts to ensure they are afforded the protections available under law. The NYS Attorney General's Office also advocates for wetlands protection, in consultation with federal, state and local agencies, and by advancing progressive positions in various legislative and administrative forums.

Department of Transportation (DOT)—affects wetlands through design and implementation of highway construction and maintenance. DOT's Environmental Benefits Initiative implements beneficial environmental projects in conjunction with ongoing highway work. DOT has constructed, restored, and provided access to wetlands as part of this award-winning program.

Office of General Services (OGS)—administers much of the State's surplus lands and all underwater lands not explicitly deeded to private or other public entities.

Canal Corporation—owns, operates and maintains the NYS Canal System under the purview of the NYS Power Authority; implements the Canal Recreationway Plan leading state efforts to develop the Canalway Trail.

Federal Agencies

U.S. Army Corps of Engineers (COE)—administers Section 404 of the Clean Water Act, which regulates the discharge of dredged and fill spoil material into U.S. waters, including most wetlands. In recent years, the COE has become actively involved in restoration of the nation's waters and wetlands, including efforts on the Hudson River, upper Susquehanna, and Niagara Rivers.

U.S. Environmental Protection Agency (EPA)—oversees administration of Section 404 of the Clean Water Act, which regulates the discharge of dredged or fill material into U.S. waters, including wetlands. Supports state and local wetlands programs through funding grants that support research, restoration, education and outreach efforts, watershed planning, monitoring, and water quality maintenance.

U.S. Fish and Wildlife Service (USFWS)—administers the National Wildlife Refuge System and the Federal Endangered Species Act, which helps protect critical habitat. With DEC and other partners, USFWS implements the North American Waterfowl Management Plan, which includes wetlands conservation and a variety of acquisition, management, and restoration activities. They cooperate with the Natural Resources Conservation Service to restore wetlands and other habitats. USFWS administers the Partners for Fish and Wildlife Program, a voluntary, community-based stewardship program for fish and wildlife conservation on private land. They also map wetlands under the National Wetlands Inventory (NWI) program.

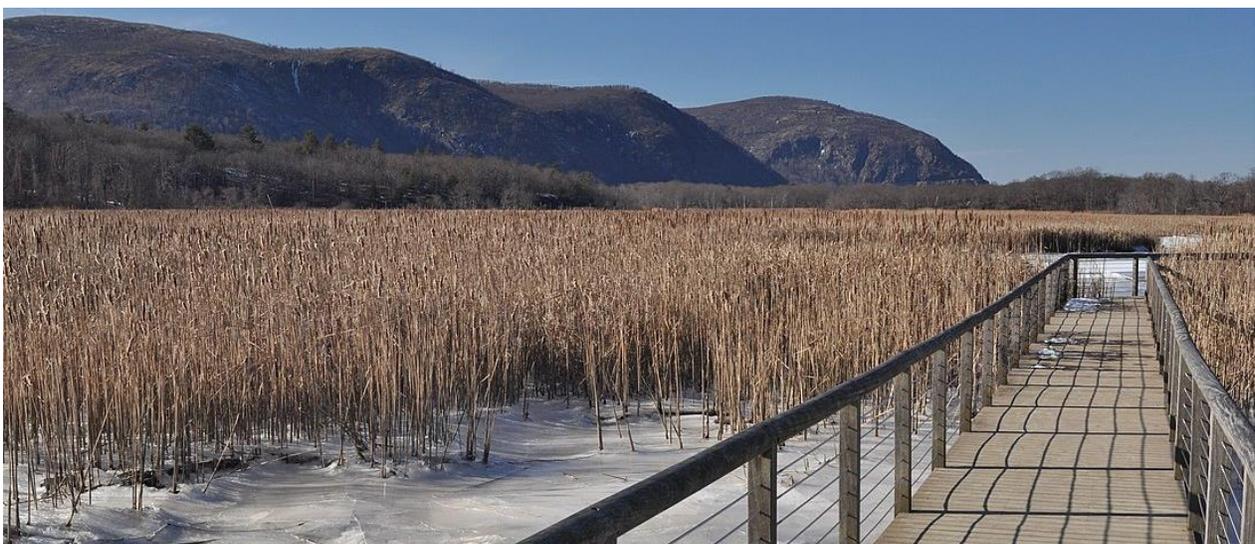
U.S. Department of Agriculture’s (USDA) Natural Resources Conservation Service (NRCS) with the Farm Services Agency—administers the conservation provisions of the 2018 Food Security Act (Farm Bill). Through the Wetlands Reserve Easements component of the Agricultural Conservation Easement Program, NRCS helps restore, protect and enhance wetlands and helps reduce agricultural nutrient runoff to surface waters and wetlands.

USDA Farm Services Agency—administers certain provisions of the Food Security Act, especially the Conservation Reserve Program (CRP). The latest program elements include the Continuous Sign-Up CRP and the Enhanced CRP, which have become the primary means of establishing riparian buffers in NYS.

U.S.D.A Farmer’s Home Administration—places easements on some of its inventory of repossessed farmland and may forgive loans if the borrower places easements on wetlands.

National Marine Fisheries Service (NMFS)—coordinates and comments on permits that may affect coastal wetlands. In recent years, NMFS has participated in coastal wetlands restoration efforts.

Federal Highway Administration (FHWA)—supports efforts of state transportation agencies; implements the Intermodal Surface Transportation Efficiency Act (ISTEA) as it relates to wetlands and mitigation and provided a \$500,000 planning grant to NYS DOT and DEC to update and digitize National Wetlands Inventory maps to improve capacity for planning to protect wetlands and other aquatic resources.



Constitution Marsh, east shore, Hudson River, Garrison, New York



***Lobelia cardinalis* (cardinal flower), a native plant often found in wetlands**

Local Government

Because most land-use decisions are made at the county, town, city and village levels, local governments are important stakeholders in wetlands conservation. With approximately 1645 local governments in NYS, their effects on wetlands vary greatly. The following organizational units may be involved with wetlands:

- planning departments
- tax assessors zoning boards and zoning boards of appeals
- soil and water conservation districts
- county cooperative extensions
- environmental management councils
- town conservation advisory commissions (or boards)

Other Stakeholders

Conservation Organizations—An estimated 50 nongovernmental organizations in NYS participate in wetlands conservation. Some specifically address wetlands issues; others include wetlands conservation as part of their mission. Key participants include Ducks Unlimited, The Nature Conservancy, local chapters of the Sierra Club and the National Audubon Society.

Academic Institutions—Many academic institutions in NYS offer curricula related to wetlands or conduct wetlands research. Key institutions include Cornell University, State University of New York (SUNY) College of Environmental Science and Forestry at Syracuse (ESF), and SUNY School of Marine and Atmospheric Sciences at Stony Brook. DEC recently entered into cooperative agreements with several SUNY colleges for interns to assist with wetlands delineations, compliance inspections, and mapping.

Landowners—Private, individual landowners own a majority of the wetlands in the State, and their activities can have a significant impact on the quality or quantity of these wetlands. With the advent of federal and state restoration efforts, many landowners have willingly volunteered to restore wetlands on their property and become good stewards of the resource.

Other Citizens—All citizens of the State benefit from wetlands protection. Many people support conservation organizations because of their support for wetlands. Citizens also provide political support or comments for wetlands programs and for site-specific activities, such as permits or acquisitions. In the late 1940s, efforts began on private lands to cooperatively manage for habitat, and over 1,000 small marshes were built for waterfowl.

Protection Strategies

Programs that affect wetlands in NYS listed below are organized according to their approach, into one of seven “mechanisms.”

Acquisition

Acquiring wetland areas helps guarantee protection or control of all or some rights as to the use of the land, usually the right to develop the land, which keeps the property in its undeveloped, natural state. Aside from purchasing land, acquisition also includes leases, conservation easements, donations, bargain sales, and transfers of development rights. In NYS, over 12,000 acres of freshwater wetlands were purchased under the 1972 and 1986 Acquisition Bond Acts, and DEC has also acquired 3,000 acres of tidal wetlands and associated inland buffers. In 1990, a third bond act failed to pass, but prompted development of the 2016 **State Open Space Conservation Plan** (OSP), now the major guiding document for all open space acquisition efforts in the State, including wetlands.



Tivoli Bays, an intertidal marsh system on the east bank of the Hudson River

Regulation

Governmental oversight and control of certain actions that may affect wetlands includes laws, rules and regulations, plus executive orders. In NYS, wetlands are regulated at three levels. Tidal wetlands are protected under the 1973 NYS Tidal Wetlands Act; the 1975 NYS Freshwater Wetlands Act regulates wetlands, and a limited number of local state governments also have local ordinances to protect wetlands. Some regulate wetlands explicitly, others through land use ordinances that target water resources. Some regulate only those wetlands not protected by State law; others regulate irrespective of State law. Nonetheless, not all wetlands are protected from all negative impacts, and losses continue to occur.

Planning

To be most effective, wetlands protection should be integrated into other land use protection efforts, and not addressed separately. The State has integrated wetlands planning and protection strategies into other plans, such as the Open Space Plan and the Great Lakes Plan, as well as other agencies' plans, such as the SCORP and the Coastal Resources Plan.

Restoration, Creation, and Management

Restoring and creating wetlands adds to the resource base, while management actions improve or maintain the quality of existing wetlands. *Restoration* brings back one or more characteristics of a healthy wetland system that has been lost or impaired by actions such as filling, draining, or polluting. *Creation* means making a new wetland by flooding or excavating upland. *Management* includes:

- *Enhancement*—altering or manipulating an existing functional wetland to increase selected functions. Best management practices (BMPs) are used to avoid negative impacts while undertaking an unrelated activity such as timber harvest.
- *Stewardship*—applying a conservation ethic to the land. Often entails more passive management, e.g., leaving a buffer area around a wetland in a pasture or a cultivated field.
- *Restoration and enhancement*—efforts on municipally owned lands were funded by the 1972 Environmental Quality Bond Act. More recently, programs to restore and manage wetlands have grown dramatically. Under the North American Waterfowl Management Plan, DEC and the USFWS are cooperating with landowners and other organizations to restore drained wetlands on agricultural land in the Northern Montezuma Focus Area. Other restoration efforts are underway in the Lake Champlain basin, the Hudson River, Great Lakes basin, Upper Susquehanna, Upper Chemung, and the Niagara River.

With the role wetlands can play in mitigating climate change impacts, it is expected that restoration will continue to be a focus of resources and attention in the coming years. Programs that specifically target wetland restoration include the NRCS's Wetlands Reserve Program, and funding sources that support restoration, including New York's Bond Act, Long Island South Shore Estuary Reserve, Peconic Estuary Program, and the **Hudson River Estuary Action Agenda**.

Incentives and Disincentives

Incentives are proactive, non-regulatory programs that encourage voluntary wetlands protection. In NYS, incentives are delivered through the Food Security Act conservation programs in which landowners are paid an annual rental fee or long-term easement payment for participating in a conservation program, such as the Wetlands Reserve Program.

Disincentives are programs that discourage alteration of or impacts to wetlands because they result in loss of a benefit, such as eligibility for federal funding. Incentives and disincentives are usually financial, but may include recognition, assistance, or good (or bad) public relations. These mechanisms are generally endorsed in discussions on improving wetlands conservation. However, as they usually involve financial motivation, they are difficult to implement.

Research

A primary mechanism for better understanding the function and value of wetlands, engaging in research and making inventories help identify threats and develop remediation and mitigation techniques. The State occasionally supports research efforts. Since 1990, EPA Wetlands Development grant funding has been available to increase capacity for wetlands protection. APA, DEC, and other NYS entities have used these grants to undertake an array of wetlands studies and inventories.

Education, Outreach, and Technical Assistance

Programs work best when developed and implemented in cooperation with all interested and affected parties. Understanding of the value of wetlands helps people make effective decisions and change their behavior. The state provides support to landowners to manage their own wetlands. Hands-on technical assistance may include teaching a farmer how to restore a wetland on converted cropland. Partnerships in wetland programs have increased dramatically in recent years and have helped improve conservation.

Inventories

Wetlands comprise about eight percent of the total land in NYS. An estimated 2.4 million acres are freshwater—hardwood, coniferous and shrub swamps, wet meadows, bogs and fens; about 25,000 acres are vegetated tidal wetlands—salt and coastal marshes. Statewide, approximately 80% of mapped wetlands meet the threshold for protection by the NYS Freshwater Wetlands Act. Wetland Inventory (NWI) maps, prepared by the USFWS, are available on the USFWS [website](#).

Wetlands are classified into one of four categories: Class I, which provide the most important functions or are functionally diverse, to Class IV, which provide fewer benefits. Currently, 26% of DEC-mapped wetlands are Class I; 54% are Class II, 17% are Class III, and two% are Class IV. The NYS **Natural Heritage Program**, a joint venture with The Nature Conservancy, also has a detailed classification system for the State's wetlands, including a determination of the class's rarity and threat at both global and state levels. NYS does not specifically classify wetlands as rare, threatened, or functionally diverse.



Salt marsh restoration, Sunken Meadow State Park, Long Island

Tidal wetlands are classified solely on their vegetated characteristics, and all tidal wetlands in NYS are considered critical state resources. The **Tidal Wetlands Act** requires that all tidal wetlands be mapped, and the 1974 inventory is available online. Currently, some 25,000 acres of vegetated tidal wetlands in the marine district are identified, classified as follows:

- **Coastal fresh marsh**—the upper tidal limits of riverine systems. This category accounts for about 5 percent of the vegetated tidal wetlands in NYS.
- **Intertidal marsh**—the area between average high and low tidal elevations. Includes about 60 percent of vegetated wetlands.
- **High marsh**—the uppermost tidal wetland zone. It includes about 30 percent of vegetated wetlands.
- **Formerly connected**—areas where tidal flow has been restricted either by human or natural causes. Includes about 5 percent of vegetated wetlands.

Wetland maps are available to the public at all DEC offices, at all local government clerks' offices and on DEC's website. For those using GIS, digital data on DEC-mapped wetlands is available through the **Cornell University Geospatial Information Repository**.

Historic and Contemporary Wetland Losses

Since colonization, NYS has lost an estimated 60% of its wetlands to draining, dredging, and filling. A statewide analysis that looked at freshwater wetland changes from the mid-1980s to the mid-1990s found that, after decades of loss, NYS saw a net gain of an estimated 15,500 acres of freshwater wetlands. Cause of wetland loss identified in the study included agriculture, urbanization, mining, development, beaver activity, modified hydrology (e.g., increased runoff), and plant succession. Agriculture caused the most loss (50%), but 76% of all gains were from the reversion of agricultural fields, as farmland drained decades ago was abandoned and has reverted to wetland. The study did not attribute significant gains in wetlands to beaver—a statistically insignificant 100-200 acres. However, beaver did cause a change of almost 198,000 acres in cover type, as their damming activities flooded shrub/scrub/forested wetlands, changing them to open water with emergent vegetation.

Finally, the greatest overall dynamic in the State's wetlands resulted from natural ecological succession, the process by which fields change to forests. The study noted a change in cover type in almost 120,000 acres of wetlands statewide. While a net gain of an estimated 15,500 acres of wetlands is wonderful news for the State, this study raises some concerns. For example, most net gains occurred in rural areas, while half the losses occurred in developed urban and suburban areas. The result has been a substantial geographic shift of wetland occurrence, which means also the benefits they provide, such as water quality protection and flood attenuation. A landowner living near a stream who now suffers more flooding from wetlands loss upstream will be little comforted by the increase in wildlife habitat in the surrounding rural area. Our urban population is therefore becoming more isolated from the open space and wildlife habitat associated with wetlands.

Significant losses of vegetated tidal wetlands are occurring in the intertidal marsh islands of Jamaica Bay. Between 1924-74, 780 acres of marsh islands were lost due to dredging and filling (unregulated activities up to 1974), and 510 acres were lost for other reasons. Historic maps from 1857-1924 show that the marsh islands would vary in size naturally—during periods with significant storms, there were losses of up to 10 acres per year. In years with less extreme weather, the marsh islands seemed able to rebuild. Since 1974, the loss of marsh islands has accelerated, most likely from dredging, higher storm surges, sea level rise, and erosion. The southern portion of Manhasset Bay, a vegetated marsh island that appears on the 1974 Tidal Wetlands map, is now completely covered by water.

Because intertidal marsh is critical to estuarine health and productivity, it is essential to give priority attention to issues impacting the entire marine district and develop remediation, restoration, research and monitoring strategies in these critical areas.

New York is still losing considerable amounts of wetland—an estimated 22,400 acres over the 10-year period studied, with over 8,000 acres lost to urbanization. An estimated 1,000,000 acres of wetlands in

NYS meet the statutory definition to be regulated but are not currently on DEC maps. There is a critical need to update wetland maps so that all are afforded state protection.

The State's comprehensive wetland conservation approach includes collaborations with federal and local governmental agencies and with other nongovernmental partners to better protect wetlands. Through its suite of programs, partnerships and regulations, NYS will continue to be a leader in preserving, protecting, and conserving its valuable wetlands. The State's wetland conservation plan's priority components are consistent with Section 303 of the Emergency Wetlands Resources Act of 1986 and the National Wetlands Priority Conservation Plan prepared by the US Fish and Wildlife Services.



Cumberland Bay State Park, Plattsburgh, New York.

Looking Ahead

A 2017 National Recreation and Park Association article, *Climate Change Is Changing the Face of Outdoor Recreation*, states that “climate change raises vital questions for park and recreation administrators, the industries that supply the field, and the public that recreates outdoors” and that “Climate change has begun to change the way we plan, design and manage parks, public lands and recreation facilities. It will continue to have profound effects on parks and recreation for the foreseeable future.”

As weather patterns change, it is important to note the challenges this may present to outdoor recreation in NYS. The short- and long-term viability of winter outdoor activities such as skiing, snowmobiling and snowshoeing are already being impacted by rising temperatures. Conversely, while climate changes may provide opportunities for expanded warm-weather programming and activities, these activities will also encounter new and different challenges, including:

- increased frequency of heat waves and storm events,
- increasing temperatures and a corresponding increase in pest species such as ticks and mosquitos,
- more frequent and potent harmful algal blooms, and
- new health threats to human and wildlife habitats.

To successfully manage the changes ahead, recreation providers will need to adapt – with comprehensive planning efforts, new warning systems and more robust methods of outreach and education. In the face of more frequent flooding and higher water on parks located on the Great Lakes and other waterfront parks, outdoor recreation providers in NYS can serve to demonstrate and be role models for communities and local governments in resiliency for shoreline recreation.

CHAPTER 5 – GOALS AND RECOMMENDATIONS

Over the past five years, many of New York State’s parks and historic sites have been energized with new and updated facilities and expanded recreation alternatives. These ongoing improvements help promote healthy outdoor activity and encourage residents and visitors to explore our parks across the State. The results are clear: OPRHP has seen record numbers of visitors at its campgrounds, parks, historic sites and trails. In 2018 an estimated 74 million people visited its facilities, the seventh consecutive year of rising attendance. This period of steady growth represents an overall increase of 28%—or 16.2 million visitors—since 2011.

Increased attendance at State Parks in 2018 included 24% more visitors at Watkins Glen in the Finger Lakes, following a park gateway renovation, and a 33% increase at Green Lakes in central NYS, which opened a new environmental education center. Improvements and additions also include the new Shirley Chisholm State Park in Brooklyn, which, when it opened in July 2019, became NYC’s largest State Park. In 2019, a new bathhouse and concession building at Southwick Beach State Park on Lake Ontario were underway, and a net-zero energy and nature education center in Jones Beach on Long Island is planned for construction in 2019-2020.

As summers heat up, demand for places for the public to cool off also continues to grow. Over the 2019 July Fourth holiday, for instance, Lake Tiorati Beach and Lake Welch in Harriman State Park were filled to capacity, with a swimming pool at Rockland Lake State Park closed by early afternoon after reaching full capacity.

Outdoor Recreation in New York

New York’s network of parks and protected open spaces are integral to the State’s growing outdoor recreation economy. In 2019, \$110 million is allocated toward outdoor recreation: funding that will help upgrade state parks and DEC resources, protect new open spaces provide new recreational opportunities and improve the State’s resiliency. The new direction for recreation in New York State is guided by several themes, which help focus and shape plans for our future outdoor recreation system. As a road map for recreation decision-making, these themes provide structure support for planning and inform administrative and legislative action. They are:

1. Keep the outdoor recreation system welcoming, safe, affordable, and accessible.
2. Improve the visitor experience.
3. Restore and enhance the State outdoor recreation system with an emphasis on conservation and resiliency.
4. Celebrate and teach history while promoting historic preservation efforts across the State.

The State’s goals have been established through public input, knowledge and information from members of the SCORP advisory committee, and other agencies’ recommendations. As stewards of the State’s many natural and cultural resources, particularly in the face of climate change, requires a forward-thinking outlook with specific goals actions in mind.





A reproduction of Henry Hudson's ship the Half Moon, being escorted by PRHP police

2020 and Beyond

In a recent report, *Smart Policies for a Changing Climate*, the American Society of Landscape Architects writes that: “The standard development approach isn’t working. We instead need a new paradigm that incorporates natural systems... to create healthy, climate-smart communities.” For outdoor recreation in NYS, all our goals and actions must consider the underlying challenges presented by climate change while embracing the role that parks and open space can serve to meet these challenges.

Outdoor recreation providers in NYS also serve the function of getting residents out of their armchairs and into the State’s varied and culturally rich outdoor places.

Over the last two decades our American style of life has, increasingly, **moved indoors**, with some adults and children now spending only minutes per day outside. Outdoor recreation providers are strategically positioned to play a crucial role in activating a counter-trend. Through multi-media outreach, programming that engages all ages and backgrounds, increased accessibility, and partnerships we can encourage people to go outdoors.

Goal #1: Connect children and adults with nature and recreation by improving access to outdoor recreation opportunities.

Public recreation providers have an obligation to provide the opportunity for varied recreational experience to all members of their community, and the State continues to make substantial progress toward a more inclusive system. As the trend toward an older demographic profile develops, and our communities become more urbanized and diverse, the State’s outdoor recreation system needs to evolve accordingly.

Recommended Actions:

- Identify new outdoor recreation opportunities for underserved communities.
- Continue to improve access to outdoor recreation opportunities through increased connections with transportation options (e.g., ride-sharing, bike sharing and public transit) and promote these options to provide access to outdoor recreation facilities to all members of the recreating public.
- Promote greenways and water trails as a means of urban recreation and transportation.
- Increase programming in parks for both kids and adults that encourages physical activity.
- Continue to partner with the NYS Departments of Health, DEC, and the NYS Economic Development Corporation to support programs that connect residents with recreation opportunities.
- Encourage the use of trails to increase physical activity as well as reduce the risk of many chronic diseases.
- Support the NYS Department of Transportation’s efforts with the Safe Routes to School Program, which encourages kids to be more active by walking or biking to school.
- Foster additional partnerships with like-minded companies to support outdoor recreation programs.
- Update and retrofit facilities to meet the changing outdoor recreation needs of an aging populace.
- Provide auxiliary aids and services that allow people with sensory or cognitive differences to more fully engage in park activities and programs and access to all web site content and services.
- Encourage the expansion of universally accessible trail systems.
- Continue to offer residents with disabilities the Access Pass, which allows free or discounted use of state parks, historic sites, and recreational facilities that are operated by OPRHP and DEC.



Goal #2: Inform the public about outdoor recreation opportunities.

As technological resources continue to evolve, the State needs to embrace new avenues for reaching out. The good news for recreation providers is that technology today can help get the word out to more people about recreation opportunities than ever before. A few resources include the National Wildlife Federation's publication, *Digital Technology's Role in Connecting Children and Adults to Nature and the Outdoors*, which offers ideas for using digital tools to access the outdoors, and links to websites, social media, and press releases, as well as the growing number of **apps**. Park Rx's "Find a Park" **web tool**, helps locate nature and recreation experiences in their communities, and the National Recreation and Park Association's **website** has the Local Park Finder app to help connect users to activities, programs, events and amenities at parks and recreation centers nationwide.

These rapidly expanding technologies will continue to offer new resources and valuable tools for parents, caregivers, educators and other decision-makers who are in a position to encourage and plan for outdoor experiences.

Recommended Actions:

- Improve efforts to increase awareness about educational and outdoor programming for K-12 students through the **Connect Kids to Parks** grant program.
- Focus outreach to demographic segments that are less engaged and have less public access to outdoor recreation.
- Disseminate information about availability of outdoor recreation facilities and programming through interactive state agency websites.
- Utilize social media, press releases, and additional media platforms to further highlight project initiatives and encourage visitation.
- Continue the promotion of state facilities through the distribution of printed publications.
- Educate the public on convenient ways to explore the outdoors (sharable Empire Pass, Reserve America, online golf registration).

Goal #3: Engage the public through programming.

While the trend for park usage may be moving toward more passive recreation, in order to attract and activate all residents—and become a desirable destination for out-of-state visitors—targeted programming can be key. Every community has its own demographic, and activities that are tailored to local interests and trends can help encourage more people to visit their parks.

A parks and recreation guide for the City of Toronto, **Planning, Designing and Maintaining Safer Parks**, notes that “The presence of programmed activities or activity generators attract and increase positive use in a park.” To ensure more comprehensive park use, the guide encourages strategies such as offering programs at different times of day, engaging volunteers to teach a craft or offering separate areas with programs for teenagers. Whatever the strategy, it is crucial that the State’s program offerings reflect the population, region and times.

Recommended Actions:

- Expand environmental and cultural education, interpretation, and volunteerism, such as **Citizen Science** programs, throughout the State’s public outdoor recreation estate.
- Expand partnerships with colleges and universities to help develop and implement environmental education and interpretation programs.
- Expand partnerships with established park, trail, and advocacy groups.
- Continue to foster partnerships with Friends’ groups to garner support for individual parks and historic sites.

Goal #4: Reinvent and redesign the State’s outdoor recreation system.

For nearly 100 years, New York State’s parks and historic sites have offered the public access to a variety of unique landscapes, each with its own regional character. But what *should* they become? Speculation on the biggest trends shaping the parks of the future (**What Parks Could Look Like in 2034**), include parks powered by wave and geothermal power and creative stormwater re-use and management. An article published in 2013 on **BBC Future’s** website describes the parks of 2050 as:

“...tuned to their locality, and diverse within, as well as across, cities. There are patches that provide shade and cooling, and corridors that connect both residents and wildlife to the surrounding native environment. Their functions are measured and monitored to meet the unique needs of each city for water use, nutrient recycling, and habitat.”

Parks in NYS are already undergoing a transformation, with varied projects planned and underway for new and updated infrastructure, expanded boundaries, and more inclusive programming. In this time of rapid change, it is vital that these improvements are intentional, shaped by informed planning and meaningful discussion between the major stakeholders.

Recommended Actions:

- Facilitate inventories and analyses of park, recreation, natural and historic resources through Geographic Information Systems (GIS) and other technologies.
- Develop master plans, site plans, management plans, and other planning tools to facilitate the reinvention and redesign of the State outdoor recreation system.
- Rehabilitate, retrofit and/or adaptively reuse existing recreation and historic facilities to satisfy existing and projected recreation, interpretive, and education needs.
- Promote compatible multiple uses and maximize, as appropriate, the length of activity seasons.
- Support implementation of universal access standards in rehabilitation and new construction.
- Encourage training in “best practices” for park, historic site staff and land managers, to help protect natural and cultural resources, and improve operation and maintenance, to ensure public health and safety.

Environmental Education in NY's State Parks

The Minna Anthony Common Nature Center (MACNC) at Wellesley Island State is sited on a pristine 600-acre peninsula on the St. Lawrence River. An important educational resource for communities in the rural Thousand Island Region, the facility offers programs for both youth and adults.

The 3500-square foot building is a year-round attraction filled with family-friendly exhibits, live animals and, in the summer, a butterfly house with native flora and live butterflies. By engaging visitors to learn about their surroundings, staff here hope to inspire a new generation of environmental educators who will pass along the enthusiasm and knowledge for the natural world gained here.

Minna Anthony Common was a life-long summer resident of Thousand Island Park and a leading authority on regional birds, flowers, trees, animals and grasses. Mrs. Common developed walking trails through the woods here, and her one-and-a-half mile walk with markers she designed was popular with local school groups, who learned about natural history elements along the way.

Thousands of school children now visit the nature center year-round to learn about the local environment and—if they are lucky—spot bald eagles on Eel Bay or the osprey that nest in the park in summer. Miles of trails are also available to the

public of all ages year-round for hiking, meandering, cross-country skiing, and snowshoeing.

The MACNC has recently undergone major changes inside and out. Infrastructure upgrades were completed in 2015 with \$350,000 in state funding, and, in 2017, additional structural renovations were completed. With the support of grants and private donations, the Friends of the Nature Center, Inc. (FNC) raised funds to implement new state-of-the-art exhibits in the renovated building. Park staff from the OPRHP Thousand Islands Region collaborated with FNC to redesign and restructure the exhibits to design colorful displays that stimulate interest and attract visitors to the park.

Between 2015 and 2017 the FNC received funding from the NYS Park and Trail Partnership Program (PTPP) and used these funds to upgrade trail signage and improve the visitor experience. In 2016, the first of two new exhibits was constructed near the entrance, and, in 2017, the FNC was awarded \$50,000 in PTPP funds for a new Forest exhibit.

The MACNC is just one of 26 regional nature centers in the OPRHP system, all of which help enrich the public's outdoor recreation experience through opportunities to interact with live plants and animals, hands-on displays, historic artifacts, outdoor nature adventures, crafts, games, and more.



Left: June 2018 ribbon cutting at the newly renovated educational center.



Right: A NY State Trooper checking out a new exhibit at the Minna Anthony Common Nature Center, Wellesley Island State Park.

Goal #5: Build a 21st century green and resilient outdoor recreation system; repair and green aging infrastructure and open new facilities.

Working toward a more resilient outdoor recreation system goes well beyond elevating structures or upgrading utilities to protect them from flooding. In the article, “**How Parks and Open Spaces can Strengthen Resilience.**” FEMA notes that “open space really helps community resilience: physical resilience, holistic well-being of individuals...”. A “big picture” approach to resiliency planning means that parks and open space become an important part of the State’s overall strategy, while creating a stronger and more meaningful recreation system.

Recommended Actions:

- Protect natural and cultural resources when undertaking park and historic site operations, maintenance, and management activities.
- Develop policies and procedures for reducing energy consumption and lowering the production of greenhouse gases through increased energy efficiency, use, and support of renewable energy sources.
- Continue to implement policies and procedures to maximize procurement of environmentally preferable products and services.
- Ensure practices that promote waste reduction, reuse, and recycling.
- Promote the procurement of locally produced commodities.
- Encourage increased funding from State and Federal sources for outdoor recreation.
- Encourage transportation options that reduce carbon emissions including, but not limited to, carpooling, public mass transit, cycling, and walking.
- Evaluate existing infrastructure to determine the most critical repair needs.
- Support efforts to provide consistent funding to maintain and upgrade outdoor recreation facilities, as outlined in the **NYS Parks 2020 Plan**.
- Evaluate vulnerable coastal parks and lands to ensure natural processes are not hindered by development, including repairs/improvements that will better prepare facilities to handle future weather events.
- Identify and encourage the creation of recreationways, greenways and water trails in and around metropolitan areas, along major water corridors, and along railroad and utility corridors.
- Encourage the development of trails within subdivisions to provide pedestrian access to neighboring communities and facilities.
- Foster partnerships between federal, state, and local governments, nonprofit organizations, trail groups, private landowners, and volunteers in the development and maintenance of trails.
- Encourage trails and open spaces in the revitalization of urban areas.
- Strengthen the statewide trails program for coordination, planning, and technical assistance of trails development.

Goal #6: Expand and protect natural connections between parks and open space.

The **Open Space Institute**, characterizes open space acquisition as “an effort to align the pieces of the landscape puzzle and prevent fragmentation, which disrupts key wildlife corridors, impairs water and air quality, and diminishes the beauty and accessibility of natural areas.” Outdoor recreation providers are in a unique position to develop a network of open space. Integrating multiple green spaces creates an expanded and more coherent system that allows more natural functions to develop, benefiting plants, animals, air and water quality, and people.

Recommended Actions:

- Continue to inventory important ecosystems and natural connectors.
- Continue to develop interstate, statewide, regional, and local approaches to protect biodiversity.
- Encourage open space preservation by assessing lands adjacent to public outdoor recreation sites for future acquisition potential.

- Encourage the protection and/or acquisition of critical connectors between parks and open space acquisition of in-holdings and important properties adjacent to existing public landholdings. Ensure that the acquisition of open space resources is consistent with the approaches and recommendations identified in the NYS **Open Space Conservation Plan**.
- Encourage the use of fee and non-fee acquisition as well as other techniques in the protection of important open space, scenic, historic, and ecologically sensitive areas.

Goal #7: Restore, conserve, and protect the State's biodiversity.

The State recognizes the essential role that biodiversity plays in the health of our ecosystems. Large-scale issues impacting diversity such as invasive species, climate change, and water quality impairment cannot be addressed overnight, but NYS is taking a multi-pronged approach to help. To inform decisions related to biodiversity protection, OPRHP created a **Biodiversity Indicator Tool**, used by state agencies, land trusts, municipalities and others, to help to identify opportunities for open space protection and maintaining habitat connectivity. OPRHP recently launched an Invasive Species Management Plan template, which is being piloted in several parks.

The NYS **Natural Heritage Program** provides rare species status lists, an online rare species reporting form, and scientific expertise, to aid resource managers and other conservation partners. In addition, DEC's eight Partnerships for Regional Invasive Species Management (**PRISMs**) exist across NYS, to help coordinate invasive species management by recruiting and training citizen volunteers, identifying and delivering education and outreach, establishing early detection and monitoring networks and implementing direct eradication and control efforts. The groups work with resource managers, non-governmental organizations, industry, resource users, citizens and other state agencies and stakeholders to combat invasive species.



Understanding the role of different species in a healthy environment helps protect the State's biodiversity.

(Photo: DEC)

Recommended Actions:

- Enhance habitat connectivity and reduce habitat fragmentation.
- Expand climate resiliency and adaptation efforts.
- Mitigate the adverse impacts of invasive plants, insects, and other animals.
- Promote wildlife management efforts that improve biodiversity in parks and natural areas.
- Preserve, connect, and enhance natural areas and ecosystems to improve biodiversity.
- Educate staff and visitors to parks and natural areas about the value of biodiversity and the impacts of threats such as climate change, invasive species, habitat loss and fragmentation.
- Expand involvement of conservation and service corps, as well as volunteer groups, in the protection of natural areas.
- Strengthen consistency of policies and collaboration between state, federal, and local biodiversity programs.

Goal #8: Expand historic preservation efforts across the State, at the local and regional level, and cultivate pride of place.

With New York State’s historic legacy spanning centuries, the challenge is not finding interpretive material, but rather to share these stories with a broader audience and inspire an appreciation for the State’s rich heritage. The State has a vital historic preservation program which helps to protect and interpret many of our most significant natural, historic, and cultural resources. The **State Historic Preservation Office (SHPO)**, prepares a statewide **preservation plan** every five years that provides direction for the entire state.

Much has been done to foster and enrich our historical facilities, but as OPRHP approaches its 100-year anniversary, opportunities are boundless, and—as our population changes—people will want to engage with the past in different ways.

Recommended Actions:

- Strengthen interpretive programming to promote diversity.
- Improve energy conservation efforts at historic sites.
- Enhance collaborations to advance historic preservation.
- Improve gateways to historic sites to better engage the local community and visitors.
- Train New Yorkers in historic preservation trades, skills and crafts.
- Continue to educate New Yorkers about the importance of historic preservation.
- Capitalize on heritage tourism opportunities and develop new tourism-friendly products.



Sonnenberg Gardens & Mansion State Historic Park, Canandaigua, NY

CHAPTER 6 – IMPLEMENTATION

To prepare the State's outdoor recreation system for the future, we must anticipate the need for new and more inclusive facilities; to protect and maintain natural, cultural, and open space resources, and to ensure that future generations will continue to have access to public recreation. The SCORP provides a statewide policy framework that serves as the basis of the State's action program and the Open Project Selection Process (OPSP) that supports the Land and Water Conservation Fund. The programs described in this plan are the key elements of the State's implementation strategy. The following is a list of available funding programs for projects that help to implement the goals of the SCORP.

Funding

Table 6.1 below lists many of the current programs that can be used by outdoor recreation providers in NYS to access federal, state or other sources of funding to meet the goals and recommendations of the SCORP. It indicates the entities eligible for each funding program, what actions those programs can support, and the program focus. The pages following the table contain summaries of each program, listed according to funding source (federal, State, or other) and then alphabetically.

Federal Programs

Boating Infrastructure Grants (BIG)

<https://parks.ny.gov/grants/boating-infrastructure/default.aspx>

A federal program funded through the FWS supporting projects that construct, repair, or renovate marina facilities dedicated to serving non-trailerable, recreational, transient (staying no more than 15 consecutive days) vessels, 26 foot or longer. As the entity authorized for grant administration in NYS, OPRHP accepts applications for BIG projects from municipally-owned facilities. Funds for the BIG are provided annually from the Sport Fish Restoration and Boating Trust Fund, which is derived from excise taxes on fishing equipment, motorboat and small engine fuels, import duties, and interest on the fund.

Certified Local Government Program (CLGP)

<https://parks.ny.gov/grants/certified-local-government/default.aspx>

A matching grant program for the expansion and maintenance of the National Register of Historic Places and support of historic preservation activities including survey and inventory. Funds are available through NPS and administered by OPRHP. Only certified local governments may apply.

Coastal and Estuarine Land Conservation Program (CELCP)

https://www.dec.ny.gov/docs/lands_forests_pdf/osp16d.pdf

Approved by NOAA in 2007, the NYS Coastal and Estuarine Land Conservation Program Plan qualifies the State to receive federal funds under the Coastal and Estuarine Land Conservation Program, a federal program established in 2002 to protect important coastal and estuarine areas that have significant conservation, recreation, ecological, historical, or aesthetic values, or that are threatened by conversion from their natural or recreational State to other uses. Priority is given to lands which can be effectively managed and protected, and with significant ecological value.

Community Development Block Grant Disaster Recovery (CDBG-DR)

<https://www.hudexchange.info/programs/cdbg-dr/>

HUD provides flexible grants to help cities, counties, and States recover from Presidentially declared disasters, especially in low-income areas, subject to availability of supplemental appropriations. In response to Presidentially declared disasters, Congress may appropriate additional funding for the Community Development Block Grant (CDBG) Program as Disaster Recovery grants to rebuild the affected areas and provide crucial seed money to start the recovery process. Since CDBG Disaster Recovery (CDBG-DR) assistance may fund a broad range of recovery activities, HUD can help communities and neighborhoods that otherwise might not recover due to limited resources.

CDBG History

HUD began the Community Development Block Grant (CDBG) program in the 1970s to fund programs aimed at addressing urban poverty. After Hurricane Andrew in 1993, HUD was granted authority to use CDBG funds explicitly for disaster recovery purposes. Since 2013, NYS has been awarded over \$110 million in additional CDBG-DR funding to support further development of resiliency measures.

In addition to a direct benefit for sustainability improvements, the program allows the State to leverage funding from other sources. Approximately \$11 million in federal assistance has also gone toward rehabilitating historically significant properties, allowing OPRHP's State Historic Preservation Office to repair state properties that sustained storm damage.

CDBG-DR

The NYS park system suffered more than \$149 million in damage from Hurricane Sandy, with \$90 million damage seen on Long Island alone, and forcing the closure of dozens of State Parks. The 2013 Disaster Relief Appropriations Act provided \$16 billion in CDBG Disaster Recovery (CDBG-DR) funds to affected areas, including \$4.5 billion to NYS. To administer the disbursement of these funds, the Governor's Office of Storm Recovery (GOSR) was established. NYS has used these funds to address community resiliency needs; to improve coastal defenses and reconstruct or reinforce vulnerable infrastructure, including the following projects at state parks:

- **Robert Moses:** Emergency restoration and stabilization of eroded beach dunes, and replacement of park's water treatment plant with a more flood-resistant facility.
- **Jones Beach:** Projects to upgrade stormwater filter and drainage systems, installation of flood-resistant infrastructure on critical facilities
- **Hempstead Lake:** Dam rehabilitation, wetland and water quality improvement measures, improvement of recreational trails and facilities and construction of an educational center.
- **Roberto Clemente:** Bulkhead replacement and rebuild of esplanade damaged by Sandy; introduction of more resilient design and infrastructure improvements, including use of permeable building materials and construction of an intertidal area to catch seawall overflow

Congestion Mitigation and Air Quality Improvement (CMAQ) Program

https://www.fhwa.dot.gov/environment/air_quality/cmaq/

CMAQ provides funding to state and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Continued in the FAST Act at an estimated average annual \$2.4 billion, funding is available to reduce congestion and improve air quality for areas that do not meet National Ambient Air Quality Standards. Diesel retrofits and port-related equipment and vehicles are eligible as well as public transit, bicycle and pedestrian facilities, travel demand management strategies, alternative fuel vehicles, facilities serving electric or natural gas-fueled vehicles and a new explicit eligibility for V2I communication equipment.

Federal Emergency Management Agency (FEMA)

<https://www.fema.gov/region-ii-nj-ny-pr-vi-0>

FEMA's partnership with NYS has served as a valuable mechanism for maximizing federal assistance to address storm recovery needs. The first pilot project following Hurricane Sandy was approved at the end of 2013, and, in 2018, an additional 48 projects were added, with the largest share of funding going toward restoring NYC Parks Department facilities. The projects are focused on recovery efforts and helping to rebuild facilities to lessen future impacts of severe storms. Projects include \$29.4 million to repair and replace piers, docks and administrative facilities at the 79th St. Boat Basin Marina; \$18.2 million to rehabilitate the World's Fair Pavilion, an iconic landmark that sustained extensive electrical damage, and \$8.9 million for the Red Hook Recreation Center, where floodwaters inundated the main facility, comfort station, swimming pool, and underground tunnel.

Federal Lands Access (FLA) Program

<https://flh.fhwa.dot.gov/programs/flap/ny/documents/NY-State-Goals.pdf>

The FLA provides an average of \$260 million annually for projects that improve access to federal lands on infrastructure owned by states and local governments. Projects providing access to any federal lands are eligible. Funds are distributed through a formula based on recreational visitation, federal land area, federal public road mileage, and the number of federal public bridges.

Forest Legacy Program (FLP)

<https://www.dec.ny.gov/lands/63117.html>

A federal grant program, the FLP protects forest lands from conversion to non-forest uses. Initiated in the 1990 federal Farm Bill, the program recognizes that most forested lands in the U.S. are owned privately and that forest landowners face growing financial pressure—much of it from demand for residential and commercial development—to convert their lands to uses that would remove them from the forested land base. The primary method of protection is with conservation easements in which landowners sell a portion of the property rights while retaining ownership of the land. This allows the land to remain in private ownership while ensuring that wildlife habitat, forest resources, and outdoor recreation opportunities are protected. Participating landowners may also sell the property to the State, in which case the land would be managed as State Forest land. Participation in the program is entirely voluntary. All acquired easements must meet conservation objectives and goals delineated in the **Open Space Conservation Plan**.

In 2016, NYS received \$5,455,000 from the FLP to help protect the Rensselaer Plateau Working Forest. The funding includes an educational component to help landowners better understand their options for stewardship, as well as for a Regional Trails Vision Plan, developed through a collaborative effort between plateau municipalities, landowners, recreation organizations, and the public to plan a future network of trails.



Forest Legacy Program provides support to landowners in the region who want to manage or conserve their forests and woodlands.



Forest Stewardship Program (FSP)

<https://www.dec.ny.gov/lands/45941.html>

The DEC Division of Lands & Forests cooperates with the USDA Forest Service to implement the federal FSP. A cornerstone of the program is the availability of technical assistance to help private forest owners develop Forest Stewardship Management Plans to guide them in the use and management of their lands. These plans are based upon goals and objectives that individual owners have for their properties.

Healthy Forests Reserve Program

<https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/farmland/>

The Healthy Forests Reserve Program (HFRP) helps landowners restore, enhance and protect forestland resources on private and tribal lands through easements and financial assistance. Through HFRP, landowners promote the recovery of endangered or threatened species, improve plant and animal biodiversity and enhance carbon sequestration.

Great Lakes Restoration Initiative (GLRI)

<https://www.epa.gov/great-lakes-funding/great-lakes-restoration-initiative-glri>

<https://www.glri.us/funding#grant-ops>

Federal agencies use GLRI resources to strategically target the biggest threats to the Great Lakes ecosystem and to accelerate progress toward long-term goals. Funding is from the Environmental Protection Agency (EPA), which partners with nonfederal regional working groups to implement protection and restoration projects. In NYS, projects have included habitat restoration along Lake Erie on Seneca Nation Lands, and at State Parks along the Niagara River, Lake Ontario and Lake Erie, and studies on nonpoint source pollution impacts at Braddock Bay on Lake Ontario.

Land and Water Conservation Fund (LWCF)
<https://www.nps.gov/subjects/lwcf/Stateside.htm>

The LWCF was enacted by Congress in 1964 as a dedicated fund to provide grants to safeguard the nation’s natural areas, water resources and cultural heritage, and to provide recreation opportunities. Funding for the LWCF is from revenues provided by offshore oil and gas leases that are split between the federal agencies and the Stateside grant-in-aid program.

The State may allocate grants-in-aid to both local and State projects, with the provision that at least 50% of the total project cost be matched by the State or locality. Eligible projects include parkland acquisition, development of new parks, and rehabilitation of existing recreational facilities. All designated project areas are protected and cannot be converted to any use other than public outdoor recreation without the approval of the Secretary of the Interior. Preparing the SCORP every five years helps the State both to prioritize goals and direct LWCF funds. The goals and recommendations in the SCORP provide the framework to allocate the State’s outdoor recreation related spending.

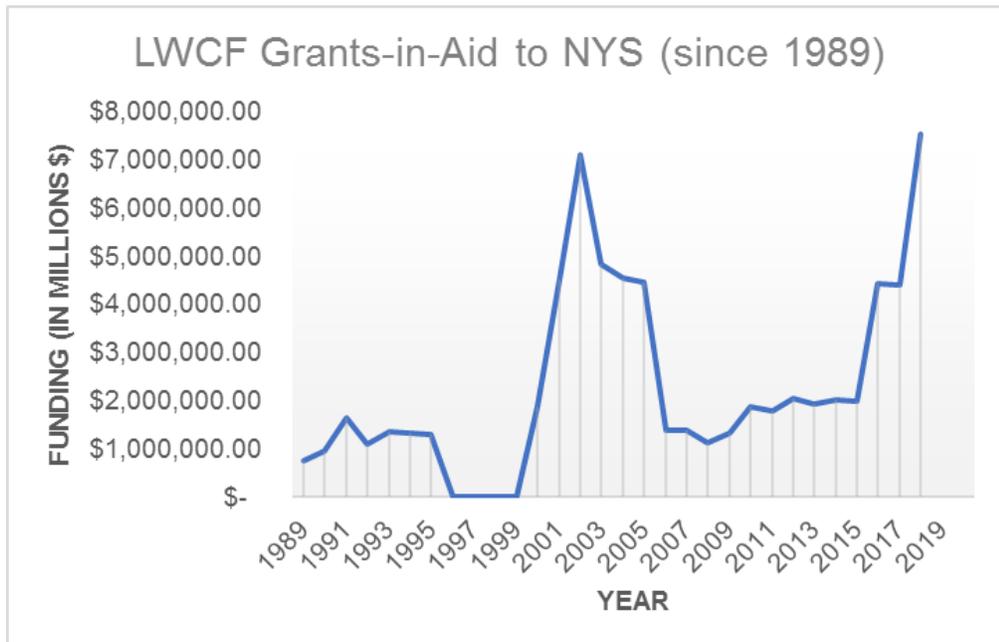
The LWCF Act expired on September 30, 2015. It was extended for three years and then permanently reauthorized with the passage of the John D. Dingell, Jr. Conservation, Management, and Recreation Act, signed into law by the President on March 12, 2019.

LWCF Grants-in-Aid Funding History

Since its inception, the LWCF grants-in-aid program has invested more than \$336 million to protect the State’s forests and wildlife refuges, and to provide recreation opportunities. It has partially funded more than 1,300 projects, with at least one project in every county.

In the two decades following its passage the LWCF played a major role in the acquisition and development of outdoor recreation in NYS; however, federal funding for the State and local grants-in-aid program slowed to a trickle in the late 1980s and was all but eliminated in 1996. It was not refunded at any level until 2000. In more recent years, federal support for the LWCF grants-in-aid program has burgeoned with funding to NYS more than tripling since 2015.

Chart 6.1 – LWCF Total Grants-in-Aid to NYS (since 1989)



LWCF at Work in New York State

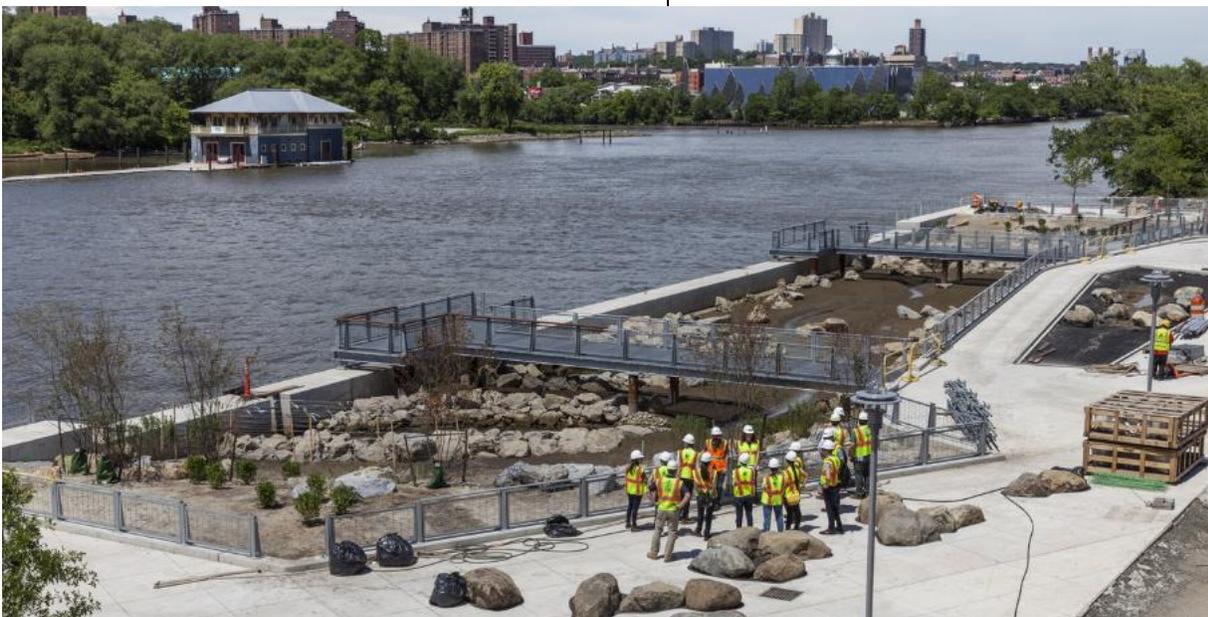
Roberto Clemente State Park—Bronx, NY

A new access point for canoes and kayaks is now open to the public on the banks of the Harlem River in Bronx, NY. A small gangway leads down to three new floating docks, where paddlers and rowers can easily pull up, and a new pedestrian pathway connects the shoreline area to other parts of this popular park.

A significant recreational and cultural hub, the 25-acre Roberto Clemente State Park has basketball courts and ball fields; picnic areas and playgrounds, and an Olympic-size pool. Providing water access for non-motorized craft enables the park to expand partnerships within an underserved community, with additional programming opportunities and access for local rowing and paddling groups.

Partnerships made this project and other park improvements possible. In addition to an LWCF grant, support came from New York Works, Community Development Block Grant, and from the Bronx Borough President. The park was also awarded HUD funds to rehabilitate the bulkhead after it was damaged by Hurricane Sandy.

Public review and comment helped shape the planned park improvements. In response to public input, projects that address the bulkhead and related shoreline improvements were prioritized. In highly urban areas such as this, open space is at a premium, and reconnecting children and adults with nature by providing safe water access to city residents is just one of the State's goals successfully met by this project.



Elevated walkways allow users to access a newly-created tidal marsh and view constructed tidal pools at close range.

Livability Grant Program

<https://www.transit.dot.gov/regulations-and-guidance/environmental-programs/livable-sustainable-communities/livability-grant>

Formerly under the *Transit in Parks Program*, alternative transportation projects are now eligible under FHWA's Federal Lands Transportation Program and the Federal Lands Access Program. (Transit in Parks was repealed by Congress under MAP-21, and the Federal Transit Authority announced the final selection of project awards in 2013.) The new program is administered by the U.S. Department of Transportation, together with the Department of the Interior and the U.S. Forest Service. Program funds support capital and planning expenses for new or existing alternative transportation systems in the vicinity of an eligible area. Alternative transportation includes transportation by bus, rail, or any other publicly available means of transportation, including sightseeing service. It also includes non-motorized transportation systems such as pedestrian and bicycle trails.

North American Wetlands Conservation Act (NAWCA) Grants

<https://www.fws.gov/birds/grants/north-american-wetland-conservation-act.php>

The NAWCA program provides matching grants to wetlands conservation projects. There is a **Standard** and a **Small Grants Program**. Both are competitive grants programs and require that grant requests be matched by partner contributions at no less than a 1-to-1 ratio. NAWCA grants increase bird populations and wetland habitat while supporting local economies and American traditions such as hunting, fishing, bird watching, family farming, and cattle ranching. Wetlands protected by NAWCA provide valuable benefits such as flood control, reducing coastal erosion, improving water and air quality, and recharging ground water.

Outdoor Recreation Legacy Partnership (ORLP) Program

ORLP is a nationally competitive grant program that delivers funding to urban areas – jurisdictions of at least 50,000 people – with priority given to projects located in economically disadvantaged areas and lacking in outdoor recreation opportunities. These awards help urban communities address outdoor recreation deficits by supporting projects in cities and densely populated urbanized areas that create new outdoor recreation spaces, reinvigorate existing parks, and form connections between people and the outdoors.

ORLP was established by Congress in 2014 and administered through the NPS. It is funded through the LWCF State and Local Assistance Program.

Partners for Fish and Wildlife Program (PFW)

<https://www.fws.gov/partners/>

The Partners for Fish and Wildlife (PFW) Program is a voluntary, citizen, and community-based stewardship program for fish and wildlife conservation on private land. At the requested **FY 2019 funding level**, PFW is expecting to restore and enhance an estimated 23,157 wetland acres, 141,685 upland acres, 416 riparian miles, and 77 fish passage structures.



Pittman-Robertson Program

The federal Aid in Wildlife Restoration Act, commonly known as the Pittman-Robertson program, was signed into law in 1937 and is administered by the Department of the Interior. Funded by an 11 % excise tax on rifles, shotguns and archery equipment and a 10 % tax on handguns, funds are apportioned to the states and earmarked for wildlife conservation and hunter education. The State's share of about \$5 million annually is committed to restoration, acquisition, management of habitat for wildlife, and providing access for wildlife-related recreation.

In 2019, Pittman-Robertson funds helped expand the 590-acre Hand Hollow State Forest in Columbia County. The site was purchased from the Open Space Institute and includes forestland, meadows, ponds, streams, and wetlands identified by DEC as regional conservation priorities. Along with protecting wildlife habitat, the parcel expanded and improved access for hunting, trapping, fishing and wildlife viewing. DEC has designated the area as the Charles Flood Wildlife Management Area at the Empire Brickyard.

Recreational Trails Program Funding

RTP funding to NYS since inception:

Local Projects

Awarded: 267

Total Federal Funds:

\$22,403,451

State Projects

Awarded: 113

Total Federal Funds:

\$10,700,693

Total Projects

Awarded: 380

Total Federal Funds:

\$33,104,144

(all totals as of 12/31/2018)

Recreational Trails Program (RTP)

<https://parks.ny.gov/grants/recreational-trails/default.aspx>

An assistance program from the Federal Highway Administration (FHWA), the RTP provides funds to develop and maintain recreational trails and trail-related facilities for both nonmotorized and motorized use. Funds support recreation, including hiking, bicycling, in-line skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles.

The FHWA administers the RTP in consultation with the Department of Interior (National Park Service and Bureau of Land Management) and the Department of Agriculture (U.S. Forest Service). The funds, which come from the Federal Highway Trust Fund and excise taxes on recreationally-used motor fuel, are available to States, municipalities, tribal governments, and private organizations.

In New York, the RTP is a program of the NYS DOT and is administered by OPRHP. To be eligible, projects must be identified in or further one or more goals of the current SCORP.

The FAST Act reauthorized the RTP for federal fiscal years 2016 to 2020 as a Transportation Alternatives (TA) set-aside under the Surface Transportation Block Grant Program (STBG). The set-aside is equal to State's FY 2009 RTP apportionment. Between federal FY 1993-2017, the States obligated \$1.185 billion in RTP funds, supporting about 22,975 projects.



Springtime at Moreau Lake State Park in the Saratoga/Capital District Region (OPRHP). With over 20 miles of trails, visitors come to the park for hiking, snowshoeing, and cross-country skiing.

Safe Routes to School Program (SRTS)

<https://www.dot.ny.gov/safe-routes-to-school>

First developed in the 1970s, Safe Routes to School (SRTS) is a federal, State and local effort to enable and encourage children, including those with disabilities, to walk and bicycle to school. Now incorporated into the FAST Act *Transportation Alternatives* program, SRTS activities remain as an eligible funding category, although the program is no longer standalone. The program reimburses up to 80 % of project-related costs with the remaining 20 % provided by project sponsors. The funding is available to support bicycle, pedestrian, multi-use path and non-motorized transportation-related projects as well as programs and projects that reduce congestion and improve air quality.

Sport Fish Restoration Fund

<https://www.dec.ny.gov/outdoor/7923.html>

The Fund is administered by the USFWS as a grant-in-aid program to state fish and wildlife agencies. Monies are to be used by the states for sport fish management, development, research and restoration. Fund distributions are nationally apportioned among all 50 states based on each state's number of fishing license holders and the land area of the state. Upon completion of approved work, states are reimbursed from the fund for up to 75 % of the project costs.

In New York State, Federal Sport Fish Restoration Funds are woven through virtually every aspect of DEC's total fisheries program. In the freshwater fishery program, Wallop-Breaux funds account for almost 30 % of the total expenditures and are essential in providing a balanced statewide fishery management program. In the marine program, Federal Sport Fish Restoration Funds account for a substantial portion of the expenditures, enabling DEC to properly manage the vast marine and coastal fisheries resources.

State Wildlife Grant (SWG) Program

<https://wsfrprograms.fws.gov/Subpages/GrantPrograms/SWG/SWG.htm>

<https://www.dec.ny.gov/animals/7179.html>

The State Wildlife Grant (SWG) Program provides federal funds to state fish and wildlife agencies for developing and implementing programs that benefit wildlife and their habitats, including species that are not hunted or fished. Funds may be used to address research, fish and wildlife surveys, species restoration, habitat management, and monitoring and other areas identified within the State's Wildlife Action Plan. These funds may also be used to update, revise, or modify a State's Plan.

Transportation Alternatives (TA)

<https://www.fhwa.dot.gov/fastact/summary.cfm>

The FAST Act eliminated the MAP-21 Transportation Alternatives Program and replaced it with a set-aside of Surface Transportation Block Grant (STBG) funding for transportation alternatives. These funds include all projects and activities that were previously eligible under TAP, encompassing a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, Safe Routes to School projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity. The FAST Act sets aside an average of \$844 million per year for TA. States and MPOs for urbanized areas with more than 200,000 people conduct a competitive application process for TA funds. Eligible applicants include tribal governments, local governments, transit agencies, school districts, and nonprofit organizations responsible for local transportation safety programs.

Wetlands Reserve Easements

<https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/>

A program to help state and local governments, non-governmental organizations and Indian tribes restore, protect, and enhance enrolled wetlands. It is administered by the NRCS under the Agricultural Conservation Easement Program (ACEP) of the 2018 Farm Bill.

State Programs

Brownfield Opportunity Areas (BOA) Program

<https://www.dec.ny.gov/chemical/8447.html>

The BOA Program provides resources to New York communities to establish effective revitalization strategies that return dormant and blighted parcels into productive use. The goal is to work in partnership with local communities and organizations to develop and realize a community vision for redevelopment and community revitalization. The BOA program is administered by NYS DOS.

Canalway Grants Program

<http://www.canals.ny.gov/community/grant.html>

Up to \$1 million in competitive grants are available to eligible municipalities and 501(c)(3) nonprofit organizations along the NYS Canal System for canal related capital projects. Projects proposed for funding must demonstrate how they will achieve some or all of the following for the NYS Canal System and Canalway Trail: expand public access, increase visitation and recreational use, stimulate private investment, improve services and amenities for Canalway land and water trail users, and enhance the connections between the canal and the corresponding region consistent with the **Regional Economic Development Councils'** strategic plans. The minimum request is \$25,000; maximum \$150,000. Grant administration and pre-development costs may not exceed 10% of the grant award, but may be used as part of the applicant match, with no cap. The program is administered by the NYS Canal Corporation.

Climate Smart Communities (CSC) Grant Program

<https://www.dec.ny.gov/energy/109181.html#CSC>

Established in 2016 to provide 50/50 matching grants to NYS cities, towns, villages and counties and boroughs of NYC for eligible climate adaptation and mitigation projects. Funds are available to support implementation projects related to climate change adaptation and for the reduction of greenhouse gases outside the power sector (transportation, methane and refrigerants). A second category supports planning projects related to Climate Smart Communities certification actions. This program is administered by DEC.



Niagara Falls State Park

Complete Streets Program

<https://www.dot.ny.gov/programs/completestreets/funding>

In 2011, the Governor signed the Complete Streets Act, requiring state, county and local agencies to consider the mobility of all users when developing transportation projects that receive state and federal funding. A goal is to improve the dialogue between the government, pedestrians, bicyclists, people with disabilities, public transportation riders, and motorists to plan roadways that consider the safe, convenient access of roadway users of all ages and abilities. Municipalities and counties throughout NYS have adopted Complete Streets resolutions to adopt policies that promote a cleaner, greener state. Funding for Complete Street projects is available through several State agencies, including the DOS, Environmental Protection Fund, and the Office of Community Renewal.

Connect Kids Field Trip Grant (CKFTG)

<https://parks.ny.gov/environment/connect-kids/grant-program.aspx>

A grant program established in 2016 that refunds up to \$1,000 of field trip costs including: subway and ferry tolls, program and pavilion fees and special attractions. Due to funding restrictions, CKFTG only refunds field trips to state land managed by either OPRHP or DEC. OPRHP administers CKFTG in collaboration with DEC and nonprofit organizations that operate on state land. Any public school in a district with a Title 1 school (a federal designation for public schools with the highest %ages of children from low-income families), grades preK-12 (including school-sponsored clubs), Advantage After School Programs, 21st Century Community Learning Centers NYC funded afterschool program, or the Empire State After-School Program, is eligible to apply for the grant, as are municipal recreation programs in communities with Title 1 schools.

Environmental Protection Fund (EPF)

<https://www.dec.ny.gov/about/92815.html>

The NYS Legislature enacted the Environmental Protection Act In 1993, creating a permanently dedicated Environmental Protection Fund (EPF) aimed at meeting the State's pressing environmental needs. The EPF funds capital projects that protect the environment and enhance communities. These are generally large-scale projects that purchase land or construct facilities. Financed primarily through a dedicated portion of real estate transfer taxes, the EPF has provided more than \$2.7 billion for environmental projects in three programs: Solid Waste, Parks and Recreation, and Open Space.

The acquisition of open space conservation projects is provided for in Title 3 of Article 54 of the Environmental Conservation Law. Title 9 of Article 54 authorizes OPRHP to administer a matching grant program for municipal parks, recreation and historic preservation projects. This funding enables the State to:

- acquire priority lands identified in the NYS **Open Space Conservation Plan**;
- improve biodiversity through identification, research and conservation;
- fund municipal and state parks and historic preservation grant programs administered by OPRHP;
- implement local farmland protection projects administered by the Department of Agriculture and Markets and local waterfront projects administered by the DOS;
- provide capital and stewardship funding for DEC and OPRHP lands and facilities, and
- implement the **Hudson River Estuary Action Agenda**.

On the 20th anniversary of the EPF, a 2013 DEC report noted that \$217 million in funding was provided for 1,300 projects at municipal parks, historic preservation and heritage areas, and nine new state parks were added; 330 communities received funding for waterfront revitalization projects, and 650,000 acres of open space were protected. When grants become available, they are listed on the [DEC Grants web page](#) and OPRHP's [Grants web page](#).

Green Innovation Grant Program (GIGP)

<https://www.efc.ny.gov/GIGP>

A matching competitive grant program to improve water quality and implement green stormwater infrastructure. Grants are made available to cover a minimum of 40% up to a maximum of 90% of eligible project costs. A match from non-federal (state or local sources) is required. GIGP is administered by the NYS EFC. OPRHP has received funding from this program to install porous pavement at parking lots in Saratoga Spa State Park, restore dunes restoration along the shore of Lake Ontario at Southwick Beach State Park, and retrofit an existing parking lot with green infrastructure at Taughannock Falls and Green Lakes State Parks.

Historic Preservation Program

<https://parks.ny.gov/grants/historic-preservation/default.aspx>

A matching grant program to improve, protect, preserve, rehabilitate, restore or acquire properties listed on the State or National Registers of Historic Places and for structural assessments and/or planning for such projects.

Heritage Areas Program

<https://parks.ny.gov/grants/heritage-areas/default.aspx>

A matching grant program to acquire, preserve, rehabilitate or restore lands, waters or structures identified in approved management plans for Heritage Areas, designated under section 35.03 of the Parks, Recreation and Historic Preservation Law, and for structural assessments or planning for such projects. Projects must fall within a NYS Designated Heritage Area.

Hudson River Estuary Program

<https://www.dec.ny.gov/lands/5091.html>

A DEC program to implement priorities outlined in the Hudson River Estuary Action Agenda. Aimed at conserving or improving clean water; fish, wildlife and their habitats; waterway access; community resiliency, and river scenery. This grant program is designed to help local organizations and communities advance four categories of projects and programs through planning, feasibility studies, and/or design.

- Adapt land uses and decision-making in Hudson River shoreline communities to factor in climate change, flooding, heat, drought, and sea-level rise projections.
- Improve water infrastructure to make it more resilient to flooding and/or sea-level rise.
- Create a natural resources inventory, open space inventory/index, open space plan, open space funding feasibility study, conservation overlay zone, or connectivity plan.
- Develop a watershed and/or source water management plan.

Hudson River Valley Greenway Community Grants

<https://hudsongreenway.ny.gov/grants-funding>

The Hudson River Valley Greenway Grant Program provides matching grants for up to \$10,000 to develop plans or projects consistent with the five Greenway criteria: natural and cultural resource protection, economic development, public access, regional planning, and heritage and environmental education. Higher amounts are awarded for intermunicipal projects.

Hudson River Valley Greenway National Heritage Area Program

<https://hudsongreenway.ny.gov/grants-funding>

This program offers funding for projects that further the goals and mission of the Hudson River Valley National Heritage Area: to recognize, preserve, protect and interpret the nationally significant cultural and natural resources of the Hudson River Valley for the benefit of the Nation. These grants are intended to provide seed money to organizations for the purposes of: programming, interpretation and marketing that support the mutual goals of the program and applicants. Highest priority will be given to projects or programs that feature a designated Hudson River Valley National Heritage Area Heritage Site. Grant amounts are typically between \$1,000 and \$5,000.

Hudson River Valley Greenway Conservancy Trails Grant Program

<https://hudsongreenway.ny.gov/grants-funding>

Program is dedicated to funding recreational trail projects. Special consideration is given to projects that seek to implement the goals of the Greenway Trail Program.

Local Waterfront Revitalization Program (LWRP)

https://www.dos.ny.gov/opd/grantOpportunities/epf_lwrpGrants.html

Funded under Title 11 of the EPF, the LWRP provides matching grants on a competitive basis to eligible villages, towns, cities, and counties located along NYS's coasts or designated inland waterways. Supports planning, design, and construction projects that help revitalize communities and waterfronts in ways that ensure successful and sustainable revitalization. Program is administered by the NYS DOS.

New York Works

<https://newyorkworks.cityofnewyork.us/overview/>

A statewide initiative to invest billions of dollars to create jobs and rebuild the State's roads, bridges, parks, and other infrastructure. Funding includes \$89 million to perform repairs and upgrade critical infrastructure through capital projects at the State's parks and historic sites. Projects include the revitalization of Jones Beach and Niagara Falls State Parks, and rebuilding dunes and beaches at Robert Moses and Gilgo State Parks.

Parks Program

<https://parks.ny.gov/grants/parks/default.aspx>

A matching grant program for the acquisition, development and planning of parks and recreational facilities, to preserve, rehabilitate or restore lands, waters or structures for park, recreation or conservation purposes, and for structural assessments and/or project planning. Both indoor and outdoor projects are eligible, and projects must reflect the priorities established in the SCORP.

Snowmobile Trail Grant Program

<https://parks.ny.gov/recreation/snowmobiles/grant-program.aspx>

This grant supports local governments that develop and maintain of snowmobile trails designated as part of the State Snowmobile Trail System. Snowmobile registration fees provide program funding; administered by the OPRHP Snowmobile Unit.

Zoos, Botanical Gardens, and Aquariums (ZBGA)

<https://parks.ny.gov/grants/zoos-botanical-gardens/default.aspx>

A non-competitive grant program for collections care and interpretation at municipal or nonprofit institutions that house, care for, and interpret systematically organized collections of living things for the public. Funding from EPF; administered by OPRHP.

Other Programs**Conservation Partnership Program (NYSCPP)**

<https://www.landtrustalliance.org/what-we-do/our-regional-programs/northeast/new-york-program/new-york-state-conservation-partnership>

A public-private partnership between the DEC and the Land Trust Alliance's NY Program. The NYSCPP program offers competitive matching grants to qualified NYS land trusts to advance land conservation, economic development, farmland protection, community conservation, recreation and tourism.

Park and Trail Partnership Program

<https://www.ptny.org/our-work/support/park-trail-partnership-program>

The Park and Trail Partnership Program provides funding to organizations whose primary mission is the preservation, stewardship, interpretation, environmental education, maintenance, and/or promotion of a specific New York State park, trail, historic site or public land under the jurisdiction of OPRHP or DEC. The program, which launched in 2015, is administered jointly by Parks & Trails New York and OPRHP. It is funded at \$1 million for SFY 2019-20.

Preserve New York Grant Program

<https://www.preservenys.org/preserve-new-york.html>

Launched in 1993, the Preserve New York program provides grants for reports on historic structures, including building condition, cultural landscape, and cultural resource surveys. Applicants must be a unit of local government or nonprofit group with tax-exempt status. State agencies and religious institutions are not eligible to apply. The program provides support up to 80% of the project cost. Applicants must provide 20% of the total project cost as a cash match. Grants range between \$3,000 and \$10,000. The program is offered through the NYS Council on the Arts (NYSCA) and the Preservation League of NYS (PLNY).

Lake Champlain Basin Program (LCBP)

<http://www.lcbp.org/about-us/grants-rfps/>

The LCBP offers grants to support implementation of local projects that benefit Lake Champlain, and funds scientific research that drives resource management in the Basin.



Grant Allocation

SCORP helps to inform the allocation of state and federal funds for recreation and open space projects in NYS. The policies, needs assessment, initiatives and goals described throughout the SCORP are translated into criteria for evaluating projects in an objective manner. The SCORP is also used to develop the rating system for the Open Project Selection Process (OPSP) for LWCF projects and contributes to the development of rating systems for EPF grants for municipal and nonprofit projects, RTP grants, and various acquisition categories consistent with the Open Space Plan. SCORP guides the allocation of funds to areas and facilities in greatest need.

The State's park and recreation priority-rating systems help rank projects on a statewide basis, translating measurements of need and statements of policy to maximize fulfillment of recreation needs while protecting natural assets. To assure continuity throughout the process, all applications are reviewed on a statewide basis, and meetings are held with regional field representatives and technical staff to provide final review, ranking and approval.

In recent years, destruction from storms has given greater urgency to considering climate change impacts on proposed infrastructure projects, resulting in the passage of the 2014 **Community Risk and Resiliency Act** (CRRRA). This requires all state agencies and funding applicants to consider future risks posed by storm surge, sea-level rise, and flooding. Now, led by DEC, agencies must comprehensively assess their vulnerabilities and develop climate change mitigation plans. The State has also established a new EPF sub-fund—the first since the EPF's inception—explicitly to help mitigate and adapt to climate change.

To address potential environmental justice issues relevant to the outdoor recreation system, NYS and its partners must ensure that all communities enjoy the same degree of protection from environmental and public health threats, while affording equal access to the decision-making process. NYS strives for the fair treatment of everyone, regardless of race, color, national origin, or income, when considering the implementation and enforcement of environmental laws, regulations and policies. Fostering environmental justice in the State involves activities that both reduce environmental burdens and target benefits to underserved populations or areas struggling with disproportionate burdens. The pressing need for green and open space in underserved neighborhoods in NYC, Yonkers, Syracuse, Albany-Schenectady-Troy, Binghamton, Rochester and Buffalo, among others, requires an ongoing focus on preserving and creating both large-scale open space and smaller urban sites.

The **Office of Environmental Justice** (OEJ) was established to serve as a vehicle to address environmental justice concerns across DEC operations. OEJ runs several programs that benefit communities and has established policies and criteria to guide DEC staff on considering EJ impacts to communities in the environmental permit review process and across other DEC operations. DEC also offers EJ Community Impact Grants to assist community-based organizations addressing environmental justice-related concerns. In 2019, \$4.3 million in funding was available through this program.

Partnerships

Outdoor recreation providers often enter partnerships to support their efforts to provide safe, high-quality public recreation opportunities, and to protect natural and cultural resources. Partnering with governmental agencies, the private sector, nonprofit organizations and volunteers is an essential tool in the acquisition, development, operation and maintenance of the State's recreation facilities. For these partnerships to be successful:

- the integrity of a park or site and its recreational, natural and cultural resources is protected and maintained;
- the partnership is designed to supplement—not supplant—resources provided to an agency through their normal budgetary process;
- ownership, control or responsibility for the protection of the land and facilities is not relinquished by the administering agencies.

OPRHP's long-standing partnership with the Land and Water Conservation Fund (**LWCF**) program is a key component of the State's efforts to provide a top-tier outdoor recreation system. With the help of LWCF funding, parks, playgrounds, historic and cultural sites have been acquired and/or developed in virtually every community in NYS. The LWCF program also helps OPRHP meet its mission by supporting regional projects that provide accessible recreation opportunities to youth, adults, senior citizens and people of all abilities. Its grants help develop high quality recreation areas across the State's communities and support new parks of state and national significance, ensuring that the State can meet new demands and trends in outdoor recreation. The LWCF also helps protect open space in NYS through the Forest Legacy Program (FLP), also funded under LWCF, which helps protect working forests.

The NYS Natural Heritage Trust (NHT) is a publicly supported 501(c)(3) charitable organization whose mission is to receive and administer gifts, grants and contributions that will further the State's public programs for parks, recreation, cultural, land and water conservation and historic preservation. Through donations, fundraising efforts, and cooperative programs, for more than fifty years the NHT has supported cultural and recreational programs, capital projects and improvements, environmental and outdoor education, natural resource protection and restoration, and historic preservation. In addition to OPRHP, NHT's agency partners include DEC and DOS, and NHT also partners with other public and private entities, nonprofits and friends' groups to secure and administer funding. OPRHP's Guidelines for Public/Private Partnerships is available online at the [OPRHP website](#).

LWCF at Work in New York State

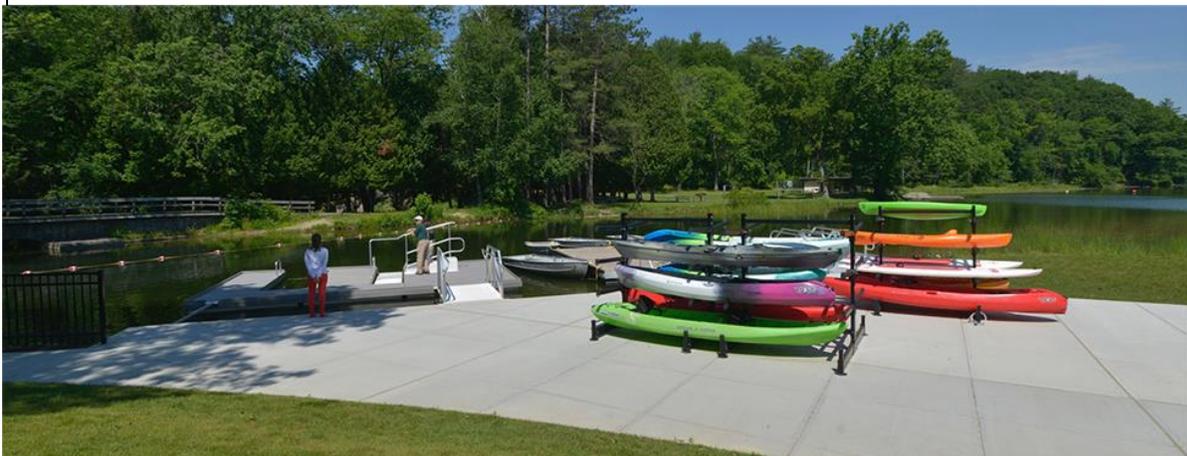
Chenango Valley State Park Beach Area Improvements

With frontage alongside a scenic tributary of the Susquehanna River, Chenango Valley State Park has for decades been a popular destination for boating, swimming and fishing in New York's Southern Tier. In July 2018, a ribbon cutting officially opened the park's improved waterfront after a \$2.2 million revitalization project reconstructed the beach.

Structural renovations and improvements to an existing man-made beach and surrounding walkways included a new water circulation system to ensure fresh flows from the river. A fun new splash park was installed adjacent to the bathhouse.

The beach reconstruction work included replacing an engineered shoreline wall with natural sand, and re-grading the beach to create a variety of depths for swimming and wading. A diving board, slide, and lap lanes provide additional options, and public boat rentals are available seasonally at floating docks.

The waterfront project has improved the water quality of both the swimming area and river. With rain gardens, new stormwater drainage elements and a treatment system for spray pad water, the project minimizes run off from the site, reducing potential impacts to adjacent surface waters.



Chenango Valley State Park, in OPRHP's Central Region, is a popular regional destination for swimming and boating.

Types of Partnerships

Successful partnerships at parks and other State-owned facilities are designed as mutually beneficial for the administering agency, the partners, the facility, the environment and the public. These include:

Acquisitions – Nonprofit organizations in some cases are able to advance property acquisitions with a landowner more efficiently than a government agency. The nonprofit purchases and then holds the property until the governmental body can secure funding and implement the acquisition process. A nonprofit can also function as a third party in negotiations with a landowner. For example, OPRHP acquired a 30-acre parcel—known as the Marydell property—from the Institute for Christian Doctrine, Inc. in February 2017. The acquisition was facilitated by the Trust for Public Land, who held an option on the property, and which was later added to Nyack Beach State Park. OPRHP has partnered with the Open Space Institute, the Trust for Public Land, and other land trusts in property acquisitions.

Cooperative/Management Agreements – A public agency can enter into an agreement with either a nonprofit group or a municipality, which will operate a facility on the agency’s behalf. The nonprofit/municipality is then largely or solely responsible for all day-to-day operations and expenses for that facility. Irondequoit Bay State Marine Park and Amherst State Park are examples of local municipalities which manage OPRHP facilities.

Friends’ Groups – An agency can enter into an agreement with a nonprofit organization to form a group that provides support to a specific park, historic site or recreation area. OPRHP facilities with active friends’ groups include Sonnenberg Gardens & Mansion State Historic Park, Clarence Fahnestock State Park, and Minna Anthony Common Nature Center.

Concession Agreements – Concessionaires at State parks are generally for-profit entities that offer services and goods. An agency determines the need for a service and solicits proposals from the private sector. Typical concession contracts are services for marina operation, food vendors, and recreation equipment rental, or for activities such as rafting trips or winter sports programs. An objective is to encourage competition for private sector investment and operation of public service facilities.

Gifts – Land or facilities from the private sector may be donated to a governmental body. Rockefeller State Park Preserve, Harriman State Park, and Letchworth State Park all include lands that were donated to OPRHP.

Reinstein Woods Environmental Education Center is a 292-acre complex of forests, ponds, and wetlands near Buffalo. DEC partners with Friends of Reinstein Woods to offer snowshoe and cross-country ski rentals for use on the center’s trails.



OPRHP Partnerships

Multi-agency partnerships help to promote common goals such as invasive species management, environmental and cultural interpretation/education and wildlife monitoring. Examples include:

- Horticultural Society of New York partnered with OPRHP to create an urban greenhouse at New York City's Denny Farrell Riverbank State Park in Harlem. The greenhouse offers nutritional educational programs and improves access to fresh produce to the community.
- NYS Colleges and Universities (public and private) Friends of Recreation, Conservation and Environmental Stewardship (FORCES) program fosters volunteerism by providing students the opportunity to gain valuable experience and develop personal connections to NYS parks.
- Public-Private Partnerships OPRHP, Toyota and the American Park Network to expand free public Wi-Fi systems in NYS Parks.
- NYS Bridge Authority Owns and operates Walkway Over the Hudson State Historic Park, in partnership with OPRHP.
- Open Space Institute Raises private funds for public park projects. Projects have included carriage road restoration at Minnewaska State Park Preserve; beach renovations at Fahnestock State Park; the new Humphrey Nature Center at Letchworth State Park, and a new nature center at John Boyd Thacher State Park.
- Parks and Trails New York Competitive grants are available through the NYS Park and Trail Partnership. Administered by PTNY in partnership with OPRHP.

Sponsors – Events conducted at public facilities may be sponsored by various businesses or organizations. Events generally advance the goals of the sponsor(s) while providing an activity or benefit to the public. Mountain bike and running races, air shows at Jones Beach State Park, and fireworks displays are examples of activities that may be sponsored by outside entities at State-owned facilities.

Volunteers – Informal agreements with volunteers on public lands include helping build/maintain trails, or invasive species removal. The annual *I Love My Park Day* brings thousands of volunteers to help clean up and restore state-owned sites. OPRHP's *Camper Assistance Program*, offers free camping sites at State-owned campgrounds to seasoned campers who are willing to share their expertise with other people.

Adopt-a-Resource programs – Agreements with individuals/organizations for activities that help preserve or enhance natural resources on state lands. NYS Canal Corporation's Adopt-a-Trail program allows volunteers to register to help maintain a particular trail segment. Tasks may include mowing, maintaining signs, painting, or landscaping. DEC's Adopt-A-Natural-Resource Stewardship Program offers a more formalized arrangement which allows individuals and organizations to enter into stewardship agreements to help preserve or enhance natural resources on its lands.

Research – Individuals, nonprofit organizations, and academic institutions regularly conduct inventories and perform research tasks on public lands. Collected data helps improve stewardship and management and is valuable for developing environmental education and interpretive programs. Studies have been done on snowy owls at Buffalo Harbor State Park, biodiversity at Gilbert Lake, and lichens at Taconic State Park.

Guidelines for Partnerships

Guidelines are key to ensuring that partnerships are compatible with the mission of the agency and the framework that governs the agency. In 2015, with the assistance of a working group comprised of representatives from various recreation, environmental and cultural organizations, OPRHP published a set of public/private partnership guidelines. Although these are specific to OPRHP, they can apply to other public agencies as well. The guidelines flow from the Agency's mission Statement to the goals and objectives identified in SCORP.

Excelsior Conservation Corps

To help engage young adults in the fields of environmental conservation and education, in 2015 the Governor launched the **Excelsior Conservation Corps (ECC)**. A collaborative program supported by OPRHP, DEC, the Environmental Facilities Corporation, and AmeriCorps, the ECC is a 10-month residential program for young adults between the ages of 18 and 25, or up to 28 for veterans.

ECC members gain the technical skills needed to meet the State's conservation needs, while acquiring valuable work experience that will give them the experience needed to pursue careers in related fields. Each program member is placed on a team that specializes in one skill area—infrastructure, environmental education, surveying, or stewardship and more—and receives several weeks of professional training related to their team's focus before hitting the field.

Members work on habitat restoration, trails maintenance, energy efficiency, environmental

education, historic site preservation, and infrastructure repair. All projects are on public land and serve the public by enhancing the experience of visitors to New York's natural and recreational areas.

In 2018, ten ECC members traveled to the Ganondagan State Historic Site in Victor, NY. Tasked with helping to remove and monitor targeted invasive plant species, the team worked with regional staff, pulling the plants out on trails and open areas, and piling them where they could be safely removed from the site. That day over 13,000 plants were removed by hand. The team also used GPS to record data on six different invasive plants across a 70-acre field.

The ECC program offers young New Yorkers a chance to learn about—and be actively involved in the enhancement of—their state's natural environment. Since its creation, its members have provided more than 187,600 hours of volunteer service, improving 302 miles of trails, 986 acres of land and providing programs for 37,000 people.



ECC members install solar panels (left) at Wellesley Island State Park and practice their bridge building skills (right).

CHAPTER 7—ENVIRONMENTAL IMPACTS

State Environmental Quality Review (SEQR)

New York’s State SEQR Act requires all state and local government agencies to consider environmental factors in agency decision-making processes and actions, including actions they have the discretion to approve, fund or directly undertake. SEQR requires agencies to balance environmental impacts with social and economic factors when deciding to approve or undertake an “action.” Agencies must assess the environmental impacts of actions which they propose, evaluate alternatives, develop methods for minimizing potential adverse impacts, and provide an opportunity for the public to participate in the planning process when proposals may have significant impacts.

When an action is determined to have the potential for at least one significant adverse environmental impact, development of an Environmental Impact Statement (EIS) is required. The SEQR process uses an EIS to examine ways to avoid or reduce adverse environmental impacts related to a proposed action, including an analysis of all reasonable alternatives to the action.

The action in this case is the adoption and implementation of the SCORP 2020–2025. The updated SCORP will guide future recreation planning, activities, and development in the State. Its adoption and implementation have the potential for significant effects on the environment. Since the SCORP is a broad-based plan, an EIS that evaluates site-specific impacts of projects is not possible; thus, a Generic EIS (GEIS) is being prepared. It is more conceptual in nature than a site-specific EIS which addresses a proposed project.

Generic EIS

This document constitutes the draft plan and draft GEIS and discusses the potential impacts and mitigation of impacts associated with adoption and implementation of the SCORP 2020-25.

The plan describes:

- **New York State’s (NYS) outdoor recreation resources;**
- **social and recreational trends;**
- **a recreation needs assessment including general projections for future recreation needs and activities; and**
- **goals and recommendations for implementation.**

The GEIS presents a review of the overall direction of the State’s outdoor recreation plan in the context of maximizing needed recreational opportunities while protecting the State’s natural and cultural resources. Intended outcomes of the plan direction are to improve the durability and resilience of the State’s recreational opportunities and resources. The environmental analysis of the SCORP focuses on the adequacy, clarity, and appropriateness of the goals and recommendations that implement the State’s vision for outdoor recreation.

The GEIS is not intended to provide a comprehensive analysis of impacts of each program or project which may be undertaken pursuant to SCORP. It serves as a reference, providing a sound environmental planning base, setting forth the process for evaluation of future actions and related impacts. Evaluation and review processes are discussed in terms of assuring that resource protection is given appropriate consideration during planning and implementation of programs and activities under the SCORP “umbrella”.

The Draft SCORP/GEIS will be made available for public review and will be the subject of a public meeting (webinar), in accordance with the public review process of the SEQR. Comments on the Draft SCORP/GEIS will be incorporated and addressed in the Final SCORP/GEIS as part of the SEQR record, prior to adoption of SCORP.



Environmental Setting

The environmental setting for SCORP consists of the people and the natural, recreational, scenic, historic and cultural resources of NYS, as well as social and economic characteristics. Resources potentially affected by SCORP include:

- recreational areas,
- lakes, rivers, streams, wetlands, coastal, and estuarine waters,
- significant natural habitats,
- fish and wildlife,
- rare species of plants and animals as well as common species,
- forests,
- agricultural areas,
- parklands,
- historic sites,
- archeological areas,
- scenic areas, and
- communities.

The setting also includes the general public (residents and nonresidents), and outdoor recreation service providers.

Alternatives

Choosing not to prepare this plan is not a viable option since the State is required to prepare SCORP, both pursuant to State law and to maintain eligibility for federal funds under the LWCF.

In terms of implementation, not preparing the SCORP would mean that there would be no statewide guidance based on current data for the provision of outdoor recreation, and, if the State continued to use recommendations from the 2014 SCORP, its implementation would not be responding to changing recreation supply and demand or based on updated goals and recommendations.

In addition, without proper identification of recreational need, failure by the State to implement SCORP may result in the loss of opportunities for public access and outdoor recreation. Without the guidance provided by updated goals and recommendations, adverse impacts to the environment could occur. Moreover, without the focus and goals set by SCORP, opportunities for creating and maintaining statewide outdoor recreation facilities and protecting their natural and cultural systems could be hindered.

Another alternative would be a smaller scope, such as a focus on OPRHP actions only, or limited to those actions that may be funded under LWCF. Limiting SCORP in this manner would not capture the breadth of the outdoor recreational resources, programs and opportunities within the State. Alternatively, attempting to address every outdoor recreational program and facility in the State is beyond the realm of possibility. SCORP, as proposed, provides a balance between these two extremes. It includes the best information available on state and regional programs, facilities and actions related to outdoor recreation and open space resources. It also provides the Statewide framework to guide the provision of outdoor recreation and open space opportunities into the future.

Environmental Impacts and Mitigation

In this section, programs and goals are briefly described and the implications as to potential environmental impacts are discussed. Where possible, general approaches that mitigate potential adverse impacts are identified.

Planning Process

The planning principles described in Chapter 1 assure that recreation planning in the State considers environmental as well as human resources. Continually reevaluating assumptions, methods and objectives throughout the planning process helps assure that natural and cultural resources are protected when conditions change, or new information is available.

The objectives of the planning process support the SCORP goals and planning principles. These objectives further protect resources by guiding agencies in formulating priorities. Adequate information and analysis, coordination, and citizens' participation are key to the implementation of actions that protect resources and enhance recreation. The planning process considers land and water resources and user impacts and emphasizes the best use of available resources and knowledge. Public participation in the planning process ensures a balance of interests in plan formulation.

The State Outdoor Recreation System

As discussed in Chapter 2, some of the State's most significant natural and cultural assets are found in Forest Preserves, State Forests, State Parks, and other lands under DEC and OPRHP jurisdiction. NYS also provides natural, cultural and recreational opportunities on lands administered by other state agencies and provides environmental and recreation programs in areas beyond the boundaries of state-managed lands. Stewardship of state lands and continued provision of services to the public are extremely important to the overall availability of public open space and recreation, as well as for protecting the State's natural and cultural resources.



East River State Park, New York City



Follensby Clear Pond, St. Regis Wilderness, northern Adirondacks

DEC oversees the Forest Preserves, State Nature and Historical Preserves, Wildlife Management Areas, and State Forests, all of which provide extensive recreational opportunities and open space benefits. The Unit Management Planning (UMP) process addresses resource issues regarding DEC lands, and provides specific guidance for appropriate management. Existing criteria determine whether additional recreational access can be provided within the limitations of the resources to support such use.

DEC is the State's regulatory authority for fish and wildlife. Wildlife-related recreation, such as hunting, trapping, fishing, and wildlife observation and education, is an important part of the State's outdoor recreation system. As fish

and wildlife do not adhere to property ownership boundaries, DEC's statewide guidance and rules for protection and management of wildlife populations and habitats is critical to maintaining a healthy balance between recreation and wildlife protection across the State.

Nearly 80% of the State Park system is in natural areas with a wide range of geological features, ecological habitats and plant and animal species. It also includes many historic parks and sites and linear parks and trails. The benefits of the system are not only afforded to the park visitor—there are multiple benefits for the citizens in protecting natural and cultural resources—but through intrinsic value: knowing the resources exist and are protected. Likewise, the resources themselves benefit through public ownership and protection.

The NY Office of General Services (OGS) promotes preservation and use of State lands for recreational use by facilitating land transfers to municipalities for such purposes. The lands are perpetually protected by requiring reversion to the State if the specific purpose is no longer pursued. OGS also provides communities with access rights in lands underwater to promote coastal uses. Submerged cultural resource protection is also promoted by OGS in cooperation with other agencies.

Other NYS agencies that enhance open space and recreation opportunities were also discussed in Chapter 2. Together, state agencies provide a wide range of such opportunities and resources available to the public.

Trends, Issues and Needs

Chapter 3 describes the processes for measuring the supply of recreation in the State, estimates the needs (demand) of the citizenry and projects this information into the future. The results provide an objective framework for evaluating future impacts on the recreation system, as well as providing guidelines for the allocation of recreation resources. By continuing to improve communication and coordination among public and private recreation providers, the information network on recreation supply can continue to develop. Inventories and analyses will be refined by the use of GIS and other technologies. Information generated on supply and demand can also be used in evaluating the impact of recreational use on the environment—particularly whether a facility is being used within its capacity or exceeding acceptable use levels.

There are many factors that need to be considered when planning for recreation facilities throughout the State. As in the past, this SCORP recognizes that urban recreation needs are a significant component of the State's total recreational need. Demographic changes such as an aging population and increased ethnic diversity may result in an increase in participation in some activities and the need for different or more accessible recreational facilities. With an increase in ethnic diversity, consideration will need to be given to facility design, signage, park programming, and public awareness to accommodate more culturally diverse populations. The rise of economic inequality has been shown to have an impact on available recreational resources in communities. Providing more open space and access to recreation facilities to underserved communities will take coordination and partnerships.



Cayuga Lake State Park

As described in Chapter 3, two primary surveys were used in estimating recreational demand which provide the means for input by the general public and park professionals (see Appendix F for survey samples). In some cases, balance is needed between professional judgment regarding recreational needs and the actual desires of the public for additional facilities. Park professionals, for instance, may be biased by aspects such as lack of staffing and maintenance concerns for recreational facilities. Park visitors and the general public, though, may not recognize such needs, or consider maintenance costs.

Over 50% of citizen survey respondents indicated that more recreational facilities are needed. The top three issues for park professionals surveyed involved the need for more funding for maintenance and repair, more government spending, and greater staffing. To address the increased demand for new facilities, and to maintain existing facilities, public-private partnerships will be key to help maximize availability and use of funding, staffing, volunteering, and other resources.

Levels of participation in recreational activities were determined based on the *2018 Public Outdoor Recreation Survey* results, which were projected out to 2025. Walking for enjoyment—including jogging/running and day hiking—continues to be the top recreation activity, followed by relaxing in the park, swimming, biking, and camping. The top two activities generally require minimal equipment costs and can have lower impacts on the land than other activities. In urban areas, however, opportunities for participation in such activities may be constrained by limited open space and may require creative solutions to meet demand.

Activity Trends

Swimming as an activity was defined as occurring in an ocean, lake, river or in a public or private pool. Funding and staffing are required to provide safe and guarded swimming areas. Of those survey respondents indicating their community was lacking recreation facilities, swimming pools/beaches was the most requested recreation need. In some NYS regions, demand is not being met, possibly due to pools involving more intensive and costly development and management. In other more urbanized areas, while demand may be met, swimming facilities may experience overuse and excessive maintenance needs.

With climate change, including sea level rise, maintaining infrastructure to support swimming in natural waterbodies has become more challenging. Parking lots, boardwalks, and bathhouses should be constructed to withstand or accommodate higher wave action and flooding, and stormwater infrastructure needs to be able to handle larger, more intense storms. Higher wave action and/or siltation may erode or significantly impact swimming areas, deeming them no longer suitable for swimming or requiring major upgrades to keep facilities open.

Bicycling as an activity was defined as bicycling/mountain bikes whether on trails, established paths, off-road or on highways. Bicycling continues to grow in popularity both for recreation and commuting. Bike trails can be provided in association with improvements in transportation corridors as well as with other trail facilities. Fat bikes are gaining in popularity as a method of biking in winter conditions and in off trail areas including beaches. Considerations need to be given for designating appropriate areas for this use while protecting

resources. As recreational biking continues to increase in on-road settings, so will the need for increased safety. Enhanced bicycle safety along roads, such as with the use of “sharrows” (shared lane markings) or separated bike lanes, may prove to further increase the popularity of this activity.

Biking trails and other trails vary, from wide, multi-use paved paths, to winding singletrack trails through the woods. Use of existing corridors for trails, such as utility or former transportation rights-of-way, can minimize impacts on the land. Most natural surface trail facilities can be developed at low cost and with minor adverse impacts to the environment. As with any trails or development, proper siting and design are the most important consideration in minimizing impacts to natural and cultural resources.

Provision of camping facilities may include resource-intensive development, such as for recreational vehicles (RV)—which usually require paving and higher capacity water and sewer (or pumpout) facilities—and development of cabins and cottages. Even tent camping can result in impacts due to overuse and soil compaction. This may impact the visitor experience, due to crowding and resource degradation, such as lack of vegetative or other screening between sites. As with all outdoor recreational activities and facilities, having up-to-date inventories of, and an understanding of, natural and cultural resources is key to providing recreational facilities in an environmentally sensitive manner.



Recreation and Resiliency

As discussed in Chapter 4, climate change is having myriad effects on outdoor recreation activities and areas where recreation occurs. Examples include: more severe weather events (e.g. flooding, lightning, hail) affecting outdoor activities; damage to shorelines (beach erosion) and recreational structures (winds and high water); a shortened winter season affecting winter activities; and increased pest species, such as ticks and mosquitos, in natural areas.

Humans are becoming more creative about resiliency measures and adapting to climate change. Planning for sea level changes and other potential climate-related impacts has become an integral component of the recreation planning process. Through inventories, research, analyses, and collaboration, projects are being designed to either withstand the impacts (e.g. sustainable shoreline projects; hardening shorelines in high population areas) or adapt appropriately (e.g. coastal marsh restoration; incorporating green stormwater infrastructure into facilities). As our recreation system becomes more resilient, the expectation is that facilities will be better protected, waterfront access will be safer, and wildlife habitat will be maintained and/or enhanced. There may be temporary, minor adverse environmental impacts during the construction of projects. The goal for resiliency, though, is to protect resources, minimize adverse long-term impacts, and, in many cases, benefit the natural and cultural resources that improve the visitors' experience.

Implementing sustainable practices is a key element of improving the State's outdoor recreation resource resiliency. Waste and energy use reduction, adaptive re-use of structures, alternative or renewable energy generation, and water conservation are examples. Through concerted efforts, these types of practices decrease expenditures, reduce the consumption of resources, and extend the life and utility of facilities.

Wetlands

As discussed in Chapter 4 (pages 78-86), wetlands provide many functions and benefits for both humans and wildlife. Some of these include erosion and sedimentation control, flood and storm water control, and protection of water quality. Wetlands can contain high biodiversity and play a critical role in the life cycles of many fish and wildlife species. They are also the location for many outdoor recreational activities, such as, hiking, bird watching, hunting, fishing, trapping, boating, and photography. In recognition of this importance, state and federal laws and programs are aimed at protecting freshwater and tidal wetlands.

DEC plays a leading role in wetland mapping, regulation, and protection in the State. Several divisions within DEC are responsible for various aspects regarding wetlands, including acquisition, permitting, and enforcement. In addition to DEC's efforts, it takes coordination between state, federal and local agencies to conserve and protect these resources.

Multilevel protection, from acquisition to management (e.g. planning, design, restoration), education, technical assistance and inventory, all combine to provide an integrated protection system. More programs are being implemented through new partnerships and cooperation with all interested and affected parties. Management agreements with other entities must be carefully crafted to ensure proper stewardship of the State's fragile wetland resources.

Site-specific reviews will identify when wetlands may be impacted. Permitting requirements under state or federal law seek alternatives with no, or minimal, impact, requiring compensatory mitigation when impacts are unavoidable. The SEQR process is used to identify alternatives and avoid and minimize potential impacts.

The State's Coastal Management Program (CMP) includes a policy specific to the preservation and protection of tidal and freshwater wetlands. The SCORP furthers this policy through numerous goals that include protection of natural resources and biodiversity.





Goals and Recommendations

To maximize the social and economic benefits associated with recreation, while minimizing adverse impacts to the resources of the State, it is critical that while planning for recreation programming and development of recreational facilities, consideration be given to the entire set of the SCORP themes, goals and recommendations. Focus on only a portion of the goals, or giving undue weight to certain recommendations, can result in substantial reduction in the quantity of potential recreation services (and the associated benefits), or in the quality of the State's natural and cultural resources.

The SCORP's themes, goals and recommendations are comprehensive, and consistent with the State's desire to conserve and protect its natural and cultural resources and environment, and provide enjoyable recreational and interpretive opportunities, while enhancing the public's safety and welfare. Resource protection is balanced with other goals to achieve optimal levels of recreational facilities and programs, in view of the capability of resources to support use.

Each time the SCORP is updated, suggestions for additions or revisions are sought from OPRHP and DEC staff, State Council of Parks and regional councils, and cooperating agencies, as well as the public, through the public participation process. This ensures that the goals and recommendations continue to be responsive to both recreational needs and resource protection. Since SCORP is a broad framework within which more detailed planning must take place, it is not possible to definitively identify adverse effects. It is consequently infeasible to suggest specific mitigation measures.

The State's review processes, including SEQR, assure that due consideration is given to protection of its natural and cultural heritage. These processes by which more detailed plans and projects are developed and evaluated should serve to minimize, if not eliminate, potential adverse effects associated with development of recreational facilities.

This SCORP contains themes and goals that reflect major issues and provide a larger context to enhancing existing recreational programs and activities across the State. The SCORP themes are woven throughout the goals and recommendations, assuring focus on them as an overarching framework.

Goal #1: Connect children and adults with nature and recreation by improving access to outdoor recreation opportunities.

Some recommendations within this goal could potentially have both beneficial and adverse impacts on the environment. Examples include:

- improving access to outdoor recreation through multiple transportation options;
- expanding programming and new outdoor recreation opportunities; and
- updating and retrofitting facilities to become more universally accessible.

Following the environmental review process helps to identify and avoid, minimize, or mitigate potential adverse impacts. For example, in identifying new outdoor opportunities for underserved communities, agencies and municipalities will follow review processes that ensure open space is conserved and that ecological communities are protected while providing appropriate access. In general, though, these types of actions will not require nor will likely have a significant adverse impact on the environment.

Other recommendations from this goal, such as fostering partnerships and continued use of the Access Pass, are not actions that would generally require SEQR review or that would be likely to have negative environmental impacts. Partnerships are essential to improving outdoor recreation opportunities. Partnerships can also be used to assist individuals in gaining access to the parks, such as, working to improve roads outside the park to include bicycle lanes and bus stops.

To support urban recreation initiatives and outreach to underserved communities, creative use must be made of existing school, community, and park facilities. Outreach, encouragement of public transportation to distant parks, facilitation of pedestrian access and coordination with community groups are all necessities for successful urban recreation programs. Through environmental interpretation and other programs, better use can also be made of urban open space to create an awareness of important natural resources even within the confines of urban areas.

Encouraging physical activity not only improves health but can reduce greenhouse gas emissions (walking and bicycling) and increase awareness of the need to preserve open space and recreation.

This goal also promotes CMP coastal policies regarding development, fish and wildlife, and public access, when improvements are made to access coastal waters for outdoor recreation. Site-specific review should be conducted as applicable to assure that the manner in which recreation is provided will be consistent with coastal policies.

Goal #2: Inform the public about outdoor recreation opportunities.

The actions of promoting outdoor recreation, highlighting NY's unique landscape and diverse recreational opportunities, and utilizing social media will likely have no adverse impact on the environment. The effect of increased promotion, however, will be increased use of facilities and open spaces by the public. This requires that facilities be developed and maintained to support the increased use. In light of the impacts of climate change, facilities need to be designed and adapted to be more resilient. Resiliency is reflected in other goals and recommendations.

Implementation of this goal's recommendations would be expected to increase visitors' knowledge of the State's ecosystems and enhance their appreciation of these resources, leading to further respect for the fauna and flora around them. This would promote coastal policies involving fish and wildlife, historic and scenic resources and wetlands, enhancing protection for these resources.

Goal #3: Engage the public through programming.

The goal to expand environmental education and cultural interpretation throughout the State's outdoor recreation estate, and to explore partnerships to help develop and implement such programs, is important for expanding the number of supporters of public facilities. As people learn more about their parks and other facilities, they become more connected to them and may work to protect and preserve them. This, in turn, creates new generations with a greater appreciation of the need to preserve our resources.

Interactive displays, interpretive hikes and guided outdoor learning help youth understand and appreciate their role in the environment and the importance of becoming stewards of the State's natural resources.





Watkins Glen State Park

The inventory and recognition of natural and cultural resources has increased, and this has resulted in a growing demand to make these resources available for interpretation and viewing by the public. Encouraging interpretation and access to natural and cultural resources is not likely to have a negative environmental impact as long as resources are protected.

There are other important considerations in the provision of interpretive and recreational programs. These programs must be geared towards availability to all potential users: persons of all abilities and underserved populations. It's important to have qualified and trained personnel to provide recreational and interpretive programs in an appropriate and effective manner. Partnering with other agencies and entities, such as friends and advocacy groups, can enhance and expand recreational and interpretive programs. With the State's decreased staffing and resources, partnerships enable work to be completed while benefiting all groups, with the public as the major benefactor. It is unlikely that entering into agreements with these groups to provide education will result in adverse impacts to the environment, but agreements and understandings should be developed and put in place so that each entity understands their role and responsibilities.

Education and interpretive programs connect people with nature. They help empower the public with a greater role and involvement in environmental protection and sustainability. Connection to nature among the young, and new connections or reconnections among adults, will increase not only awareness but prompt action on the part of citizens to protect the environment and promote sustainable actions.

Actions such as interpretive programs promote recreation policies. Compatible recreation and interpretive programs generally do not adversely impact coastal areas and are thus consistent with coastal policies. Site-specific review should be conducted as applicable to assure that the manner in which recreation and interpretive programs are provided will be consistent with coastal policies.

Goal #4: Reinvent and redesign the State's outdoor recreation system.

The recommendation to develop master, site, and management plans for parks, recreation, natural, and historic areas recognizes the potential for adverse environmental impacts due to the lack of proper planning. Planning for each facility must be done with careful evaluation of the capacity of resources to accommodate increased or alternative use, and the effects on the quality of recreation, with an emphasis on compatibility of the uses with the resources. Resource inventories and analyses are critical to the planning and design process to assure resource protection while providing suitable recreation opportunities.

Rehabilitation or retrofitting can have significant beneficial impacts, and—with the exception of major expansion or sometimes reconstruction—may have minor adverse environmental effects. Rehabilitation is generally more cost-effective than development of new facilities. Outmoded facilities can be phased out or adaptively reused where possible and feasible. Adaptive reuse enables the preservation of historic structures, furthering the objective to preserve cultural resources.

Universal access standards should be implemented to assure that rehabilitated or newly-constructed facilities and programs are available for persons of all abilities.



The encouragement of compatible multiple uses as well as extension of activity seasons means more efficient use of recreational facilities. This may result in an overall increase in the numbers of users at a specific site. Multiple use can result in more even distribution of users over the course of a day, and extension of activity seasons may have a similar effect over the course of a year. The quality of the visitor experience can thus be improved through lower peak use periods. At the same time, an increase in the total number of users has the potential for adverse impacts on resources.

Proper management of recreation resources requires training of park, historic site, and land managers. This should be done on a continuous basis to assure best management practices are being utilized in protection of environmentally sensitive areas. This also includes training for operation and maintenance of facilities to ensure public health and safety. For instance, operators of drinking water and sewage treatment systems at public recreational facilities need ongoing training to ensure safe operation of these systems and to protect the public and water resources.

Overall, the recommendations are consistent with, and may advance, coastal policies under the CMP. For instance, rehabilitation and adaptive reuse promotes the CMP's development policy to restore, revitalize and redevelop deteriorated and underutilized waterfront areas. Training managers in best management practices can advance the fish and wildlife policy to protect, preserve and restore habitats. The historic resources policy is advanced by protection, enhancement and restoration of historic sites or areas. Use of best management practices in control of stormwater runoff and non-point discharge of pollutants furthers the water resources policies.

Goal #5: Build a 21st century green and resilient park system; repair and green aging infrastructure and open new facilities.

This goal reflects a commitment for NYS to be a leader in demonstrating sustainable design technologies. The goal is focused on reducing impacts on the environment while protecting the infrastructure. The potential benefits of new, sustainable infrastructure means that agencies have the ability to perform and implement these recommendations with little environmental impact to the State's

resources. Rehabilitating existing infrastructure to be more resilient may be challenging, but it is necessary to meet recreation needs and climate change impacts.

Enhancing the State’s commitment toward building resiliency is a mitigating factor in any project design, as environmental sustainability ensures there is a balance and reduction of impacts on natural resources. Policies for the reduction of energy use and consumption have a beneficial environmental impact, as do practices that promote the use of green products and services. Enhancing reuse and recycling, as well as procurement of locally produced commodities, reduces the environmental impacts of facility operation. Energy-efficient design standards for new buildings include reduction of impacts on natural resources as well as actions to increase and improve the natural aspects of a site, such as green stormwater control, daylighting of streams, improved culverts, and use of native plants.

Building trails close to where people live, and in urban areas, will help meet public demand for outdoor recreation. As “walking for enjoyment” remains the top recreation activity, meeting this community-level need is essential to reconnecting people with the outdoors. Using existing corridors is a way of minimizing impacts to the environment while providing access to nature.

This goal furthers coastal policies regarding development and recreation where facilities are in or near coastal areas. Development or rehabilitation should enhance access while not hindering natural coastal processes. Site-specific review will assure this occurs.

Goal #6: Expand and protect natural connections between parks and open space.

Recommendations within this goal include:

- **inventory of ecosystems and natural connectors;**
- **partnership approaches to biodiversity protection; and**
- **acquisition of open space, scenic, historic, and ecologically sensitive areas.**

In general, these types of recommendations will have positive impacts on the environment. Acquiring important natural areas and otherwise non-protected lands to encourage open space protection can protect biodiversity. Creating connections between parks and open space is important for ecological integrity, especially in the light of current threats such as climate change, habitat disturbance, and invasive species.

This goal recognizes the importance of natural connections to the maintenance and enhancement of biodiversity. Implementation will help ensure that landscapes and buffer lands that surround our parks are protected from encroaching development and incompatible land uses. It fosters the development of “connections” between protected lands, greenways, and trails so that people and wildlife can move across the State’s landscapes.

To protect these natural connectors, it is important first to inventory and identify the ecosystems that should be connected, and then to encourage the protection and/or acquisition of critical connectors. One way in which this recommendation will be promoted is through the identification and prioritization of land parcels adjacent to State Park land suitable for acquisition, based upon their potential to protect and enhance biodiversity. The 2016 Open Space Conservation Plan provides goals and principles for land conservation that form the basis for priority conservation projects across the State. Many of the identified regional priorities for land conservation overlap with this goal.

Another strategy is acquisition of in-holdings and important properties adjacent to existing public lands. Acquisition of such properties is normally cost effective, since operational mechanisms are already in existence.

The overall impact of supplying and preserving open space where it is most needed is beneficial; however, careful consideration, planning and public cooperation is necessary. If additional land is acquired for the purpose of new recreational development, careful analysis is necessary to assure that the new facilities are needed, and that development will be compatible with existing resources.

This goal furthers coastal policies regarding protection of fish and wildlife resources and potentially historic and scenic resources and wetland resources. Through careful balancing of protection and use of these corridors, recreation and public access goals can be advanced as well.



Goal #7: Restore, conserve, and protect the State’s biodiversity.

As caretakers of biological resources, owners or managers of open space are responsible for the stewardship of plants and animals, and their habitats. Protecting species and habitats may not always require active management, such as siting projects to avoid negative impacts on biodiversity. In some cases, projects may have the primary goal of preserving or restoring biodiversity. Habitat restoration or invasive species removal projects have beneficial impacts on the environment and can enhance recreational opportunities. They may be undertaken by state agencies or in combination with partners (local, federal agencies, nonprofits).

The recommendations for achieving this goal are imperatives for carrying out the State’s stewardship responsibilities. Protection of the State’s resources is critical in providing opportunities to use or experience those resources and maintain quality recreation. Comprehensive resource information is necessary to identify threats to natural, cultural and recreational resources, and assists in preservation efforts by anticipating potential adverse impacts. Ensuring that recreation development is compatible with environmental limitations and carrying capacities of resource areas is accomplished through the various review processes.

Increasing knowledge and awareness of biodiversity, and approaches to biodiversity protection and maintenance, affords people a better opportunity to appreciate their surroundings and become involved in protection efforts. Partnership development is also key to maximizing these protection efforts. For example, partnerships regarding invasive species policy and management, along with education efforts, help enhance awareness and sensitivity to the impact of invasive species. It will also result in expanded measures to reduce the effects of harmful species and improve biodiversity.

This goal furthers coastal policies regarding protection of fish and wildlife resources and wetland resources. As unique natural communities, wetlands contribute significantly to the State’s overall diversity, and the need for their restoration, conservation and protection is clearly included in state law. Planning and design of recreational access in or near wetlands must be done strategically and carefully to prevent adverse impacts and allow the natural systems to be healthy and resilient.

Goal #8: Expand historic preservation efforts across the State, at the local and regional level, and cultivate pride of place.

Enhancing interpretive and education programming, training and collaborations regarding historic preservation is expected to have positive impacts on the environment by fostering a better understanding of, and protection of, cultural resources. Improved energy conservation at historic sites will reduce energy use, reducing expenditures. This may also better preserve the historic interior furnishings by allowing improved climate control within historic buildings.

Redesigning gateways to historic sites to enhance the visitor experience may require some ground disturbance. Close coordination with the Division for Historic Preservation (DHP) for physical changes to lands or historic structures is required by law and will help preserve these resources. Through this holistic approach involving physical protection, skills training, and programming, historic preservation will be expanded and enhanced throughout the State. This goal furthers the coastal policy for historic resources, such as historic structures, sites, or districts, which are in coastal areas. Again, consultation with the State’s DHP is key to preservation efforts.

Statewide Programs

Appendix E describes the numerous programs that provide recreation and protect natural and cultural resources of the State. These programs are subject to environmental review processes and balancing of goals and interests. This GEIS is not designed to evaluate the impacts of each of these programs. Where adverse environmental impacts may be significant, the programs are subject to SEQR. Many of the programs are designed to protect specific resources, including cultural resources; wetlands and other water resources; fish and wildlife; biodiversity; and coastal areas. Following is a further discussion of the coastal program and its relationship to SCORP.

The State's Coastal Management and Inland Waterways programs, administered by the Department of State, are carried out in partnership with local governments and state and federal agencies. These programs are designed to better manage coastal resources and advance revitalization of waterfront communities. New York State developed a Coastal Management Program (CMP) and enacted implementing legislation (Waterfront Revitalization and Coastal Resources Act) in 1981. The CMP is based on a set of 44 coastal policies that guide coastal management actions at all levels of state government and ensure appropriate use and protection of coasts and waterways. Coastal policies are grouped into the following policy categories:

- Development
- Fish and Wildlife
- Flooding and Erosion Hazards
- General Safeguards
- Public Access
- Recreation
- Historic and Scenic Resources
- Agricultural Lands
- Energy and Ice Management
- Water and Air Resources
- Wetlands

The full text of the coastal policies can be found at:

<https://www.dos.ny.gov/opd/programs/pdfs/CoastalPolicies.pdf>. Decision-making standards and procedures known as “consistency provisions” ensure coordination of governmental decision-making that affects the achievement of the State's coastal policies. Consistency review is the decision-making process through which proposed actions and activities are determined to be consistent (or inconsistent) with the coastal policies of the CMP or approved Local Waterfront Revitalization Programs (LWRP). State agencies are also required to follow certain consistency review procedures for direct or funding actions, and for any action, including permits, for which they are an involved or lead agency pursuant to the SEQR and for which an EIS may be necessary.

Implementation

To fully implement the recommendations outlined in the SCORP, specific and programmatic actions will need to be developed, translating themes, goals and recommendations into the delivery of recreation services and protection of natural and cultural resources. Implementation vehicles include state and federal funding, such as the allocation of funds for recreation and open space projects.

The partnership philosophy is supported throughout SCORP, particularly relating to improving cooperation and coordination in providing recreational opportunities, and in enhancing natural and cultural resource stewardship and education between all levels of government and the private sector. These partnerships play an increasingly important role in providing quality recreation and assuring resource protection.

Environmental justice must be an overarching goal in providing recreational facilities and services, and its implementation must respond to the need to reach underserved communities.

Implementation strategies advance numerous coastal policies, including those related to development, fish and wildlife, public access, recreation, historic and scenic resources, and wetlands. The Open Project Selection Process (OPSP) is periodically revised to reflect the SCORP's themes, goals and recommendations. The OPSP assures that consideration is given to SCORP goals when evaluating and ranking applications for federal assistance in acquiring or developing recreation or open space resources.

In both State rating systems and the OPSP, projects that directly relate or contribute to SCORP or other state programs receive additional considerations (points), and those identified in adopted regional or local plans also receive additional points.

Protection of ecological, historical and open space resources is another important ranking factor. Positive impacts on these resources would likely result in a higher rating. Through continuous agency review and input from providers and the public, evaluation assures that a proper balance of goals and interests and fair distribution of monies is achieved.



Cumulative Impacts

The themes, goals and recommendations defined in SCORP 2020-25 will have a positive impact on the environment. The primary effect of SCORP is to promote the themes, goals and recommendations identified in Chapter 5. Including goals which describe processes to protect, conserve and maintain the environment—such as Goal #7: Restore, conserve, and protect the State's biodiversity—brings natural resource stewardship on par with development activities and recognizes that healthy ecosystems mean healthy communities.

SCORP recommendations regarding resource protection are consistent with, and promote, a number of coastal policies identified in the State's CMP. These policies include development, fish and wildlife, public access, recreation, historic and scenic, and wetlands.

Chapter 3 identifies major recreational needs in all counties of the State, and the activity maps provide an indication of where the highest levels of need exist. Rehabilitation of existing facilities and the acquisition and development of new facilities is required to satisfy the demand. Innovative, regional and statewide approaches need to be considered to make the facilities more accessible.

Accomplishing this will have cost and environmental implications. Some types of recreation facilities have greater impacts on the environment than others. Trails and informal picnic areas will have less of an

impact than swimming pools and RV camping. However, for some sites, such as brownfields, any recreation development will be an environmental improvement. Public health and safety considerations must be incorporated into planning for recreational opportunities.

The cumulative effects of applying the goals and recommendations of the SCORP 2020-25 in a systematic manner will be substantially beneficial. Existing recreational services to the public will be maintained, and likely enhanced and expanded, while protection of natural and cultural resources will be ensured. Perhaps one of the most important cumulative effects of SCORP is also the least tangible. The implementation of recreational and resource protection programs through the SCORP initiative substantially enhances the physical and psychological wellbeing—the quality of life—of the State’s residents and visitors.

Enhancing the quality and quantity of recreational services and programs has substantial beneficial effects on economic activity. Implementation of efficiently designed plans for recreational facilities often contributes to the attractiveness of a municipality for investment by businesses. Thus, the facilities and programs generated by the SCORP are an important adjunct to factors leading to economic recovery and development. growth usually occurs where there is already a sufficient base of transportation and support.

In NYS, these existing and established centers generally stabilize existing investments and services. Identification of the need for recreational services and facilities is based primarily on existing population and on growth projections. Additional planning and sustainability recommendations will facilitate proper balancing of the implementation of the SCORP and advance environmentally sensitive recreational development and use.

The goals stated in SCORP will not result in any significant increase in energy consumption associated with recreation activities. On the contrary, several of the recommendations and initiatives defined in SCORP will promote reduced energy consumption by recreation providers and users.

Since SCORP is a general plan, identification of program-specific or site-specific adverse impacts, including those which are unavoidable, will be accomplished during future planning and environmental review of specific programs and projects.

Applying the goals and recommendations of the SCORP to the development of recreation programs and projects requires a commitment of planning resources. Resources are committed through programs or projects identified within state or federal legislative action, or through gifts to the State. SCORP helps determine the priority for use of these committed resources. Implementation of the recommendations defined in SCORP will result in irreversible and irretrievable commitments of time, funds, and energy resources, but overall the benefits of preservation, stewardship and providing recreational opportunities outweigh these commitments.



CHAPTER 8 — COMMENTS & RESPONSES

Introduction

The SCORP public comment period yielded seven comments from state agencies, advocacy groups, and individuals. Most of the comments received during the public comment period were supportive or editorial in nature and no substantive changes were made to the document. The final document incorporates comments that were received during the public comment period from the internal agency review process and the SCORP working group.

Following are the most substantive comments received during the public comment period.

Comment 1

Motorized ATV access is in line with one of OPRHP's structured themes: to "keep the outdoor recreation system welcoming, safe, affordable and accessible." We urge cooperative efforts with the county, community clubs, and organizations that depend upon recreational activities to utilize the extensive infrastructure and capacity of State lands for motorized ATV access.

Response 1

Thank you for your comment. The role of the State in the development and management of ATV trails is generally limited to providing funding (i.e., Recreational Trails Program) for counties, municipalities, and private organizations to develop their own ATV trails. Some public multi-use trails do allow ATV use, including the Rivergate Trail in Jefferson County and the Rutland Trail in St. Lawrence and Franklin Counties. Also, the Winona Forest Recreation Association maintains a network of ATV trails in Jefferson and Oswego Counties, and Lewis and St. Lawrence Counties are developing county-wide ATV trail networks.

Both OPRHP and DEC limit ATV use on NYS lands. OPRHP allows limited ATV use for non-ambulatory individuals who have been issued a DEC permit (see OPRHP regulations on ATV use at <https://parks.ny.gov/publications/documents/NYSParksRulesRegulations.pdf>) and description below. The **NYS Trails Council** includes a delegate representing all-terrain vehicles.

The mission of DEC's Division of Lands and Forests (DLF) is "to care for and enhance the lands, forests and natural resources in NYS for the benefit of all through the care, custody, and control of state-owned lands, and promotion of the use and protection of all natural resources." This broad mission reflects that DEC has many other responsibilities beyond satisfying public recreation desires. Rather, recreation opportunities are provided on DEC lands that are compatible with multiple uses and the ecosystem management approach the DLF has adopted. Over the years, attempts have been made to accommodate off-highway and ATV use in several State Forests but, in each case, the use was not sustainable. Serious issues with soil erosion, illegal off-trail use and trail rutting developed. DEC will, however, support limited development of "connector trails" across its lands for the sole purpose of joining trail systems that are on either side of state property. Also, DEC administers certain conservation easements where the agency acquired public recreation rights for ATV use. On these lands, DEC may designate certain routes as open to ATV use, after a thorough public recreation management planning process.

In addition to these opportunities, DEC administers the Motorized Access Permit for People with Disabilities (**MAPPWD**) program. This allows an individual with a permit to ride an ATV or OHV on specifically marked and designated routes to access otherwise inaccessible areas of State land. As the statewide landscape continues to be subdivided into fragmented private land parcels, State Forests, with a relatively large land area in public ownership, are expected to face greater pressure to accommodate ATV use. However, in the midst of these trends, State Forests also are becoming more valuable for the various ecosystem services (water quality, habitat, forest retention) and non-motorized recreational opportunities they provide. To this end, DEC will continue to prohibit the riding of ATVs and OHVs on State land.

Comment 2

The plan acknowledges that climate change is leading to changes in snow availability, which impacts winter recreation activities. Additional text addressing resiliency strategies is warranted.

Response 2

Thank you for your comment. The State has policies and protocols in place to address many facility management issues, including those related to impacts from climate change. These issues are also addressed at a park or site level through planning and operational changes. As conditions change and new challenges arise, the State will continue to adapt and develop new strategies.

In the case of inadequate or unsafe conditions—as when trails have insufficient snow base for snowmobiling, for example—we do not allow snowmobile trails to open. If facilities must close, when possible, staff will refer day users to nearby parks with similar facilities.

Other types of recreation in the state are increasingly affected by climate change impacts. In recent years, swimming areas at our Great Lakes parks have experienced more frequent closures. Higher water levels and water quality issues such as algal blooms have kept a number of popular lakefront beaches off-limits during the high-use season. The State adheres to stringent water-testing protocols and is studying operational and facility impacts from Lake Ontario's high water levels. After high lake levels occurred again in 2019, OPRHP offered 50% off entrance and camping fees at state parks along Lake Ontario and the St. Lawrence River, to encourage visitors to come out to the parks and help boost local economies. OPRHP will remain vigilant on these issues and keep users up-to-date on rapidly-changing conditions at its facilities.

Comment 3

Motorized recreation (snowmobile/ATV) and transport to sites of non-motorized recreationists contributes to the burning of fossil fuels. While OPRHP is taking steps to reduce its use of fossil fuels, recreation types that are decreasing resiliency should also be acknowledged.

Response 3

Thank you for your comment. As the comment notes, OPRHP is committed to reducing its use of fossil fuels, and efforts to reduce the agency's fossil fuel use are discussed more fully in Chapter 4 of this document. While ATV use is widely prohibited in OPRHP facilities (see Response #1 above), popular recreational activities that use fossil fuels, such as snowmobiling and boating, are permitted at some parks. The agency has **regulations** in place to minimize the environmental impacts of these activities, and offers informational programs such as snowmobile **Rider Training** courses and Boater Education that help foster best practices in their use.

According to the **International Snowmobile Manufacturers Association** (ISMA), all new snowmobiles meet the strict U.S. EPA standards. Miles Per Gallon (MPG) numbers have improved, and will continue to do so, with new technology being introduced each year. The U.S. Department of Transportation is preparing to conduct a gasoline consumption survey, which will include snowmobiles. The ISMA estimates that the average snowmobiler uses between 80 to 100 gallons of gas each year.

Recreation providers face the same challenges as other entities when it comes to encouraging people to become less reliant on their cars. One strategy is to work toward making recreation facilities more accessible by non-vehicular means and public transport. Multi-modal infrastructure that supports greater access and use by non-vehicular transportation is being implemented across the state. This includes expanding and connecting multi-use trail systems, implementing new and expanded bicycle paths, and providing new waterway routes and access points for paddlers.

Another source of fossil fuel use, generators that are used in camping facilities, are limited and restricted through campground rules and regulations.

Comment 4

Overcrowding of some popular facilities is acknowledged in the plan but should be further addressed.

Response 4

Thank you for your comment. Strategies for high demand sites, such as popular trails or swimming areas, have included staffing these areas to educate visitors on low-impact usage, requiring day permits, and/or redirecting users to nearby parks with similar facilities. In recent years, a number of the State's beaches and pools have experienced closings during heat waves after reaching visitor capacity. When possible, the park and other facilities such as splash pads and play areas are kept open. Overcrowding and high-use impacts will continue to be addressed as needed at the park or site level through planning and operational changes.

List of Commenters:

Donald Dabiew, Chairman, Franklin County Board of Legislators
Lawrence Dolhof, Chairman, Lewis County Board of Legislators
Matthew Nowak, Environmental Program Specialist, New York State Department of Environmental Conservation

Comments from individuals and agencies in general support of the SCORP 2020-2025 were received from:

Michael Lynch, OPRHP Director of Historic Preservation Services
Jaime Reppert, Local Waterfront Revitalization Program, NYS Department of State
Michaela A. Sweeney, Open Space Institute



REFERENCES

All sources and references cited in this document are listed here. Note that hyperlinks are subject to change; if links become obsolete, titles and URLs are shown below.

A

- AARP Network of Age-Friendly States and Communities. "The 8 Domains of Livability: An Introduction"; unpublished no date provided; <https://www.aarp.org/livable-communities/network-age-friendly-communities/info-2016/8-domains-of-livability-introduction.html>.
- Allan, Brian F. "The Effect of Forest Fragmentation on Lyme Disease Risk." Cary Institute of Ecosystem Studies. 2000. https://www.caryinstitute.org/sites/default/files/public/reprints/Allan_2000_REU.pdf; accessed May 2019.
- America's Health Rankings – United Health Foundation. "A Call to Action for Individuals and Their Communities." 2018 Annual Report..https://assets.americashealthrankings.org/app/uploads/2018ahrannual_020419.pdf; accessed March 2019.
- American Public Health Association: Active Transportation: Benefiting health, safety and equity; Washington D.C.; file:///P:/Statewide/SCORP/2020%20SCORP/04%202020%20Draft%20SCORP-working%20document/Chapter%203/Source%20Docs/APHA_Active_Transportation_Fact_Sheet_2017.pdf; accessed March 2019.
- American Recreation Coalition; "The 2018 Outdoor Recreation Outlook"; references for camping, hunting and downhill skiing; <http://www.funoutdoors.com/files/Outdoor%20Recreation%20Outlook%202018.pdf>. accessed May 2019.
- Americans with Disabilities Act (ADA)**; general reference; <https://www.ada.gov/>; accessed June 2019.
- The 2018 Outdoor Recreation Outlook* by; <https://koa.com/north-american-camping-report/>.
- Anderson, G. B., and M. L. Bell, 2010: Heat waves in the United States: Mortality risk during heat waves and effect modification by heat wave characteristics in 43 U.S. communities. *Environ. Health Perspect.*, 119, 210–218, <https://ehp.niehs.nih.gov/doi/10.1289/ehp.1002313>. accessed April 2019.
- Arnold, Chad, Democrat and Chronicle; "Leaving New York: Population loss steepest in U.S.," Published Dec. 19, 2018. <https://www.democratandchronicle.com/story/news/politics/albany/2018/12/19/leaving-new-york-population-loss-steepest-u-s/2362167002/>; accessed March 2019.

B

- Basu, R., 2009: High ambient temperature and mortality: A review of epidemiologic studies from 2001 to 2008. *Environ. Health*, 8, 40, <https://ehjournal.biomedcentral.com/articles/10.1186/1476-069X-8-40>; accessed April 2019.
- Bronx River Parkway Reservation Commission, "America's First Parkway, Westchester's First Park"; <https://www.bronx-river.com/history>; accessed March 14, 2019.

C

- Cayuga Lake Watershed Intermunicipal Organization; *Cayuga Lake Watershed Intermunicipal Organization: For a Watershed Restoration and Protection Plan*; 29 Auburn Rd., PO Box 186, Lansing, NY 14882; revised 4/22/04; www.cayugawatershed.org; accessed November 2013.
- CDPHP Cycle!; Nov 29, 2019, "CDPHP Cycle! Finishes Inaugural Season Strong"; <https://www.cdphp.com/newsroom/2017/11/29-cdphp-cycle-finished-strong>; accessed March 2019;
- CDPHP Cycle!; Dec 5, 2019, "CDPHP Cycle! Exceeds Season Two Expectations"; <https://www.cdphp.com/newsroom/2018/12/05-cycle>; accessed March 2019
- Cornell Program on Applied Demographics, NY Counties: Projections; September 8, 2011; <http://pad.human.cornell.edu/counties/projections.cfm>; accessed Sept. 2018;
- Cornell Program on Applied Demographics (PAD), NY Counties aggregated: Projections; NYS Population 2015-2040, NYS & National Population Projections 2015-2040, NYS Population Age 65+ 2015-2040, Gender 2020 & 2040, 2018 PAD Projections. <http://pad.human.cornell.edu/counties/projections.cfm>; accessed March. 2019.

References

Correll, Lillydahl, and Singell; *The Effects of Greenbelts on Residential Property Values: Some Findings on the Political Economy of Open Space*; May 1978.

Curriero, F. C., K. S. Heiner, J. M. Samet, S. L. Zeger, L. Strug, and J. A. Patz, 2002: Temperature and mortality in 11 cities of the eastern United States. *Amer. J. Epidemiol.*, 155, 80–87.

<https://academic.oup.com/aje/article/155/1/80/134292>.accessed April 2019.

D

Data Resource Center for Child and Adolescent Health. “2017 National Survey of Children's Health: Child and Family Health Measures – New York.” <https://www.childhealthdata.org/browse/survey/results?q=6473&r=34>; accessed March 21, 2019.

Dhaliwal, Satvinder S. et al. “Recreational Physical Activity as an Independent Predictor of Multivariable Cardiovascular Disease Risk.” *PLoS One*. Published Dec. 26, 2013. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3873278/>; accessed March 2019.

DiNapoli, Thomas J. NYS Office of the State Comptroller. “Economic Benefits of Open Space Preservation”. https://www.dec.ny.gov/docs/lands_forests_pdf/openspacepres.pdf; accessed March 2010;

E

Ecologic, LLC and **OBG**. NYS Invasive Species Comprehensive Management Plan. November 2018. Prepared for the NYS Invasive Species Council. https://www.dec.ny.gov/docs/lands_forests_pdf/iscmpfinal.pdf; accessed January 2019.

Economic Impact of the Horse Industry in New York, American Horse Council Foundation, 2018; pages 1-2, 7-8; https://gallery.mailchimp.com/ba2287c0ccea8583f37283499/files/6eb792ad-bbe7-4522-9fb1-877cec64df37/AHC_Economic_Study_New_York_v3.pdf; accessed June 2019.

Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (editors); *Ecological Communities of NYS, Second Edition: A revised and expanded edition of Carol Reschke's Ecological Communities of NYS*; New York Natural Heritage Program, NYS DEC, 625 Broadway, Albany, NY; Draft for review 2002.

Ehrlich, Brent. “Green Walls for Greener Cities.” *BuildingGreen.com*. Published January 25, 2012. <https://www.buildinggreen.com/news-article/green-walls-greener-cities>; accessed April 2019.

Environment Canada, U.S. Environmental Protection Agency, et. al.; *Lakewide Management Plan for Lake Ontario: Stage 1 – Problem Definition*; May 1998.

ESRI Community Analyst, Business Summary 2012, http://help.arcgis.com/en/communityanalyst/online/data/data_descriptions.html; accessed August 2013.

Executive Order 190; “Incorporating Health Across Policies for All State Agency Activities”. <https://www.governor.ny.gov/news/no-190-incorporating-health-across-all-policies-state-agency-activities>; accessed March 2019.

F

Fedor, Liz. “The decline of snowmobiling in Minnesota”, <https://www.minnpost.com/twin-cities-business/2018/03/decline-snowmobiling-minnesota/>; accessed March 2019.

Fogg, George E., FASLA; *Park, Recreation & Leisure Facilities Site Planning Guidelines*; National Recreation & Park Association; 2005.

Frisch, T. “Wild at Heart”; *Adirondack Life*; 38(6): 50. 2007.

G

Great Lakes Commission; *About the Great Lakes Commission*; Eisenhower Corporate Park, 2805 S. Industrial Hwy, Suite 100, Ann Arbor, MI; www.glc.org/about/; revised September 2012.

Great Lakes Protection Fund; *Ideas in Action*; 1560 Sherman Avenue, Suite 880, Evanston, Illinois; <http://www.glpf.org/>; accessed October 2013.

Great Lakes Regional Waterways Management Forum; *The Great Lakes: A Waterways Management Challenge*; Harbor House Publishers, Inc., 221 Water St, Boyne City, Michigan; undated.

H

Harnik, Peter and Bel Welle; “From Fitness Zones to Medical mile: How Urban Park Systems Can Promote Health and Wellness” The Trust for Public Land; Washington, D.C; 2011

Historic American Engineering Record (HAER). “Bronx River Parkway Reservation”; <http://westchesterarchives.com/BRPR/BRPRHome.html>; accessed March 14, 2019.

Howard, T.G.; “Buffering natural communities for persistence”; *DRAFT Methods Document*; New York Natural Heritage Program, Albany, NY; 2004.

Hudson-Fulton-Champlain Quadracentennial Commission; “The Journey Continues...Welcome”; Empire State Plaza, Agency Building 1, Albany, NY 12238; www.explore400.com; accessed October 2013.

Hudson River Access Forum; *Between the Railroad and the River: Public Access Issues and Opportunities along the Tidal Hudson*; Albany, NY; September 1989.

Hudson River Sustainable Shorelines; <https://www.hrnerr.org/wp-content/uploads/sites/9/2018/09/Coxsackie-Boat-Launch-Case-Study.pdf>; accessed November 2018.

Hudson River Valley Greenway Conservancy; *Grants and Funding*; Capital Building, Room 254, Albany, NY <https://hudsongreenway.ny.gov/grants-funding>; accessed July 2019.

Hudsonia; *Biodiversity Education*; http://hudsonia.org/?option=com_content&task=blogcategory&id=20&Itemid=59#map; accessed July 2019.

I

Intergovernmental Panel on Climate Change (IPCC); *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*; Chapter 5; [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)]; Published 2007 Cambridge University Press 32 Avenue of the Americas, New York, NY 10013-2473. <http://www.ipcc.ch/ipccreports/ar4-wg3.htm>; accessed July 2007.

International Joint Commission – United States and Canada; *Great Lakes Water Quality Agreement of 1978*; Agreement, with Annexes and Terms of Reference between the United States and Canada signed at Ottawa November 22, 1978 and Phosphorus Load Reduction Supplement signed October 16, 1983 as amended by Protocol signed November 18, 1987; reprinted February 1994.

K

Khan, McKay K. et al. “Does childhood and adolescence provide a unique opportunity for exercise to strengthen the skeleton?” *Journal of Science Medicine Sport/Sports Medicine*. August 2000; 3: 150–164. <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1467-789X.2010.00775.x>; accessed March 25, 2019.

Klinenberg, Eric. *Heat Wave: A Social Autopsy of Disaster in Chicago*. 2002. <https://www.press.uchicago.edu/ucp/books/book/chicago/H/bo20809880.html>; accessed July 2019.

L

Lake Champlain Basin Program; *Opportunities for Action: An Evolving Plan for the Future of the Lake Champlain Basin*; PO Box 204, 54 West Shore Road, Grand Isle, VT 05458; <http://plan.lcbp.org/>; accessed July 2019.

Lehman, Joel. “Buffalo outpaces national average in growth of young adult population.” UpstartNY Powered by LaunchNY. Published February 19, 2018. <https://www.upstartny.org/inthenews/Buffalo-outpaces-national-average-in-growth-of-young-adult-population.aspx>; accessed June 2019.

M

Madrigano, J., D. Jack, G. Anderson, M. Bell, and P. Kinney, 2015: Temperature, ozone, and mortality in urban and non-urban counties in the northeastern United States. *Environ. Health*, 14, 3. <https://ehjournal.biomedcentral.com/articles/10.1186/1476-069X-14-3>; accessed April 2019.

References

- Matthews, Charles E. et al. "Amount of Time Spent in Sedentary Behaviors in the United States, 2003–2004." *American Journal of Epidemiology*. 2008 Apr 1; 167(7): 875–881. Published online 2008 Feb 25. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3527832/>; accessed March 2019.
- McGeehin, M. A., and M. Mirabelli, 2001: The potential impacts of climate variability and change on temperature-related morbidity and mortality in the United States. *Environ. Health Perspect.*, 109, 185–189, <https://doi.org/10.2307/3435008>; accessed April 2019.
- McKinley, Dave, "Niagara Bridge Coming Down"; <https://www.wgrz.com/article/news/local/niagara-parkway-bridge-coming-down/71-fbd5ed51-904f-4944-8bb4-334b64ef384c>; accessed April 2019.
- McPherson, Gregory, James Simpson, Paula Peper, Shelley Gardner, Kelaine Vargas, Scott Maco, and Qingfu Xiao. "Coastal Plain Community Tree Guide: Benefits, Costs, and Strategic Planting". U.S.DA, U.S. Forest Service, Pacific Southwest Research Station. (2006). <https://www.nrs.fs.fed.us/pubs/46102>; accessed March 2019.
- Meehl, G. A., and C. Tebaldi, 2004: More intense, more frequent, and longer lasting heat waves in the 21st century. *Science*, 305, 994–997, <http://science.sciencemag.org/content/305/5686/994>; accessed April 2019.
- Moore, Latetia V et al. "Availability of recreational resources in minority and low socioeconomic status areas". *American Journal of Preventive Medicine* vol. 34,1 (2008): 16-22. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2254179/>; accessed 3/20/19.
- Mora, C. et al. "The projected timing of climate departure from recent variability". *Nature*. 502 (7470): 183–87. Oct 10, 2013. Bibcode:2013Natur.502.183M. doi:10.1038/nature12540. PMID 24108050. <https://www.nature.com/articles/nature12540>; accessed April 2019.
- ## N
- National Fish and Wildlife Foundation; *National Fish and Wildlife Foundation: Home Page*; 1120 Connecticut Ave NW, Suite 900, Washington, DC 20036; <https://www.nfwf.org/Pages/default.aspx>; accessed July 2019.
- National Household Travel Survey, 2001-2009; accessed September 2013; <http://nhts.ornl.gov/>
- National Oceanic and Atmospheric Administration (NOAA); National Estuarine Research Reserve System; Office of Ocean and Coastal Resource Management, , 1305 East West Highway, Silver Spring, MD; <https://oceanservice.noaa.gov/ecosystems/nerrs/>; accessed July 2019.
- National Recreation and Park Association; *Federal Grant for Park and Recreation Agency*, 22377 Belmont Ridge Rd, Ashburn, VA; February 2007.
- National Recreation and Park Association; *Parks and Healthy Kids*
- National Transportation Enhancements Clearinghouse; *TE Basics*; 1100 17th Street NW, 10th floor, Washington, D.C.; <http://www.enhancements.org/>; accessed July 2019.
- Natural Resources Conservation Service; *1997 Natural Resources Inventory (revised)*; Washington, D.C.; 2001.
- National Weather Service: Office of Climate, Water, and Weather Services. *Hazard Weather Statistics*. <https://www.nws.noaa.gov/om/hazstats.shtml>; accessed April 2019.
- National Recreation and Park Association: "The Rationale for Recreation Services for Youth: An Evidenced Based Approach", Caldwell, Linda, L., Witt, Peter, A. Research Series: 2010 Series. Office of Climate, Water, and Weather Services. *Hazard Weather Statistics*. <https://www.nrpa.org/globalassets/research/witt-caldwell-full-research-paper.pdf>; accessed February 2019.
- National Wildlife Foundation. "Connecting Kids and Nature". <https://www.nwf.org/en/Kids-and-Family/Connecting-Kids-and-Nature>; accessed April 2019.
- National Wildlife Foundation. Kids and Nature. Role of Technology in Connecting Kids to Nature. https://www.nwf.org/~media/PDFs/Kids-and-Nature/NWF_Role-of-Technology-in-Connecting-Kids-to-Nature_6-30_Ish.ashx; accessed April 2019.
- Nature Conservancy; *What We Do: Invasive Species, Preventing and Containing Invasions Worldwide*; <https://www.nature.org/en-us/what-we-do/our-priorities/protect-water-and-land/land-and-water-stories/invasive-plant-species-invasive-species-education-1/>; accessed July 2019.

- Nelson A. Rockefeller Institute of Government, State University of New York, in cooperation with the NYS Division of Budget; *2011 NYS Statistical Yearbook: 36th Edition, Revised and Expanded*; 411 State Street, Albany, NY; June 2012.
- NYS County List; general reference: <https://www.ny.gov/counties>; accessed June 2019.
- NYS Department of Transportation. Safe Routes to School; <https://www.dot.ny.gov/safe-routes-to-school>; accessed November 2018.
- NYS Governor's Office. Empire State Trail. <https://www.ny.gov/programs/empire-state-trail>; accessed March 15, 2019.
- NYS Horse Council, number of horses in NYS and used recreationally; accessed March 2019. Equine in NYS total and recreational; <https://www.nyshc.org/post.php?pid=2>; accessed March 2019.
- NYS Office for the Aging; County Data Book: *Table One: Demographics*; <https://www.aging.ny.gov/ReportsAndData/2015CountyDataBooks/01NYS.pdf>; accessed November 2018.
- NYS Office of Parks, Recreation and Historic Preservation: Division of Historic Preservation. *NYS Historic Preservation Plan 2015-20*. Published... <https://parks.ny.gov/shpo/preservation-plan/documents/NewYorkStateHistoricPreservationPlan20152020.pdf>; accessed July 2019.
- NYS Office of Parks, Recreation and Historic Preservation's Boating Education – general reference; <https://parks.ny.gov/recreation/boating/education.aspx>; accessed May 2019.
- NYS Office of Parks, Recreation and Historic Preservation's Golden Program; <https://parks.ny.gov/admission/golden-park-program.aspx>; accessed March 2019.
- NYS Office of Parks, Recreation and Historic Preservation's Boating Education – general reference; <https://parks.ny.gov/recreation/boating/education.aspx>; accessed May 2019.
- NYS Office of Parks, Recreation and Historic Preservation's Snowmobile Unit – general reference; <https://parks.ny.gov/recreation/snowmobiles/>; accessed May 2019.
- NYS Office of Parks, Recreation and Historic Preservation; reference Governor's Parks 2020 Plan. <https://parks.ny.gov/publications/documents/NYParks2020.pdf>.
- NYS Department of State, Division of Building Standards & Codes, general reference, Chapter 3, universal Access, p 10. <https://www.dos.ny.gov/dcea/>.
- NYS Public Health and Health Planning Council (Ad-Hoc Committee to Lead the Prevention Agenda) and the NYS Department of Health. *Prevention Agenda 2019-2024*. Updated March 5, 2019. Version 1.2. https://www.health.ny.gov/prevention/prevention_agenda/2019-2024/docs/ship/nys_pa.pdf; accessed February 2019.
- Nowak, David J.; Gordon M. Heisler. "Air Quality Effects of Urban Trees and Parks: Executive Summary." National Recreation and Park Association. 2010. <https://www.nrpa.org/globalassets/research/nowak-heisler-summary.pdf>; accessed April 2019.
- NY Natural Heritage Program; *Biodiversity in New York's State Park system: summary of findings: Report for the NYS Office of Parks, Recreation and Historic Preservation*; Albany, NY; 2005. <https://parks.ny.gov/publications/documents/biodiversity/BiodiversityBodySection2.pdf>; accessed July 2019
- NYS DEC; <https://www.dec.ny.gov/lands/309.html>; accessed November 2018; <https://www.dec.ny.gov/lands/4982.html>; accessed December 2018.
- NYS DEC, Accessible Recreation; <https://www.dec.ny.gov/about/580.html>; accessed June 2019.
- NYS DEC Bureau of Wildlife; "Wildlife Species and Ecological Community Accounts,"1994. <https://www.dec.ny.gov/animals/29384.html>; accessed June 2019.
- NYS DEC; "Contamination Clean-up Plans for the Great Lakes Completed: Implementation of Remedial Action Plans will restore and protect water uses"; 50 Wolf Road, Albany, NY; Press Release March 9, 1998.
- NYS DEC; *Final Hudson River Estuary Boating Access Needs and Opportunities Plan and Generic Environmental Impact Statement*; Hudson River Estuary Program, 21 South Putt Corners Rd., New Paltz, NY; November 1998.
- NYS DEC; *Hudson River Estuary Action Agenda 2005-2009*; Hudson River Estuary Program, 21 South Putt Corners Rd, New Paltz, NY; 2005

References

- NYS DEC; *Hudson River Estuary Action Agenda 2015-2020*; Hudson River Estuary Program, 21 South Putt Corners Rd, New Paltz, NY; <https://www.dec.ny.gov/lands/5104.html>; accessed July 2019.
- NYS DEC; *Great Lakes Protection Fund*; 625 Broadway, Albany, NY; <http://www.dec.ny.gov/lands/25582.html>; accessed July 2019.
- NYS DEC; *Invasive Species Grant Program*; 625 Broadway, Albany, NY; <https://www.dec.ny.gov/animals/115742.html>; accessed July 2019.
- NYS DEC; *Wildlife Management Areas*; 625 Broadway, Albany, NY; <http://www.dec.ny.gov/outdoor/7768.html>; accessed July 2019.
- NYS DEC; *Great Lakes Basin Advisory Council*; 270 Michigan Avenue, Buffalo, NY 14203; <http://www.dec.ny.gov/lands/25585.html>; accessed July 2019.
- NYS DEC; *NYS Boat Launching Sites by County*; 625 Broadway, Albany, NY; <http://www.dec.ny.gov/outdoor/7832.html>; accessed July 2019.
- NYS DEC; *About the Bureau of Marine Resources*; Bureau of Marine Resources, 205 North Belle Mead Road, Suite 1, East Setauket, NY; <https://www.dec.ny.gov/about/796.html>; accessed July 2019.
- NYS DEC; *NYS Bird Conservation Area Program*; 625 Broadway, Albany, NY; <http://www.dec.ny.gov/animals/30935.html>; accessed July 2019.
- NYS DEC; *Junior Naturalist Program*; 625 Broadway, Albany, NY; <http://www.dec.ny.gov/education/21673.html>; accessed July 2019.
- NYS DEC; *New York Natural Heritage Program*; 625 Broadway, Albany, NY; <http://www.dec.ny.gov/animals/29338.html>; accessed July 2019.
- NYS DEC; *Hudson River National Estuarine Research Reserve*; Norrie Point Environmental Center, P O Box 315, 256 Norrie Point Way, Staatsburg, NY; <http://www.dec.ny.gov/lands/4915.html>; accessed July 2019.
- NYS DEC and OPRHP; *1990 Statewide survey of Boating use at Public Waterway Access Sites in NYS*; Albany, NY; 1992.
- NYS DEC, OPRHP and Department of State (DOS); *NYS Open Space Conservation Plan 2016: NYS Open Space Conservation Plan and Generic Environmental Impact Statement*; 625 Broadway, Albany, NY; <http://www.dec.ny.gov/lands/47990.html>; accessed July 2019.
- NYS DOH, Bureau of Chronic Disease Evaluation and Research; *Behavioral Risk Factor Surveillance System Brief, Number 1716. "Disability Status, NYS Adults 2015"*; https://www.health.ny.gov/statistics/brfss/reports/docs/1716_brfss_disability_status.pdf; accessed March 2019.
- NYS DOH, Fish Advisory Maps by County: NYS's Health Improvement Plan, https://www.health.ny.gov/prevention/prevention_agenda/2019-2024/; accessed March 2019.
- NYS DOH, Bureau of Chronic Disease Evaluation and Research; *Behavioral Risk Factor Surveillance System Brief, Number 1716. "Disability Status, New York"*; https://www.health.ny.gov/environmental/outdoors/fish/health_advisories/maps.htm.
- NYS DOH; *Cardiovascular Health in NYS*; Corning Tower, Empire State Plaza, Albany, NY; http://www.health.ny.gov/diseases/cardiovascular/heart_disease/; accessed October 2013.
- NYS DOH; *Physical Inactivity and Cardiovascular Disease*; Corning Tower, Empire State Plaza, Albany, NY; <http://www.health.state.ny.us/diseases/chronic/cvd.htm>; accessed June 2013.
- NYS Department of State (DOS); *Long Island Sound Coastal Management Program*; Division of Communities and Waterfronts, 99 Washington Avenue, Albany, NY; <http://www.dos.ny.gov/communitieswaterfronts/pdfs/NY%20CMP%20.pdf>; accessed July 2013.
- NYS DOS; *Long Island South Shore Estuary Reserve: Comprehensive Management Plan*; Division of Communities and Waterfronts, 99 Washington Avenue, Albany, NY; https://www.dos.ny.gov/opd/SSER/comprehensive_management_plan.html; accessed July 2019.
- NYS DOS; *Brownfield Opportunity Areas*; Division of Coastal Resources, 99 Washington Avenue, Albany, NY; <http://www.dos.ny.gov/communitieswaterfronts/brownFieldOpp/index.html>; accessed July 2019.

- NYS DOS; *Local Waterfront Revitalization Program*; Division of Communities and Waterfronts, 99 Washington Avenue, Albany, NY; <https://www.dos.ny.gov/opd/programs/lwrp.html>; accessed July 2019.
- NYS DOS; *Transitioning the Ocean and Great Lakes to a Sustainable Future: Implementation of Ecosystem-based Management in NYS, Staff Report to the Ocean and Great Lakes Ecosystem Conservation Council*; 41 State Street, Albany, NY; September 19, 2007.
- NYS DOT; *Safe Routes to School Program*; Local Programs Bureau, 50 Wolf Rd., Albany, NY 12232; <https://www.dot.ny.gov/safe-routes-to-school>; accessed June 2019.
- NYS OPRHP; *Harbor of Refuge Planning and Development, Lake Erie and Lake Ontario*; Agency Building 1, Empire State Plaza, Albany, NY; March 1980.
- NYS OPRHP; *Statewide Comprehensive Outdoor Recreation Plan: People, Resources, Recreation*; Agency Building 1, Empire State Plaza, Albany, NY; April 1983.
- NYS OPRHP; *Statewide Comprehensive Outdoor Recreation Plan: People, Resources, Recreation*; Agency Building 1, Empire State Plaza, Albany, NY; June 1994.
- NYS OPRHP; *Statewide Comprehensive Outdoor Recreation Plan: People, Resources, Recreation*; Agency Building 1, Empire State Plaza, Albany, NY; November 2002.
- NYS OPRHP; *Statewide Comprehensive Outdoor Recreation Plan: People, Resources, Recreation*; Agency Building 1, Empire State Plaza, Albany, NY; December 2008.
- NYS OPRHP; *2004 General Public Recreation Survey*; Agency Building 1, Empire State Plaza, Albany, NY; 2004.
- NYS OPRHP; *The Year 2005 Park Professional Survey*; Agency Building 1, Empire State Plaza, Albany, NY; 2005.
- NYS OPRHP; *The Statewide Recreation Facility Inventory*; Agency Building 1, Empire State Plaza, Albany, NY; 2012.
- NYS Olympic Regional Development Authority (NYSORDA); 2012-2013 Annual Report; 2013 Lake Placid; <http://www.orda.org/corporate/pdf/annual/annreport12-13.pdf>; accessed July 2019.
- NYS Office of the State Comptroller (NYS OSC); “Economic Benefits of Open Space Preservation, March 2010”; https://www.dec.ny.gov/docs/lands_forests_pdf/openspacepres.pdf; accessed June 2019.
- NYS Snowmobile Association (NYSSA); <http://nysnowmobiler.com/>; accessed July 2019.
- Niedowski, Nancy L.; *NYS Salt Marsh Restoration and Monitoring Guidelines*; Prepared for the NYS DOS, Division of Coastal Resources 41 State Street, Albany, NY and NYS DEC Division of Fish, Wildlife and Marine Resources, 205 N. Belle Meade Rd., East Setauket, NY; December 2000. https://www.dec.ny.gov/docs/wildlife_pdf/saltmarsh.pdf; accessed July 2019.
- Northeast Climate Impacts Assessment Synthesis Team; *Confronting Climate Change in the U.S. Northeast: Science, Impacts and Solutions*; U.S.C Publications, 2 Brattle Square, Cambridge, MA 02238; July 2007; https://www.ucsusa.org/sites/default/files/legacy/assets/documents/global_warming/pdf/confronting-climate-change-in-the-u-s-northeast.pdf; accessed July 2019.
- Northeast Sustainable Energy Association (NESEA). “Zero-Energy Building Award”, 50 Miles Street, Greenfield, MA 01301; https://nesea.org/sites/default/files/BE_MagFall13_OnLineFinal.pdf; accessed June 2019.
- Noss, R.F.; “A regional approach to maintain diversity”; *BioScience*; 33:700-706; 1983.
- Noss, R.F.; “Landscape connectivity: different functions at different scales”; In W.E Hudson(ed.) *Landscape Linkages and Biodiversity*, pp. 27-39. Island Press: Washington, D.C. 1991b.
- Nye, Peter; Personal Communication; Endangered Species Unit, Division of Fish, Wildlife and Marine Resources, NYS DEC, 625 Broadway, Albany, NY; January 11, 2008.
- O**
- Outdoor Industry Association; *New York Outdoor Recreation Economy Report*, July 26, 2017; accessed October 2018; <https://outdoorindustry.org/resource/new-york-outdoor-recreation-economy-report/>

References

P

- Palisades Interstate Park Commission, <http://www.njpalisades.org/pipc.html>; accessed November 2018.
- Palisades Parks Conservancy, Palisades Interstate Parkway, NY; Park Information; https://www.palisadesparks.org/_detail.php?park_id=14; accessed July 2019.
- Parks & Trails New York, *Economic Benefits of the NYS Park System*. Prepared for Parks & Trails New York by Political Economy Research Institute; August, 2017; <https://www.ptny.org/newsandmedia/e-news-1/2017/11/new-study-finds-state-park-system-robust-economic-engine>, accessed 12/14/2018.
- Parks and Trails NY (PTNY); 2009. "The NYS Park System: An Economic Asset to the Empire State." <http://www.oneregionforward.org/plan/the-nys-park-system-an-economic-asset-to-the-empire-state/>; accessed June 2019.
- Plant Conservation Alliance (PCA); Bureau of Land Management, 1849 C Street NW, LSB-204, Washington, DC 20240; <https://www.blm.gov/programs/natural-resources/native-plant-communities/national-seed-strategy/pca>; accessed July 2019.
- PCA Alien Plant Working Group (APWG); *An Action Agenda for Invasive Plants*; <https://www.invasive.org/alien/factmain.htm>; accessed July 2019.
- PCA APWG; *Weeds Gone Wild: Alien Plant Invaders of Natural Areas*; <http://www.nps.gov/plants/alien/index.htm>; updated: September 18, 2007.
- Preservation League of New York; *Preserve New York Grant Program*; 44 Central Avenue, Albany, New York; <https://www.preservenys.org/preserve-new-york.html>; accessed June 2019.
- PLAN NYC, "A Stronger, More Resilient New York"; pg. 43. NYC Special Initiative for Rebuilding and Resiliency, <https://www1.nyc.gov/site/sirr/report/report.page>; accessed July 2019.

R

- Reschke, C.; *Ecological Communities of NYS*; New York Natural Heritage Program, NYS DEC, Latham, NY; 1990; http://www.dec.ny.gov/docs/wildlife_pdf/ECNYtaci.pdf; accessed December 13, 2007.
- Riebeek, Holli (2007); "Global Warming"; Published May 11, 2007; Earth Observatory <https://earthobservatory.nasa.gov/features/GlobalWarming/page1.php>; accessed July 2019.
- Rivers and Trails Conservation Assistance Program, National Park Service; *Economic Impacts of Protecting Rivers, Trails and Greenway Corridors Resource Book*; National Park Service; 1989.
- Robinson, G.R.; Quinn, J.F.; and C. van Riper III; "Assembly of a standardized database for vascular plants in California's National Park Service lands"; Pages 47-157 in van Riper III, C.; Stohlgren, T.J.; Veirs, S.D. Jr.; and S.C. Hillyer, eds; *Examples of Resource Inventory and Monitoring in National Parks of California: Proceeding of the Third Biennial Conference on Research in California's National Parks*; (Held September 13-15 at University of California, Davis, CA) Washington, D.C.: United States Department of the Interior; 1990.
- Robinson, G.R.; Holt, R.D.; Gaines, M.S.; Hamburg, S.P.; Johnson, M.L.; Fitch, H.S.; and E.A. Martinko; "Diverse and contrasting effects of habitat fragmentation"; *Science*; 257: 524-526; 1992

S

- Sala, O.E.; Chapin III, F.S.; Armesto, J.J.; Berlow, R.; Bloomfield, J.; Dirzo, R.; Huber-Sanwald, E.; Huenneke, L.F.; Jackson, R.B.; Kinzig, A.; Leemans, R.; Lodge, D.; Mooney, H.A.; Oesterheld, M.; Poff, N.L.; Sykes, M.T.; Walker, B.H.; Walker, M. and D.H. Wall; "Global biodiversity scenarios for the year 2100"; *Science*; 287: 1770-1774; 2000.
- Sayer, J.; *Rainforest Buffer Zones: Guidelines for Protected Area Managers*. Gland, Switzerland; IUCN-The World Conservation Union, Forest Conservation Programme. 1991.
- Scarmeas, N.; G. Levy; M.-X. Tang; J. Manly, PhD, and Y. Stern. "Influence of leisure activity on the incidence of Alzheimer's Disease." *Neurology*. 2001 Dec 26; 57(12): 2236-2242. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3025284/>; accessed March 2019.
- Scott, David. "Economic Inequality, Poverty and Park and Recreation Delivery". *Journal of Park and Recreation Administration*, Winter 2013 (V. 31, Number 4., pp. 1-11).

<http://people.tamu.edu/~dscott/340/U3%20Readings/3%20-%202013%20JPRA%20-%20Economic%20Inequality.pdf>; accessed March 2019.

Sea Grant National; “Sea Grant Overview Science Serving America’s Coasts”; NOAA/Sea Grant, R/SG, 1315 East-West Highway, SSMC-3, Eleventh Floor, Silver Spring, MD 20910. <https://seagrants.noaa.gov/Our-Work>; accessed July 2019.

Ski Areas of New York—Economic Value Analysis 2016-2017 Season, RRC Associates, Inc.; pages 1-4, 15, 22, 27. https://www.iskiny.com/sites/default/files/public/Ski_areas_of_New_York_Econ_Study_1617.pdf; accessed April 2019.

Soule, M.E.; “Theory and Strategy”; in *W.E Hudson (ed.) Landscape Linkages and Biodiversity*; Island Press, Washington, D.C.; pages 27-39; 1991b.

Stravynski, Ariel; Richard Boyer, (2001). “Loneliness in Relation to Suicide Ideation and Parasuicide: A Population-Wide Study. *Suicide and Life-Threatening Behavior*”: Vol. 31, No. 1, pp. 32-40. <https://guilfordjournals.com/doi/abs/10.1521/suli.31.1.32.21312>; accessed March 2019.

Suprenant, Leslie; “Forming Partnerships for Regional Invasive Species Management (PRISMs)”; NYSDEC, 625 Broadway, Albany, NY 12233-4756, June 2007.

T

Trager, Cara., “Seniors, Boomers, Picking Up Pickleball”; Original *Copyright 2017 Newsday, Inc.* Published in AthleticBusiness.com via Lexis Nexis. <https://www.athleticbusiness.com/recreation/seniors-boomers-picking-up-pickleball.html>; accessed March 2019.

Triguero-Mas M. “The effect of randomised exposure to different types of natural outdoor environments compared to exposure to an urban environment on people with indications of psychological distress in Catalonia.” *PLoS One*. 2017 Mar 1;12(3):e0172200. doi: 10.1371/journal.pone.0172200. eCollection 2017. <https://www.ncbi.nlm.nih.gov/pubmed/28248974>; accessed April 2019.

Troy, Austin; J. Morgan Grove; and Jarlath O’Neil-Dunne. “The relationship between tree canopy and crime rates across an urban–rural gradient in the greater Baltimore region”. *Landscape and Urban Planning*. Volume 106, Issue 3, 15 June 2012, Pages 262-270. <https://doi.org/10.1016/j.landurbplan.2012.03.010>; (cf. <https://www.citylab.com/equity/2012/05/can-trees-actually-deter-crime/2107/>); accessed April 2019.

Twohig-Bennett, C. and A. Jones. “The health benefits of the great outdoors: A systematic review and meta-analysis of greenspace exposure and health outcomes.” *Environ Res*. 2018 Oct;166:628-637. doi: 10.1016/j.envres.2018.06.030. Epub. 2018 Jul 5. <https://www.ncbi.nlm.nih.gov/pubmed/29982151>; accessed April 2019.

U

Union of Concerned Scientists (UCS); *Global Warming – Early Warning Signs of Global Sea Level Rise and Coastal Flooding*; 2 Brattle Square, Cambridge MA 02238; https://www.ucsusa.org/global_warming/science_and_impacts/impacts/early-warning-signs-of-global-4.html; accessed July 2019.

United Nations Department of Economic and Social Affairs report, *Around 2.5 billion more people will be living in cities by 2050*, 16 May 2018, New York, <https://www.un.org/development/desa/en/news/population/2018-world-urbanization-prospects.html>; accessed October 2018.

United Nations Department of Economic and Social Affairs, *68% of the world population projected to live in urban areas by 2050*, says UN May 16, 2018; <https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html>; accessed November 2018.

U.S. Bureau of the Census “2012-2016 American Community Survey Five-Year Estimates.” Table GCT0801. <https://www.energy.gov/eere/vehicles/articles/fotw-1032-june-4-2018-workers-new-york-state-had-longest-commute-times-2016>; accessed March 21, 2019.

U.S. Bureau of the Census. “New York: 2010 – Population and Housing Unit Counts – 2010 Census of Population and Housing”. <https://www.census.gov/prod/cen2010/cph-2-34.pdf>; accessed March 19, 2019.

References

- U.S. Bureau of the Census. "Older People Projected to Out Number Children for First Time in U.S. History". MARCH 13, 2018, RELEASE NUMBER CB18-41. <https://www.census.gov/newsroom/press-releases/2018/cb18-41-population-projections.html>; accessed March 2019.
- U.S. Bureau of the Census. "Nevada and Idaho Are the Nation's Fastest-Growing States", Pub. December 19, 2018, Press Release CB18-193, <https://www.census.gov/newsroom/press-releases/2018/estimates-national-state.html>; accessed March 2019.
- U.S. Bureau of the Census. QuickFacts – New York 7/2018 Population Estimate. <https://www.census.gov/quickfacts/fact/table/NY/PST045218>; accessed March 2019.
- U.S. Coast Guard; *Recreational Boating Safety State Grant Program*; Coast Guard Headquarters, 2100 Second Street, SW, Washington, DC; <http://www.uscgboating.org/grants/state/rbs.htm>; accessed June 2019.
- U.S. Department of Agriculture (USDA); *Farm and Ranch Lands Protection Program*; Natural Resources Conservation Service (NRCS); 14th and Independence Avenue, SW, Washington, DC; <http://www.nrcs.usda.gov/programs/frpp/>; accessed June 2007.
- U.S. Department of Commerce; *The Coastal and Estuarine Land Conservation Program*; National Oceanic and Atmospheric Administration, 1305 East West Highway, Silver Spring, MD; <http://coastalmanagement.noaa.gov/land/welcome.html>; accessed July 2007.
- U.S. Department of Education; *Recreation Programs*; Rehabilitation Services Administration 400 Maryland Avenue, SW, Washington, DC; <http://www.ed.gov/programs/rsarecreation/index.html>; accessed June 2007.
- U.S. Department of Health and Human Services. *Physical Activities Guidelines*, 2nd Edition. Washington, DC: U.S. Department of Health and Human Services; 2018. https://health.gov/paguidelines/second-edition/pdf/Physical_Activity_Guidelines_2nd_edition.pdf; accessed March 2019.
- U.S. Department of Health and Human Services; *Steps to a Healthier U.S.*; Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA; <http://www.cdc.gov/steps/index.htm>; accessed June 2007.
- U.S. National Library of Medicine, Frontiers in Pediatrics. *Tackling Youth Inactivity and Sedentary Behavior in an Entire Latin America City*, 2018; 6: 298. Published online 2018 Oct 11; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6194316/>; accessed Feb. 11, 2019.
- U.S. Department of Interior - National Park Service (NPS); *Save America's Treasures*; <http://www.nps.gov/history/hps/treasures/>; accessed July 2007.
- U.S. Department of the Interior, "New 5-Year Report Shows 101.6 Million Americans Participated in Fishing, Hunting & Wildlife Activities"; U.S. Fish and Wildlife Service Survey Preliminary Findings Show Importance of increasing Access to Public Lands; <https://www.doi.gov/pressreleases/new-5-year-report-shows-1016-million-americans-participated-hunting-fishing-wildlife>; accessed March 2019.
- U.S. DOT; *FHWA Recreational Trails Program*; 1200 New Jersey Ave SE, Washington DC; http://www.fhwa.dot.gov/environment/recreational_trails/index.cfm; accessed June 2013.
- U.S. DOT, *Fixing America's Surface Transportation Act or "FAST Act,"* Transportation Alternatives Program; <https://www.fhwa.dot.gov/fastact/factsheets/transportationalternativesfs.cfm>;
- U.S. DOT; *Summary of Highway Provisions in SAFETEA-LU*; August 2005; Federal Highway Administration, 1200 New Jersey Ave SE, Washington DC; http://www.fhwa.dot.gov/safetealu/safetea-lu_summary.pdf; accessed June 2007.
- U.S. DOT-Federal Highway Administration; *Interim Program Guidance: The Congestion Mitigation Improvement Program under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users*; October 31, 2006; <http://www.fhwa.dot.gov/environment/cmaq06gd.pdf>; accessed June 2007.
- U.S. DOT-Federal Highway Administration; *Transportation Alternatives Program (TAP)* http://www.fhwa.dot.gov/environment/transportation_alternatives/; accessed November 2013
- U.S. EPA; *American Heritage Rivers- Home Page: American Heritage Rivers Updates*, volume 4, number 9, January 2002; <http://www.epa.gov/rivers/update/102.html>; revised October 19, 2006.
- U.S. EPA; *Executive Order 13061 – 09-11-1997*; <http://www.epa.gov/rivers/eo13061.html>; updated October 19, 2006.
- U. S. EPA; *Great Lakes Areas of Concern*; <http://www.epa.gov/glnpo/aoc/>; revised June 18, 2007.

- U.S. EPA; "Lake Ontario Lakewide Management Plan Update '07"; Public Information Office, 186 Exchange Street, Buffalo, NY 14204; <http://www.epa.gov/glnpo/lakeont/2007/louupdate2007.pdf>; accessed November 2007.
- U.S. FWS; *Sport Fish Restoration Program Overview*; Wildlife and Sport Fish Restoration Programs, 4401 North Fairfax Drive, Arlington, VA; <http://wsfrprograms.fws.gov/Subpages/GrantPrograms/SFR/SFR.htm>; updated September 25, 2013.
- U.S. FWS; *North American Wetlands Conservation Act*; Division of Bird Habitat Conservation; 4401 North Fairfax Drive, Arlington, VA. <http://www.fws.gov/birdhabitat/Grants/NAWCA/index.shtm>; accessed September 2013.
- U.S. Federal Highway Administration (FHWA); *Congestion Mitigation and Air Quality Improvement Program*; http://www.fhwa.dot.gov/environment/air_quality/cmaq/; updated August 2013.
- U.S. Geological Survey; *Nonindigenous Aquatic Species (NAS)*; U.S. Geological Survey, 7920 NW 71st Street, Gainesville, FL 32653; <http://nas.er.usgs.gov/about/default.aspx>; Last Modified November 15, 2012.
- U.S. Green Building Council (GBC): "LEED Rating Systems"; 2101 L Street NW, Suite 500 | Washington, DC 20037; <http://www.usgbc.org/leed/rating-systems>; accessed November 2013.
- USDA; *Forest Legacy Program*; 14th and Independence Avenue, SW, Washington, DC; <http://www.fs.fed.us/spf/coop/programs/loa/flp.shtml>; June 2007.
- USDA; *Wetlands Reserve Program*; Natural Resources Conservation Service, 14th and Independence Avenue, SW, Washington, DC; http://www.nrcs.usda.gov/PROGRAMS/2007_allocations/07WRPAlloc.pdf; accessed June 2007.
- USDA; Grant and Partnership Programs that Can Address Invasive Species Research, Technical Assistance, Prevention and Control; National Invasive Species Information Center, National Agricultural Library, 10301 Baltimore Avenue, 4th Floor, Beltsville, MD 20705; January 2006; <http://www.invasivespeciesinfo.gov/docs/toolkit/usdagrants2006.pdf>; accessed February 2008.
- ## W
- Währborg, Peter; Petersson, Ingemar F.; Grahn, Patrik. "Open Access Nature-Assisted Rehabilitation for Reactions to Severe Stress and/or Depression in a Rehabilitation Garden: Long-Term Follow-Up Including Comparisons with a Matched Population-Based Reference Cohort". *Journal of Rehabilitation Medicine*, Volume 46, Number 3, March 2014, pp. 271-276(6). Publisher: Medical Journals Limited. DOI: <https://doi.org/10.2340/16501977-1259>; accessed April 2019.
- Weber A.M. and Trojan J. "The Restorative Value of the Urban Environment: A Systematic Review of the Existing Literature." *Environ Health Insights*. 2018 Nov 26;12:1178630218812805. doi: 10.1177/1178630218812805. eCollection 2018. <https://www.ncbi.nlm.nih.gov/pubmed/30505146>; accessed April 2019.
- Wilcove, D; Rothstein, D.; Dubow, J.; Phillips, A.; and E. Losos; "The Status of Biodiversity in the United States"; *Precious Heritage*; Stein, B.A.;Kutner, L.S., and J.S. Adams, eds; New York, NY; Oxford University Press; Pages 230-254; 2000.
- World Health Organization, *Health and Sustainable Development*; <https://www.who.int/sustainable-development/cities/health-risks/urban-green-space/en/>; accessed February 11, 2019.
- World Health Organization. "Urban green areas". <https://www.who.int/sustainable-development/cities/health-risks/urban-green-space/en/>; accessed February 2019.
- ## Y
- Yli-Pelkonena, Vesa et al. "Greenbelts do not reduce NO2 concentrations in near-road environments." *Urban Climate*. Volume 21, September 2017, Pages 306-317. <https://doi.org/10.1016/j.uclim.2017.08.005>; accessed April 2019.
- ## Z
- Zhao, Lei; Xuhui Lee; Ronald B. Smith; and Keith Oleson. "Strong contributions of local background climate to urban heat islands". *Nature*. Volume 511, pages 216–219 (10 July 2014). <https://www.nature.com/articles/nature13462>; accessed April 2019.