

## II. Environmental Setting

### The Region

New York State is divided into 12 park regions. Eleven of these regions are under the jurisdiction of the Office of Parks, Recreation and Historic Preservation. The twelfth region is composed of the Adirondack and Catskill Forest Preserves and is administered by the Department of Environmental Conservation (DEC). Moreau Lake State Park is located in the Saratoga-Capital District Region administered by the Office of Parks, Recreation and Historic Preservation (OPRHP).

Regional characteristics of the counties and the region in which Moreau Lake State Park is located, especially as they relate to demographics, land use and other general implications on the park, are described in this section of the chapter.

### Location

The park is located in the Towns of Moreau and Corinth, Saratoga County and the Towns of Lake Luzerne and Queensbury, Warren County within the Saratoga-Capital District State Park Region. The park is along the southern edge of the Adirondack Mountains (See Map 1 – Vicinity Map).

### Access and Transportation

#### Access

The main entrance to the park is off of Old Saratoga Road accessed from State Route 9 via Exit 17 off I-87 (the Northway). To the north and west, Spier Falls Road transects the park as it parallels the Hudson River. The portion of the park located in Warren County cannot be directly accessed from the main Saratoga County portion of the park because the Hudson River flows through the park and there are no pedestrian or vehicle crossings along this stretch of river. Access to the Warren County section of the park is obtained from either Exit 18 of I-87, through the City of Glens Falls and into the park property via Corinth Road, or via Spier Falls Road west into the Village of Corinth and across the river by the bridge. The only other means to access that area of the park is to arrive by boat. Spier Falls Dam is impassible to large boats but canoes and kayaks can be portaged around the falls to continue down river to the Sherman Island Dam for another portage.

#### Transportation

The primary mode of traveling to the park is by personal vehicle and the use of the state, county and local road system. There is no public transportation or mass transit system linked directly to the park. The closest AMTRAK rail stations are in Fort Edward (8 miles) and Saratoga Springs (12 miles). Taxi service and car rentals are available in both communities. Adirondack Trailways maintains bus service from Albany (40 miles) to Glens Falls and

Plattsburgh. The region also offers the Albany International Airport (38 miles) and several small county airports.

## **Physical Characteristics**

The general topography of the park is hilly with a combination of rolling hills and steep slopes. The park shows typical characteristics of both the northern Adirondack Mountains and southern Appalachian forests. An outwash plain that begins along the western bank of the Hudson River and extends down the valley supports oak-pine forests. This forest type occurs in the park and has been developed as recreation areas (Evans & Novak, 2000).

The Hudson River and Moreau Lake are the two main waterbodies within the park boundaries. Moreau Lake is a “kettle hole lake” formed during the advancement and recession of glacial ice. The Hudson River bisects the park and separates the northern Luzerne Mountains from the southern Palmertown Range.

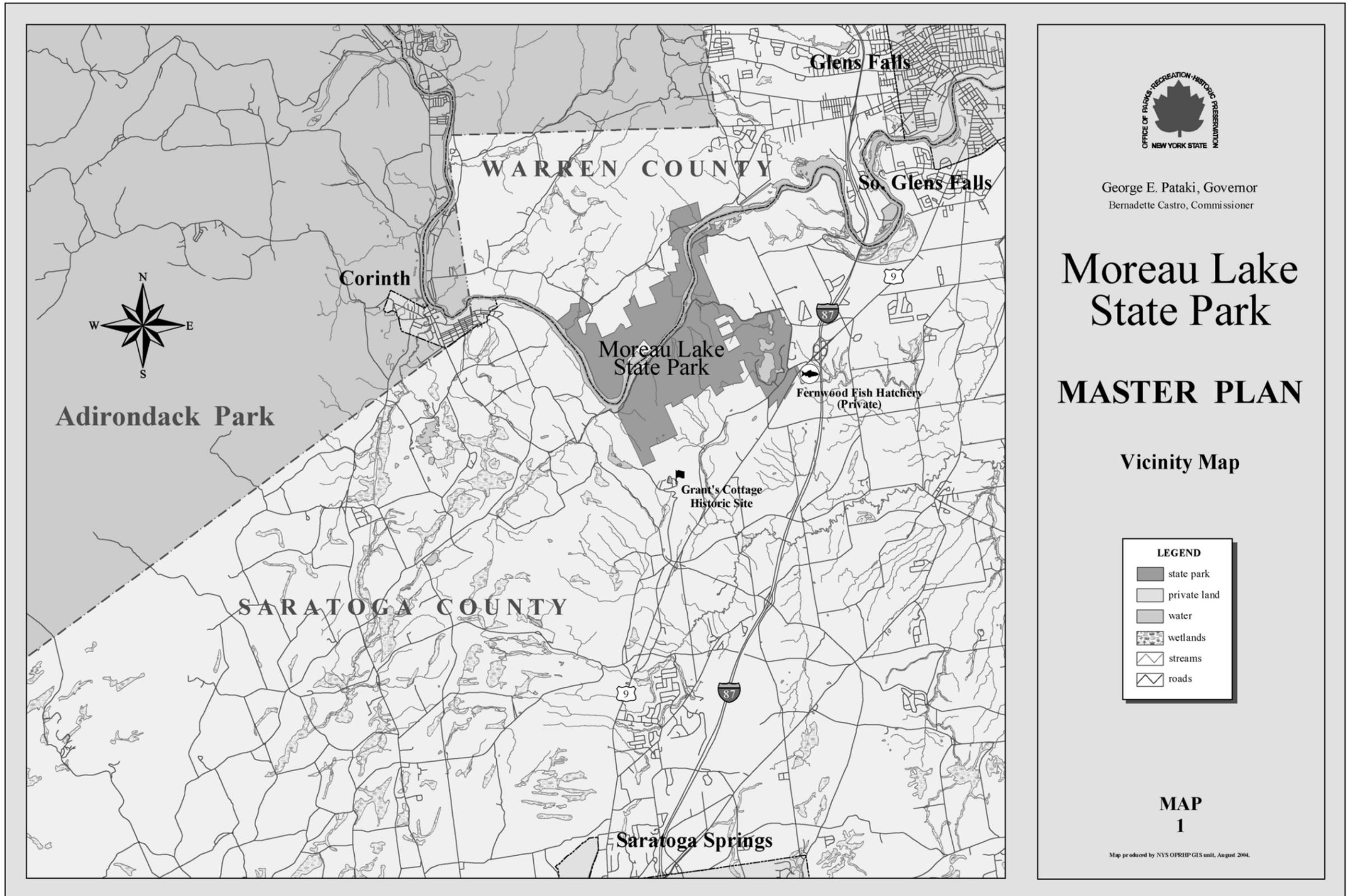
## **Socioeconomic Characteristics**

A visitor survey conducted during the summer of 1999 indicated that visitors to the park primarily reside in counties immediately surrounding the park; 47.2% of the visitors reside in Saratoga County, Washington County (12.3%) and Albany County (10.8%) (OPRHP, 1999). Visitors also came from Rensselaer, Warren and Schenectady Counties. These six counties will define the park’s service area and are used in the following section.

## **Population**

Based on the 2000 Census, the population of New York State is 18,976,457. That is a 5.48% increase from 1990 (Table 2-1). The 2000 population for the six-county service area for Moreau Lake State Park is 918,638 with Albany County having the largest population (Table 2-1). Rensselaer and Schenectady Counties show their population as declining, while Albany, Saratoga, Warren and Washington Counties show an increase in population. Of the six counties, Saratoga County is showing the largest increase in population.

Map 1 – Vicinity Map



George E. Pataki, Governor  
Bernadette Castro, Commissioner

# Moreau Lake State Park

## MASTER PLAN

Vicinity Map

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<b>Table 2-1 – Population and Change in Population from 1990 to 2000 for the Six County Service Area of Moreau Lake State Park</b>					
<b>Area or County</b>	<b>1990 Census</b>	<b>2000 Census</b>	<b>Percent Change</b>	<b>Project Population 2010</b>	<b>Percent Change 2000-2010</b>
New York State	17,990,778	18,976,457	5.48%	18,509,390	-2.46%
Albany	292,793	294,565	0.61%	308,325	4.67%
Rensselaer	154,429	152,538	-1.22%	160,591	5.28%
Saratoga	181,276	200,635	10.68%	232,102	15.68%
Schenectady	149,285	146,555	-1.83%	148,039	1.01%
Warren	59,209	63,303	6.91%	65,555	3.56%
Washington	59,330	61,042	2.89%	63,163	3.47%
<b>Service Area (Total)</b>	<b>896,322</b>	<b>918,638</b>	<b>2.49%</b>	<b>977,775</b>	<b>6.44%</b>

Source: 2001 New York State Statistical Yearbook 26<sup>th</sup> Edition

## Unemployment

Unemployment rates within the Park’s service area range from 2.8% in Albany County to 4.1% in Washington County. The unemployment rate for the entire service area is 3.57% (Table 2-2). The unemployment rate for the park’s service area dropped from 4.25% in 1998 (SUNY, 2001).

<b>Table 2-2 – 2000 Unemployment Rates for the Six County Service Area of Moreau Lake State Park</b>	
<b>Area</b>	<b>Percent Unemployment</b>
New York State	4.60%
Albany	2.80%
Rensselaer	3.80%
Saratoga	3.20%
Schenectady	3.50%
Warren	4.00%
Washington	4.10%
<b>Service Area (Total)</b>	<b>3.57%</b>

Source: 2001 New York State Statistical Yearbook 26<sup>th</sup> Edition

## Housing

In 1990, Albany County had the largest number of housing units of the six counties. This is most likely attributed to the high population and the State’s capital city being located in this county. Schenectady County had the lowest number of seasonal units (282), whereas Warren County had the highest number at 6,944. Part of Warren County is within the Adirondack Park, which is a major tourist and vacation destination area.

<b>County</b>	<b>Total Housing Units</b>	<b>Total Occupied Housing Units</b>	<b>Seasonal Units</b>
Albany	124,255	115,824	1,168
Rensselaer	62,591	57,612	1,258
Saratoga	75,105	66,425	4,708
Schenectady	62,769	59,181	282
Warren	31,737	22,559	6,944
Washington	24,216	20,256	2,580

Source: 2001 New York State Statistical Yearbook 26<sup>th</sup> Edition

## Recreation Supply/Needs Assessment

### Supply

OPRHP maintains the Outdoor Recreation Facilities Inventory. This inventory keeps track of all the outdoor recreation facilities within New York State. The inventory is continually updated to represent the current supply of recreational opportunities. Table 2-4 shows the type and number of recreation sites within the service area of Moreau Lake State Park. Warren County offers nearly half of the boating opportunities within the region and most of the camping opportunities. This is likely contributed to the fact that part of the county is incorporated within the boundaries of the Adirondack Forest Preserve, which is a major destination area for recreationists.

	<b>Albany</b>	<b>Rensselaer</b>	<b>Saratoga</b>	<b>Schenectady</b>	<b>Warren</b>	<b>Washington</b>	<b>Total</b>
All recreation sites	292	196	259	92	274	102	1215
<b>Boating</b>							
Moorings	572	452	914	45	1442	178	3603
Ramps	15	12	47	6	54	14	148
<b>Camping</b>							
Campgrounds	8	6	29	2	84	11	140
Tent/RV sites	286	756	2672	261	5476	199	9650
Trails	42	27	31	29	68	23	220
Cross-country skiing	15	11	10	11	17	9	73
Golf courses	19	10	20	9	15	9	82
Fishing sites	34	28	46	14	74	36	232
Swimming areas	63	30	66	16	155	25	355
Tennis facilities	64	25	27	12	59	19	206
Court game facilities	77	46	41	17	17	23	221
Field game facilities	92	63	61	18	26	20	280

The Saratoga-Capital District Region, in which Moreau Lake State Park is located, covers an area of more than 2.8 million acres and contains 12 State Parks. The 4,110 acres of Moreau Lake State Park make it the largest state park in the region. The majority of the park's acreage is within Saratoga County.

## Demand

OPRHP determines recreation demand through the use of a survey of the general public and the most current population statistics. The survey requests information regarding the number of days a person participates in recreation activities over the past 12 months. The most current population statistics are obtained from the Empire State Development Corporation.

Demand is represented in two ways, "Demand at Origin" and "Demand at Destination" (OPRHP, 2002). These figures are computed for the current population data and projected population data. In the 2003 Statewide Comprehensive Outdoor Recreation Plan (SCORP), demand was determined for the year 1998 and projected for the year 2020. The estimated percent growth in demand is shown in Table 2-5.

<b>Activity</b>	<b>% Growth in Demand at Origin</b>	<b>% Growth in Demand at Destination</b>
Relax in Park	4.77%	4.83%
Swimming	4.28%	4.70%
Biking	3.50%	3.95%
Golfing	5.36%	6.34%
Jogging/Walking	5.87%	5.88%
Tennis	3.24%	3.26%
Basketball	0.31%	0.37%
Field Sports	2.01%	2.07%
Camping	4.98%	5.64%
Hiking	4.53%	4.87%
Boating	4.71%	5.51%
Fishing	4.77%	5.66%
Ice Skating	3.08%	3.18%
X-Country Skiing	4.91%	5.22%
Downhill Skiing	2.42%	3.34%
Hunting	5.17%	6.20%
Snowmobiling	5.52%	5.87%
Historic Sites	5.82%	6.15%

Demand at origin is defined as the demand for an activity generated by residents within a given geographical location or region. The demand at destination is demand for an activity generated by people who travel to a given geographical location or region. Demand at destination is the figure used in determining recreational need.

## Recreational Need

To determine recreational need, the current supply of recreational facilities is compared to projected future demand (OPRHP, 2002). The result is expressed numerically in Table 2-6. This index of need ranges in scale from 1-10. An index of one indicates that in the year 2020 there will be a large availability of recreation resources relative to demand; whereas, a ten indicates that recreation resources in 2020 will not be available to meet demand and most existing facilities will be heavily used (OPRHP, 2002). Intermediate numbers indicate a range of crowding and facilities will need to be replaced over the next 20 years (OPRHP, 2002).

Activity	Albany	Rensselaer	Saratoga	Schenectady	Warren	Washington	Service Area (Weighted Average)
Relax in Park	4	4	4	5	3	5	4.1
Swimming	5	5	5	5	3	4	4.6
<b>Biking</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>4.9</b>
<b>Golfing</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>4.9</b>
Walking	6	4	4	6	4	3	4.7
Tennis	4	4	4	4	3	4	3.8
Court Games	4	4	5	4	4	5	4.4
<b>Field Games</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>7</b>	<b>5.1</b>
Visit Historic Sites	4	4	4	4	4	5	4.0
<b>Camping</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5.1</b>
<b>Hunting</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>4.9</b>
<b>Hiking</b>	<b>6</b>	<b>6</b>	<b>5</b>	<b>6</b>	<b>4</b>	<b>4</b>	<b>5.5</b>
<b>Boating</b>	<b>7</b>	<b>6</b>	<b>5</b>	<b>6</b>	<b>4</b>	<b>4</b>	<b>5.5</b>
<b>Fishing</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>5.0</b>
Local Winter Sports	4	4	5	3	3	4	3.9
Cross-Country Skiing	6	5	5	6	4	4	4.8
Downhill Skiing	5	5	5	5	4	4	4.5
<b>Snowmobiling</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5.0</b>

The table above shows that, within the service area, none of the studied activities are in great need. However, some need is indicated for hiking, boating, camping and field games in the area. Other activities, such as fishing, hunting, golfing, biking and snowmobiling, show that crowding may occur and facilities may require improvement or expansion. The ability for the park to accommodate these needed activities and other studied activities will be evaluated using the information within this chapter and explained in the next chapter.

## Adjacent Land Uses

The primary land uses immediately adjacent to the park are the Mount McGregor State Correctional Facility, the Fernwood Fish Hatchery in the Town of Moreau, the former gravel mine located near the intersection of South Road and Old Saratoga Road and the West Mountain Ski Area in the Town of Queensbury. Other uses include DEC Forest Preserve Lands and open space. There are also residential and industrial uses near by. Commercial use is light and limited. The character of the area is generally rural, although suburban

development along the Northway/Interstate-87 Corridor is rapidly expanding (See Map 2 – Adjacent Land Uses).

## Police

The park is regularly patrolled by the State Park Police. If situations arise that cannot be directly dealt with by Park Police forces, assistance can be requested from the New York State Police, Saratoga County or Warren County Sheriff's Office. The portion of the park south of the Hudson River is within Saratoga County's jurisdiction and the portion north of the Hudson River is within Warren County's jurisdiction. The Hudson River is considered a State navigable waterway and could be patrolled by any of the following law enforcement entities: Saratoga or Warren County Sheriff's Offices, the New York State Police, the New York State Park Police, New York State Conservation Officers (DEC) or the U.S. Coast Guard.

## Fire, Ambulance and Rescue

The area surrounding the park is served by a number of volunteer Fire Departments, Ambulance Services and Rescue Squads. Primary support is supplied by South Glens Falls Fire and the Moreau Rescue Squad. Support also comes from the West Glens Falls Fire Department, the West Glens Falls Rescue Squad, the Luzerne Fire Department, Queensbury Fire Department and Corinth Fire Department. Any of these services can be contacted by using the 911 emergency response system. In all cases the NY State Park Police will be notified.

## Educational Facilities and Museums

The park property lies within four main school districts-South Glens Falls, Queensbury, Lake Luzerne and Corinth Central Schools. Saratoga Springs and Glens Falls School Districts also closely border the park's property. Nearby higher educational facilities include Adirondack Community College, located in Queensbury, and Skidmore College and Empire State College located in Saratoga Springs. Other colleges and universities located in the Region include Siena College, State University of New York at Albany, the College of Saint Rose, Russell Sage College and the Rensselaer Polytechnic Institute.

The Chapman Historical Museum contains rooms restored to the time period of 1865-1910. The Hyde Collection Museum features works by such famous artists as Degas, Picasso, Van Gogh, Whistler and more. Both are located in downtown Glens Falls and offer tours and educational guides throughout their facilities; open year round. The Children's Museum is a hands-on museum for children and families in downtown Saratoga Springs. The Tang Museum at Skidmore College offers major shows of contemporary and experimental art.

Ulysses S. Grant Cottage State Historic Site is located on Mt. McGregor within the boundaries of the correctional facility. This cottage is preserved as Ulysses S. Grant left it upon his death in 1885. Grant spent the last 6 weeks of his life writing his memoirs in this cottage. He stayed here with his wife Julia and his family. The Cottage is operated by the Friends of the Ulysses S. Grant Cottage and OPRHP. It is open daily from Memorial Day to Labor Day and on weekends through Columbus Day.

The National Museum of Dance is located in one of the renovated bath houses of Saratoga Spa State Park in Saratoga Springs. This Museum is the only museum exclusively devoted to American professional dance. The Museum honors the great figures in dance history, while celebrating its vitality and variety through artifacts and exhibitions, lectures, dance demonstrations and master classes, historic photographs, and famed set designs and costumes.

The National Museum of Racing located in Saratoga Springs, recognizes the achievements of horses, trainers and jockeys and their contributions to racing. The Museum has been housed in Saratoga Springs since 1950 and at its current location on Union Street since 1955.

The Saratoga Automobile Museum opened in the summer of 2002 and occupies the old bottling plant in Saratoga Spa State Park. The museum offers four galleries of vintage car collections and exhibits that look to the future of the automobile. This museum is not just for car buffs but for anyone interested in social and economic history.

The newly established New York State Military Museum and Veterans Research Center is located in the Lake Avenue Armory in Saratoga Springs. The museum has six display areas including:

- an introduction to the museum and research center;
- information on the formation of the military museum, which includes uniforms worn by New York soldiers in the Civil War;
- Revolutionary War items, including a cannon captured from the British and brought back by Benedict Arnold;
- An exhibit on armories around the state, which includes a recreation of a day room from 1915;
- Displays on New York National Guard units in World War II; and
- Art and photos from the Division of Military and Naval Affairs.

## Health Care Facilities

The park is located between two main hospitals, Glens Falls Hospital and Saratoga Hospital. Additional walk-in medical clinics in the area include: Convenient Medical Care PC in Queensbury, Saratoga Care in Saratoga Springs and the Hudson Headwaters Health Network with offices throughout the area.

## Social Services

Local social services offered include the American Red Cross in Warren County, the Department of Social Services on Gurney Lane in Queensbury, Washington County Department of Social Services on Broadway in Fort Edward and the Saratoga County Department of Social Services on West High Street in Ballston Spa.

Map 2 – Adjacent Land Use



George E. Pataki, Governor  
Bernadette Castro, Commissioner

# Moreau Lake State Park

## MASTER PLAN

### Adjacent Land Use

MAP  
2

Map produced by NYS OPRHP GIS unit, August 2004.

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## Recreational Facilities

Saratoga Spa State Park, located 20 minutes south of Moreau Lake State Park, offers year-round recreational opportunities such as picnicking, golfing, swimming, running, snow shoeing and cross-country skiing. This park has many natural springs that can be visited through a network of short trails. Also the historic buildings of the park are being used by museums, hotels and restaurants.

The Saratoga Performing Arts Center at Saratoga Spa State Park holds many concerts, musical events and other entertainment shows throughout the summer months. Downtown Saratoga Springs has many restaurants and shops to browse. The Saratoga National Historic Park offers several preserved battlefield sites, and is open year round. The Saratoga Race Course is a popular attraction from late July through early September.

The Glens Falls Civic center is a source of many attractions throughout the year including musical concerts, sporting events and entertainment shows. Glens Falls and Lake George also offer a variety of recreational facilities including libraries, movie theaters, skating rinks, bowling alleys and miniature golf. The Great Escape is a popular amusement park located in Lake George, about 20 minutes from the park. Lake George offers swimming, boating, fishing and other water related activities and attractions.

Crandall Park, located in Glens Falls, offers tennis courts, walking trails and lighted cross-country ski trails. Both Saratoga Springs and Glens Falls offer YMCA facilities. The Lake George Bike Trail and the Glens Falls Feeder Canal offer miles of trail to walk or bike.

The Adirondack Forest Preserve boundary is only one and one half miles from the park and the Champlain Canal is just six miles east of Moreau Lake State Park. Both of these areas offer opportunities for many types of outdoor activities, as do the numerous public golf courses located close to the park in both Saratoga and Warren Counties.

West Mountain Ski Area is located in the southern Adirondack Mountains west of Glens Falls, NY. The mountain offers downhill skiing on 22 trails that run through northern hardwood and white pine forests to two base areas. During the summer months the ski area is opened for mountain biking. The top of the mountain offers views of Lake George and the Hudson River Valley.

## The Park

### History

In 1961, the State Conservation Department began acquiring land in the town of Moreau under a Bond Act to create a public campsite (Vollmer, 1969). By 1967, approximately 600 acres had been acquired and Moreau Lake State Park was established. This new park was transferred to the Capital District State Park Commission. When the Division of Parks and Recreation was separated from the Conservation Department in 1972, administration of Moreau Lake State Park became the responsibility of the Office of Parks and Recreation, which is now known as the Office of Parks, Recreation and Historic Preservation (OPRHP). Later acquisitions increased the park's acreage to just under 900 acres. In 1998, New York State acquired over 3,200 acres from the Open Space Institute (OSI) and Niagara Mohawk. The Department of Environmental Conservation (DEC) acquired the parcels in Warren

County that equal 1,320 acres and OPRHP acquired the 1,920 acres within Saratoga County. Through a Memorandum of Understanding (MOU) DEC has agreed that the 1,320 acres they acquired would be managed and operated by OPRHP as part of Moreau Lake State Park. This more than tripled the size of Moreau Lake State Park. Additional acquisitions have further increased the size of the park. As of April 2006 the Park consists of 4,184 acres that are owned by OPRHP and DEC. Saratoga County hosts 2,815 acres of Moreau Lake State Park with 2,634 acres in the Town of Moreau and 181 acres in the Town of Corinth. In Warren County 1,159 acres are within the town of Lake Luzerne and 210 acres are within the Town of Queensbury for a total of 1,369 acres within the county. Moreau Lake State Park is now the tenth largest State Park in New York's park system and the largest park of the Saratoga-Capital District Region.

The only planning document that refers to Moreau Lake State Park is a plan entitled "Master Plan for Outdoor Recreation in the Capital District State Park Region, New York State" written in 1969 by the Vollmer Associates for the Conservation Department-Division of Parks and the Capital District State Park Commission. This plan identifies parcels for acquisition and recommends expansion of park facilities at Moreau Lake State Park (Vollmer, 1969). The current planning effort will be the first Master Plan completed for Moreau Lake State Park.

## **Park Boundaries**

The park occupies more than 4,100 acres within the Towns of Moreau and Corinth in Saratoga County and the Towns of Lake Luzerne and Queensbury in Warren County. The park is divided by the Hudson River, which forms the boundary between Saratoga and Warren Counties.

The portion of the park within Saratoga County is the largest parcel, with approximately 2,800 acres. The northern boundary of this section parallels the south shore of the Hudson River and Spier Falls Road as far north as one third mile up stream of Sherman Island Dam. The property line skirts around a forested parcel that is used as a gravel mine owned by the Town of Moreau. The boundary continues around Palmertown Mountain and heads southeasterly back to Spier Falls road. The boundary is then formed by Spier Falls Road to just before its junction with Potter Rd. On the east, the park is bounded generally by Mountain Road. The boundary follows Old Saratoga Road in a northeasterly direction then turns abruptly southeast to Route 9. Following Route 9 in a southwesterly direction for a short way the boundary crosses to the eastside of Route 9 heads southwest and crosses back to the west-side of Route 9 before meeting with South Road. At South Road the boundary heads north to the intersection of South Road and Old Saratoga Road. From this area, the south end of Moreau Lake, the boundary proceeds northwesterly then turns to a southwesterly direction along the top of the eastern ridge of the Palmertown Range Mountains. The boundary then meets the property of Mount McGregor State Correctional Facility as it crosses from the Town of Moreau into the Town of Corinth and back toward the Hudson River. In the interior of this parcel, there are four small in-holdings of approximately 100 acres.

A parcel of parkland in Saratoga County is included as part of Moreau Lake State Park, but is detached from the main area of the park. This parcel is located along the shores of the Hudson River down stream from the Sherman Island Dam and power generating facility.

This parcel is approximately a one-mile long, 50-foot wide strip (approximately 6 acres) of Hudson River shoreline.

The portion of the park within Warren County is approximately 1,300 acres. This parcel is bounded by the northern shore of the Hudson River from approximately one mile up stream from the Sherman Island Dam, south and west to a short distance past Bennie Brook. The northern boundary follows a jagged route through the Luzerne Mountains, around the Hamlet of Hartman into the Town of Queensbury.

## **Designations and Legal Constraints on Parkland**

### **Niagara Mohawk Power Corporation (NiMo) (National Grid)**

Although the State acquired significant acreage from OSI and Niagara Mohawk (NiMo), the company retained a network of power line transmission corridors which crisscross the property. OPRHP has negotiated a Memorandum of Understanding with NiMo to manage and patrol the transmission corridors as State Park land to ensure that these corridors are not used as recreation corridors. This agreement also gives OPRHP permission to establish 12 non-motorized trail crossings and 1 vehicular crossing of the transmission corridors for public trail use and access.

### **Erie Boulevard Power/Reliant Energy and its Successors**

The Spier Falls and Sherman Island hydroelectric power generating stations are operated by the power company that owns the facilities, under a license issued by the Federal Energy Regulatory Commission (FERC). Licenses are renewed on a cycle of 30, 40 or 50 years. A 50-foot corridor paralleling the shores of the Hudson River was retained by the power company for the operation of their power generating stations. Under the current 40 year license, the company must improve and maintain two existing boat launches, and install water-accessed campsites and portage trails around Spier Falls and Sherman Island Dams. A Memorandum of Understanding between OPRHP and the power company provides for OPRHP management of the 50-foot corridor and the recreation facilities to be managed as State Park land, exclusive of the areas adjacent to the dam and generating facility.

### **Land and Water Conservation Funds (LWCF)**

Appropriations from the New York State Land and Water Conservation Fund were used to construct the bathhouse at Moreau Lake. Under the regulations of the LWCF, any park that receives such funding is granted “6F” protection. This means that no part of the park property can be converted for uses other than public recreation.

### **Department of Environmental Conservation (DEC)**

DEC is the owner of the former Niagara Mohawk (National Grid) lands within Warren County. Through a Memorandum of Understanding (MOU) between DEC and OPRHP, these lands will be managed and maintained by OPRHP as part of Moreau Lake State Park. The MOU calls for cooperation between DEC and OPRHP in the planning and development of these lands.

## Fernwood Fish Hatchery

The Fernwood Fish Hatchery is located southeast of the park. It is in the floodplain of Moreau Lake. OPRHP has an easement and an agreement with the hatchery to maintain drainage structures and culverts through the hatchery property. These drainage structures and culverts help to control runoff from Moreau Lake.

## American Heritage River

In 1997, Governor George E. Pataki nominated the Hudson River to be designated, in 1998, as an American Heritage River. The 315 miles of river, from its source in Lake Tear of the Clouds to the Verrazano Narrows, and the 19 counties surrounding its shores are included in the Heritage River Area. Moreau Lake State Park is included in the Hudson's American Heritage River Area.

## Physical Resources

### Geology

The underlying bedrock structures the topographic relief and soil development of the region. The underlying bedrock consists primarily of metamorphosed sedimentary rocks, limestones and dolostones from the Ordovician and Middle Proterozoic periods. However, the bedrock beneath the area of Mud Pond and Moreau Lake has not been documented as a result of the extensive glacial and alluvial deposits left during the Quaternary of the Cenozoic Period. Metamorphic rocks of unknown origin, including charnockitic, granitic, and quartz seyenitic gneisses have also been identified (See Map 3 – Bedrock Geology).

South of Old Saratoga Road, the park is underlain by the Canajoharie shales of the Lorraine, Trenton and Black River Groups. These metamorphic rocks formed during the Middle Ordovician Period. As the Taconic Orogeny reached its climax during the Ordovician, a number of normal faults and fractures were formed in the crust. A fault line parallels the Palmertown Ridge just west of Moreau Lake and the day use area. This normal fault structures the topography and drainage in the area along the eastern ridge of the Palmertown Range. In addition, depending upon the specific fault types, this tectonic activity can expose specific geological deposits and/or protective ledges which could possibly have been utilized by early indigenous inhabitants.

Although the tectonic uplifting and metamorphic activity created fold and fractures in the underlying bedrock, glacial activity has been the major recent geomorphological influence. The various retreats and advances of the ice front during the later stages of the glacial movement have both scoured the valleys and deposited soils as drift, till and ground moraine. Evidence of this activity is readily apparent in the existence of water sorted gravel and sands, exposed bedrock, steeply incised walls and the existing drainage patterns in the region. The Surficial geology map (See Map 4 – Surficial Geology) identifies bedrock existing in many locations within the park boundaries. This code indicates that bedrock substances, which are coded on the bedrock geology map (see Map 3 – Bedrock Geology) are exposed or are generally within one meter of the surface.

## Topography

Moreau Lake State Park is located in a transition zone between the Hudson-Mohawk Lowland and the Adirondack Low Mountain Physiographic Provinces. The current topographic conditions prevalent in this region developed primarily as a result of the glaciofluvial activities during the waning stages of the Wisconsin Glacial Epoch, and the stabilization of the drainage patterns from Lake Iroquois, Lake Albany and the Proto-Mohawk River. The area exhibits a variety of topographic conditions ranging from steep slopes and gradients to 37%, through rolling plains with gentle slopes from 2% to 9%. Moreau Lake is a naturally formed lake from a glacial kettle pond.

Elevations generally increase towards the northwest. They range upward from a low contour interval of 334 feet Mean Sea Level (MSL) near the water line of the lake, which has an impoundment level of 333 feet MSL. North of the lake is a small wetland area and a larger pond which retains water at a slightly higher elevation. Several peaks and plateaus in the Palmertown Range reach an elevation over 1100 feet MSL. The greatest elevation in the Warren County properties is 1150 feet MSL. Spier Falls Pool is at 433 feet MSL and the Sherman Island Pool is at 370 feet MSL. Topographic relief levels out near the eastern limits of the park which consist of rolling to undulating hills formed from glaciofluvial and alluvial soils along the Spier Falls Road and Mountain Road.

## Soils

As noted earlier, many soils of the region were developed as a result of the advances and retreats of glaciers. Glaciation both scoured and filled the valleys with silts, sands and gravels. The following are descriptions of the many soil types found within the area of Moreau Lake State Park.

*BdC - Bice very bouldery fine sandy loam, sloping*

*BdE - Bice very bouldery fine sandy loam, steep*

This is a deep well drained soil in wooded areas on hillsides and hill crests on uplands. Boulders and stones about 5 to 30 feet apart are on the surface. Most areas are oval or rectangular and range from 10 to more than 100 acres. Slope ranges from 3 to 45 percent.

Typically, the surface layer is covered with a thin, decomposed leaf litter. The surface layer is light brownish gray fine sandy loam about three inches thick. The subsoil is strong brown, yellowish brown, and olive brown fine sandy loam about 19 inches thick. The substratum is grayish brown sandy loam to a depth of 60 inches or more.

*BPC - Bice-Woodstock complex, strongly sloping, stony*

*BPE - Bice-Woodstock complex, steep, stony*

This is a deep to shallow, well drained, loamy soil formed in till, which has slopes ranging from 3 to 35 percent. Surface stones are common. The available water capacity is moderate to high. Permeability is moderate to moderately rapid. Included areas are up to 10 acres and make up about 10 percent of the unit.

Bice soils are on hills, ridges and other convex landforms on glacial till uplands. Slope ranges from 0 to 50 percent. The soils formed in glacial till from gneiss and granite with variable components of sandstone and shale. In some areas a thin silty mantle overlies the till.

Woodstock soils are level to very steep soils on bedrock controlled glaciated uplands. Slope ranges from 0 to 60 percent. The soils formed in friable till derived mainly from light colored schist, granite, or gneiss.

*CcD - Charlton loam, 15 to 25 % slopes*

Deep, sloping, well drained, low lime, loamy soil formed in till. The soils formed in acid till derived mainly from schist, gneiss, or granite. They are nearly level to very steep soils on till plains and hills. The available water capacity is low to high permeability is moderate. Highly erodible land.

*CeC - Chatfield-Hollis complex, rolling, rocky*

The Chatfield series consists of moderately deep, well drained, and somewhat excessively drained soils formed in till. They are nearly level to very steep soils on glaciated plains, hills, and ridges. Slope ranges from 0 to 70 percent. Crystalline bedrock is at depths of 20 to 40 inches. Rock fragments are typically gravel or channers but include cobbles and flagstones, particularly just above the bedrock.

The Hollis series consists of shallow, well drained and somewhat excessively drained soils formed in a thin mantle of till derived mainly from gneiss, schist, and granite. They are nearly level to very steep upland soils on bedrock-controlled hills and ridges. Slope ranges from 0 to 60 percent. Permeability is moderate or moderately rapid. Depth to hard bedrock ranges from 10 to 20 inches. Permeability is moderate or moderately rapid.

*ChB - Charlton fine sandy loam, 3 to 8 % slopes*

*ChC - Charlton fine sandy loam, 8 to 15 % slopes*

*ChD - Charlton fine sandy loam, 15 to 25 % slopes*

This is a sloping, deep, well drained soil on smooth, convex ridges, on hill crests, and on hill sides on uplands and sides of ridges on uplands and valley sides. Areas of this soil are oval to rectangular and range from 3 to 75 acres.

Typically, the surface layer is very dark grayish brown fine sandy loam about seven inches thick. The subsoil is dark yellowish brown, yellowish brown and light olive brown fine sandy loam about 21 inches thick. The substratum is grayish brown sandy loam to a depth of 60 inches or more.

*DeA - Deerfield loamy fine sand, nearly level*

The Deerfield series consists of very deep, moderately well drained soils formed in glaciofluvial deposits. They are nearly level to strongly sloping soils on terraces, deltas, and outwash plains. Permeability is rapid in the solum and rapid or very rapid in the substratum. Runoff is slow. Slope gradients are commonly 0 to 3 percent, but range to 15 percent. The soils formed in thick deposits of sand derived mainly from granite, gneiss and quartzite, but in places containing materials from schist and sandstone. The sand is poorly graded; medium sand is generally dominant and typically contains little or no gravel.

*Fl - Fluvaquents, frequently flooded*

Deep, nearly level, poorly or very poorly drained, variable texture, recent unconsolidated deposits of alluvium on floodplains. The available water capacity is high. Permeability is variable. Hydric.

*Fu - Fluvaquents-Udfluvents, frequently flooded*

This consists of nearly level to gently sloping soils in areas along streams. It is about 45 percent fluvaquents, 30 percent other soils. These soils are subject to frequent flooding,

which results in stream scouring lateral erosion, and shifting of soil deposits from one place to another. The areas of somewhat poorly drained to very poorly drained fluvaquents and well drained or moderately well drained udifluvents are intermingled. Udifluvents are in slightly higher areas of the landscape. Slope ranges from 0 - 5 percent, but is mainly less than 3 percent. Areas are mostly long and narrow and adjacent to secondary streams. A few areas are wider and along larger streams and rivers.

Fluvaquents differ from place to place. Generally, the surface layer is dark brown or dark gray gravelly fine sand to silty clay loam 1 to 6 inches thick. The substratum extends to a depth of 60 inches or more. It is mottled, gray or dark brown sand to silty clay loam. In places it has gravel and stones.

*HcA - Hinckley gravelly loamy sand, 0 to 3 % slopes*

*HcB - Hinckley gravelly loamy sand, undulating, 3 to 8 % slopes*

*HcC - Hinckley gravelly loamy sand, rolling, 8 to 15 % slopes*

*HcD - Hinckley gravelly loamy sand, hilly, 15 to 25 % slopes*

Deep, sloping, excessively drained, low to medium lime, gravelly and sandy soil formed in outwash. They are nearly level to very steep soils on terraces, outwash plains, deltas, kames, and eskers. Slope is generally 0 to 8 percent on tops of the terraces, outwash plains and deltas. Slope of 8 to 60 percent or more are on the kames, eskers and margins of the outwash plains, deltas, and terraces. The soils formed in water-sorted sand and gravel derived principally from granite, gneiss, and schist. The available water capacity is very low. Permeability is rapid. Potentially highly erodible land.

*HnB - Hinckley cobbly sandy loam, 3 to 8 % slopes*

*HnC - Hinckley cobbly sandy loam, 8 to 15 % slopes*

This is a sloping, deep, excessively drained soil on terraces and benches in valleys and on undulating plains. The soil has a high content of sand, gravel, and cobblestones. Most areas are irregular or oval, and range from 5 to 40 acres.

Typically, the surface layer is covered with a thin layer of undecomposed leaf litter. The surface layer is very dark cobbly sandy loam about 4 inches thick. The subsoil is dark brown very gravelly loamy sand and dark yellowish brown, gravelly, sand about 23 inches thick. The substratum is olive brown, stratified, very gravelly sand to a depth of 60 inches or more.

*HoA - Hoosic gravelly loam, nearly level*

*HoB - Hoosic gravelly loam, undulating*

The Hoosic series consists of very deep, somewhat excessively drained soils formed in glacial outwash. They are nearly level to undulating on outwash plains, terraces, kames, eskers, and moraines. The soils formed in water-sorted sandy and gravelly material contain varying proportions of sandstone, shale, phyllite and slate. Slope ranges from 0 to 60 percent. Bedrock is deeper than 60 inches.

*HpC- Hinckley-Plainfield complex, sloping*

*HpE- Hinckley-Plainfield complex, steep*

This unit consists of deep, excessively drained sandy and gravelly soils in sloping areas on outwash plains and steep areas of terraces and benches in upland valleys. It is about 45 percent Hinckley soils, 35 percent Plainfield soils and 20 percent other soils. Areas of these soils are mostly oval to rectangular and 10 to 50 acres. Hinckley and Plainfield soils are in such an intricate pattern on the landscape that they could not be separated at the scale selected for mapping. Slope ranges from 3 to 15 percent.

The surface layer of the Hinckley soil in this complex are typically covered with a thin layer of undecomposed leaf litter. The surface layer is very dark cobbly, sandy loam about 4 inches thick. The subsoil is dark brown very gravelly, loamy sand and dark yellowish brown, gravelly sand about 23 inches thick. The substratum is olive brown, stratified, very gravelly sand to a depth of 60 inches or more.

In areas of Plainfield soils, the surface layer is also covered with a thin layer of undecomposed leaf litter. The surface layer is very dark, grayish brown, loamy sand about 10 inches thick. The subsoil is about 15 inches thick. In the upper part it is yellowish brown sand, and in the lower part it is light olive brown sand. The substratum is light brownish gray sand to a depth of 60 inches or more.

*LyA- Lyme very stony fine sandy loam, nearly level*

This is a nearly level to gently sloping, deep, poorly drained soil in low-lying areas and along small drainage ways on uplands. Slope ranges from 0 to 8 percent, but are dominantly 0 to 3 percent. Permeability is moderate or moderately rapid. The water table is at or near the surface for 7 to 9 months in most years.

Typically, the surface layer is covered with a layer of decomposed leaf litter. The surface layer is black fine sandy loam 8 inches thick. The subsoil is mottled and about 17 inches thick. In the upper part it is dark grayish brown fine sandy loam, in the middle it is dark yellowish brown, fine sandy loam, and in the lower part it is dark grayish brown, sandy loam to a depth of 60 inches or more.

*Ms - Massena silt loam*

Very deep and deep, nearly level, somewhat poorly drained and poorly drained, low- lime, loamy soil formed in glacial till. They are nearly level to strongly sloping soils that formed in glacial till dominated by siliceous rock with some limestone. The available water capacity is moderate. Permeability is moderately slow to slow. Potentially highly erodible land. Potential hydric inclusions.

*Mu - Middlebury fine sandy loam*

This is a nearly level, deep, moderately well drained and somewhat poorly drained soil on flood plains in valleys. Slope ranges from 0 to 3 percent.

The surface layer is typically very dark grayish brown, fine sandy loam about 10 inches thick. The subsoil is a brown and mottled, olive brown, fine sandy loam about 30 inches thick. The substratum is mottled, dark yellowish brown, fine sandy loam to a depth of 60 inches or more.

*OaB - Oakville loamy fine sand, 3 to 8 % slopes*

*OaC - Oakville loamy fine sand, 8 to 15 % slopes*

This is a sloping, deep, well drained soil on outwash plains and on dissected side slopes and knolls on outwash plains. The surface layer is dark brown loamy fine sand about 8 inches thick. The subsoil is yellowish brown and light olive brown, sand about 19 inches thick. The substratum is light olive brown and dark grayish brown sand to a depth of 60 inches or more.

*OeE - Oakville and Windsor soils*

Deep, steep, well to excessively drained, low lime, sandy soil formed in outwash. The available water capacity is very low. Permeability is rapid. Highly erodible land.

The Oakville series consists of very deep, excessively drained soils formed in sandy eolian deposits on dunes and beach ridges on outwash plains, lake plains, and moraines. Slopes

range from 0 to 60 percent. The depth to the base of soil development ranges from 18 to 65 inches. These soils have a regular decrease in organic matter with increasing depth. Well drained. The potential for surface runoff is negligible to low. Permeability is rapid. Some areas are rarely flooded on low stream terraces.

The Windsor series consists of very deep, excessively drained soils formed in sandy glacial outwash. They are nearly level to very steep soils on glaciofluvial landforms. Slope ranges from 0 to 60 percent. Permeability is rapid or very rapid throughout. Excessively drained. Surface runoff is slow to medium.

*Pm - Palms muck*

A deep, nearly level, very poorly drained, medium to high lime, organic soil formed in waterlogged bogs. Organic material is 16 to 51 inches thick over mineral soil material in closed depressions on moraines, lake plains, till plains, outwash plains, hillside seep areas, and in back swamps of floodplains. The available water capacity is high. Hydric. They have moderately slow to moderately rapid permeability in the organic material and moderate or moderately slow permeability in the loamy material. Slopes range from 0 to 6 percent. Depth to the seasonal high water table ranges from 1 foot above the surface to 1 foot below the surface from November to May.

*PoE - Plainfield and Oakville soils, steep*

This consists of deep, excessively drained and well drained soils on side slopes of benches and terraces. The map unit consists of approximately 40 percent Plainfield soils, 35 percent Oakville soils, and 25 percent other soils. Slope ranges from 15 to 35 percent.

The surface layer of the Plainfield soils is dark grayish brown, loamy sand about 10 inches thick. The subsoil is yellowish brown and light olive brown, sand about 15 inches thick. The substratum is light brownish gray, sand to a depth of 60 inches or more.

The surface layer of the Oakville soils is dark brown, loamy fine sand about 8 inches thick. The subsoil is yellowish brown and light olive brown, sand about 19 inches thick. The substratum is light olive brown and dark grayish brown, sand to a depth of 60 inches or more.

*Pv - Pits, sand and gravel*

Soils in this map unit consist of very gravelly, loamy sands in areas of 0 to 15 % slopes. These soils are deep, well to excessively drained sands and gravels. These soils have high hydraulic conductivity and low water holding capacity. The depth to the water table is more than 6 ft. These soils have severe limitations that make them unsuited to cultivation and restrict their use for grazing.

*Ro - Rock outcrop*

This consists of large areas of rock outcrops on landscapes that range from nearly level mountain tops to very steep mountain sides and hillsides on uplands. It is about 90 percent areas of rock outcrops and 10 percent soils. Some places have nearly vertical ledges and cliffs, and thus the surface configuration commonly differs within short distances. Slope ranges from 0 to 65 percent.

*Sa - Scarboro mucky loamy sand*

The Scarboro series consists of very deep, very poorly drained soils in sandy glaciofluvial deposits on outwash plains, deltas, and terraces. They are nearly level soils in depressions. Slope ranges from 0 to 3 percent. Permeability is rapid or very rapid. Surface runoff is negligible. The water table is at or near the surface for 6 to 12 months of the year, and many areas are ponded for short periods.

*TNC - Tunbridge-Lyman complex, strongly sloping, very rocky*

*TNE - Tunbridge-Lyman complex, steep, very rocky*

Shallow, 3-15 percent slopes, somewhat excessively drained, loamy soil formed in till. The available water capacity is moderate. Permeability is moderately rapid.

The Tunbridge series consists of moderately deep, well drained soils on glaciated uplands. They formed in loamy glacial till. Permeability is moderate or moderately rapid. Slope ranges from 0 to 75 percent. The soil occurs on mountain side slopes, mountain tops, mountain ridges, hill tops, and hill slopes. The soil was formed in loamy glacial till of the Wisconsin age derived mainly from micaceous schist, gneiss, and phyllite. The depth to bedrock ranges from 20 to 40 inches.

The Lyman series consists of shallow, somewhat excessively drained soils formed in glacial till. They are on rocky hills, mountains and high plateaus. The soils developed in a thin mantle of glacial till and frost fractured rock fragments derived principally from gray, greenish gray, or nearly black mica schist rocks with lesser amounts of phyllite, granite and gneiss. Permeability is moderately rapid. Slope ranges from 3 to 80 percent. Depth to bedrock ranges from 10 to 20 inches.

*To - Tioga fine sandy loam*

This is a nearly level, deep, well drained soil on flood plains along major streams. Slope ranges from 0 to 3 percent. Tioga soils formed in recent alluvium, mainly from areas of sandstone, siltstone and shale. The potential for surface runoff is negligible to low.

*Ud- Udorthents, smoothed*

This map unit consists of areas that were excavated or filed with material derived from sandy, gravelly, or loamy soils. The material from most areas that were excavated was used as road fill in the construction of the Adirondack Northway. Other areas consist of filled or leveled areas used for parking lots, recreation areas, sanitary landfills, and for other similar uses. These areas have small pits that were the source for this material. Slope ranges from 0 to 15 %.

Many areas of Udorthents, smoothed have been covered with topsoil and seeded. Other areas have been smoothed, graded and left bare. Some areas are droughty because available water capacity is very low. Permeability ranges from moderate to very rapid. Topsoil and fertilizer are needed to establish a plant cover in bare areas.

*Wa- Wareham loamy sand*

This is a nearly level deep, poorly and somewhat poorly drained soil in depressions on sandy plains and on low benches in valleys. Slope ranges from 0-8 percent. Permeability is rapid. Wareham soils occur in outwash plains, deltas and stream terraces in areas that receive run-on water. The soils formed in sandy glaciofluvial materials derived from granite and gneiss.

*WnA - Windsor loamy sand, nearly level*

*WnB - Windsor loamy sand, undulating, 3 to 8 % slopes*

*WnC - Windsor loamy sand, rolling*

*WnD - Windsor loamy sand, hilly*

The Windsor series consists of very deep, well to excessively drained soils formed in sandy glacial outwash. They are nearly level to very steep soils on glaciofluvial landforms. Slope ranges from 0 to 60 percent. Permeability is rapid or very rapid throughout. The available water capacity is low. Thickness of the solum ranges from 10 to 36 inches. Potentially highly erodible land. Surface runoff is slow to medium.

Included with this soil in mapping are small areas of moderately well drained Deerfield soils, and well drained, fine sandy Oakville soils. Also included are areas of gravelly Hinckley soils. Included areas are up to 5 acres and make up about 30 % of the map unit.

*WoC - Woodstock-Rock outcrop complex, sloping*

*WoE - Woodstock-Rock outcrop complex, steep*

This map unit consists of shallow, somewhat excessively drained or excessively drained Woodstock soils and areas of rock outcrop in bedrock-controlled areas on hillsides, hill crests, and mountaintops. It is about 50-55% percent Woodstock soil, 20 -30 % rock outcrop, and 20 to 25 % other soils. The Woodstock soil and areas of rock outcrop are in such an intricate pattern on the landscape that they could not be separated at the scale selected for mapping. Slope ranges from 15 to 45 % but is dominantly more than 20 %.

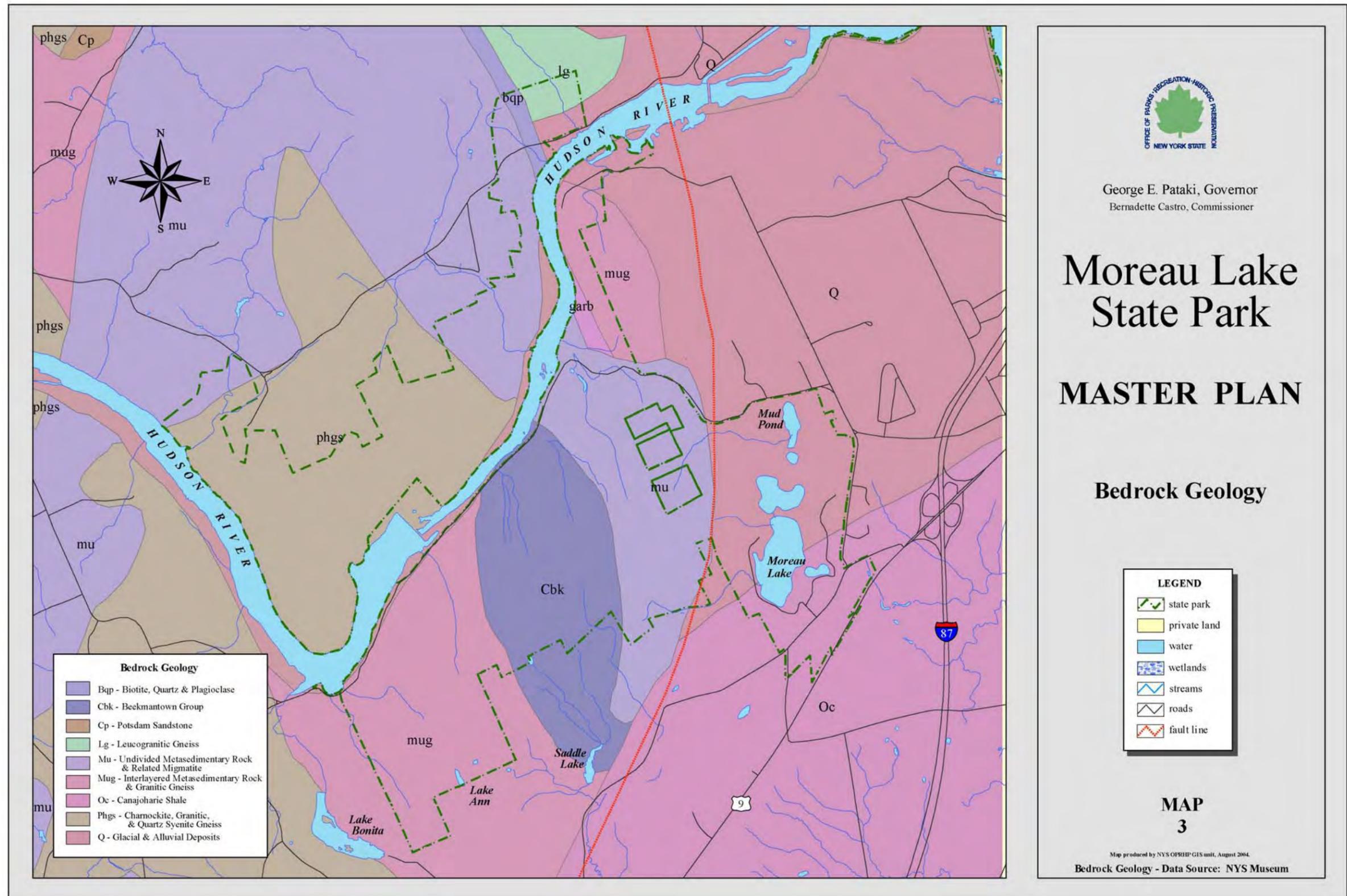
Typically the surface layer of the Woodstock soil is very dark grayish brown fine sandy loam about 2 inches thick. The subsoil is dark yellowish brown and yellowish brown, fine, sandy loam about 16 inches thick. Granite bedrock is at a depth of 18 inches.

Rock outcrop consists of exposures, faces, and ledges of shist, gniess or granite bedrock.

Included with this unit in mapping are some large areas of shallow soils less than 10 inches deep. Also included, in places, are areas of the deep Bice, Stowe, Hermon and Marlow soils. Also included are areas of Schroon, Peru, and Lyme soils in low areas and along drainageways and small areas of stone rubble accumulated at the base of many slopes. Areas of included soils are as much as 10 acres and make up 20 % of the map unit.

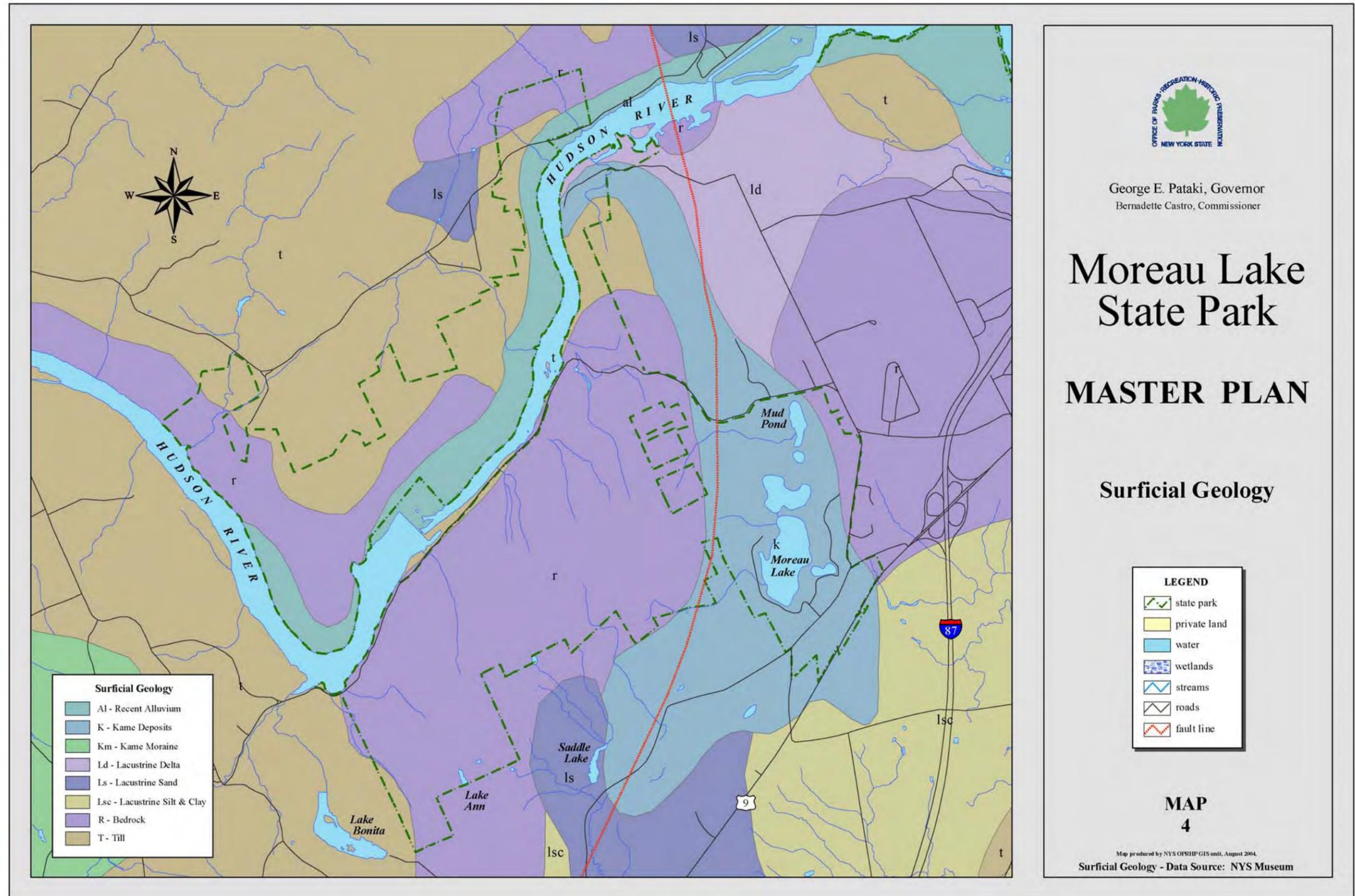


Map 3 – Bedrock Geology



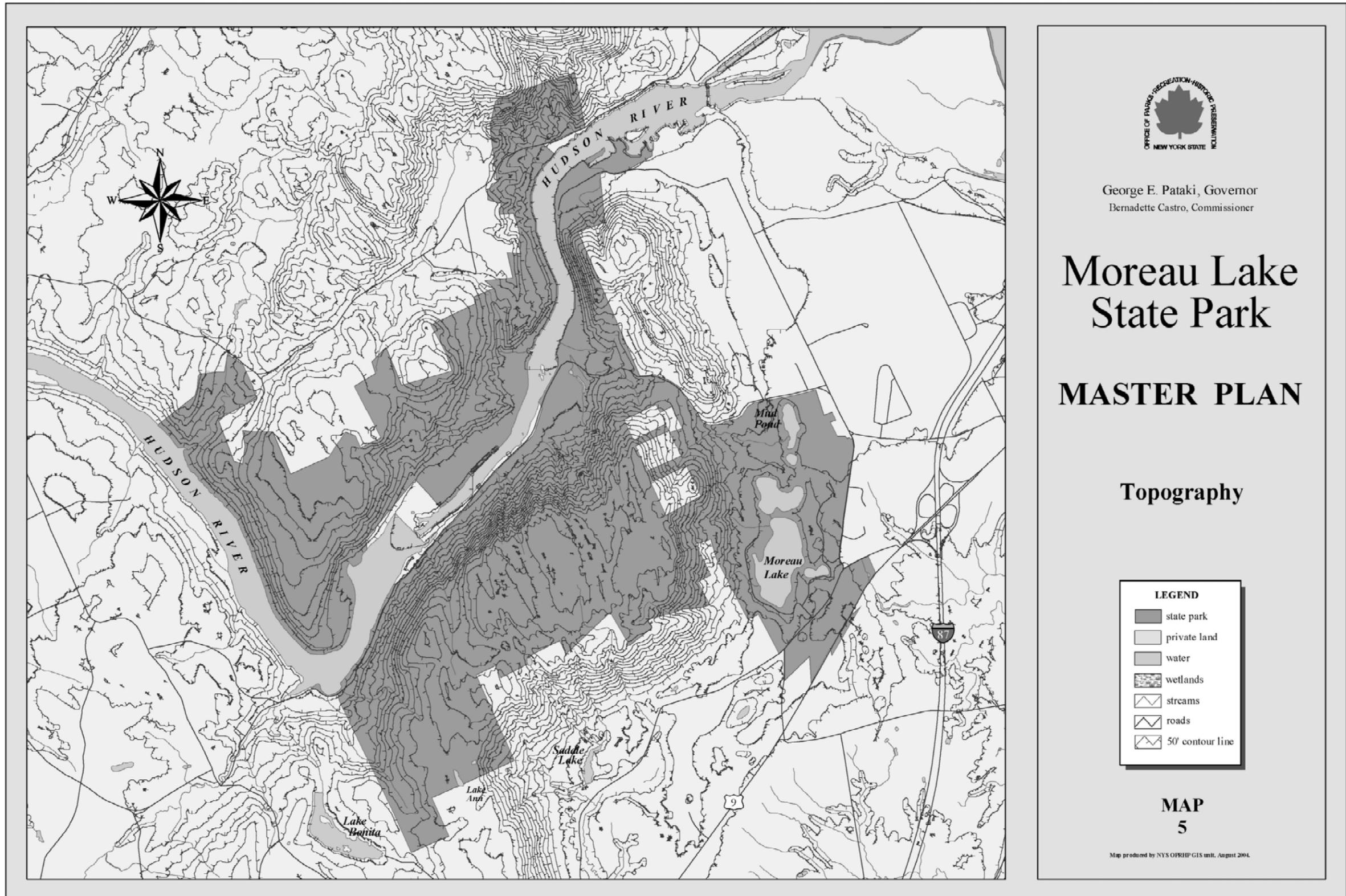
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Map 4 – Surficial Geology



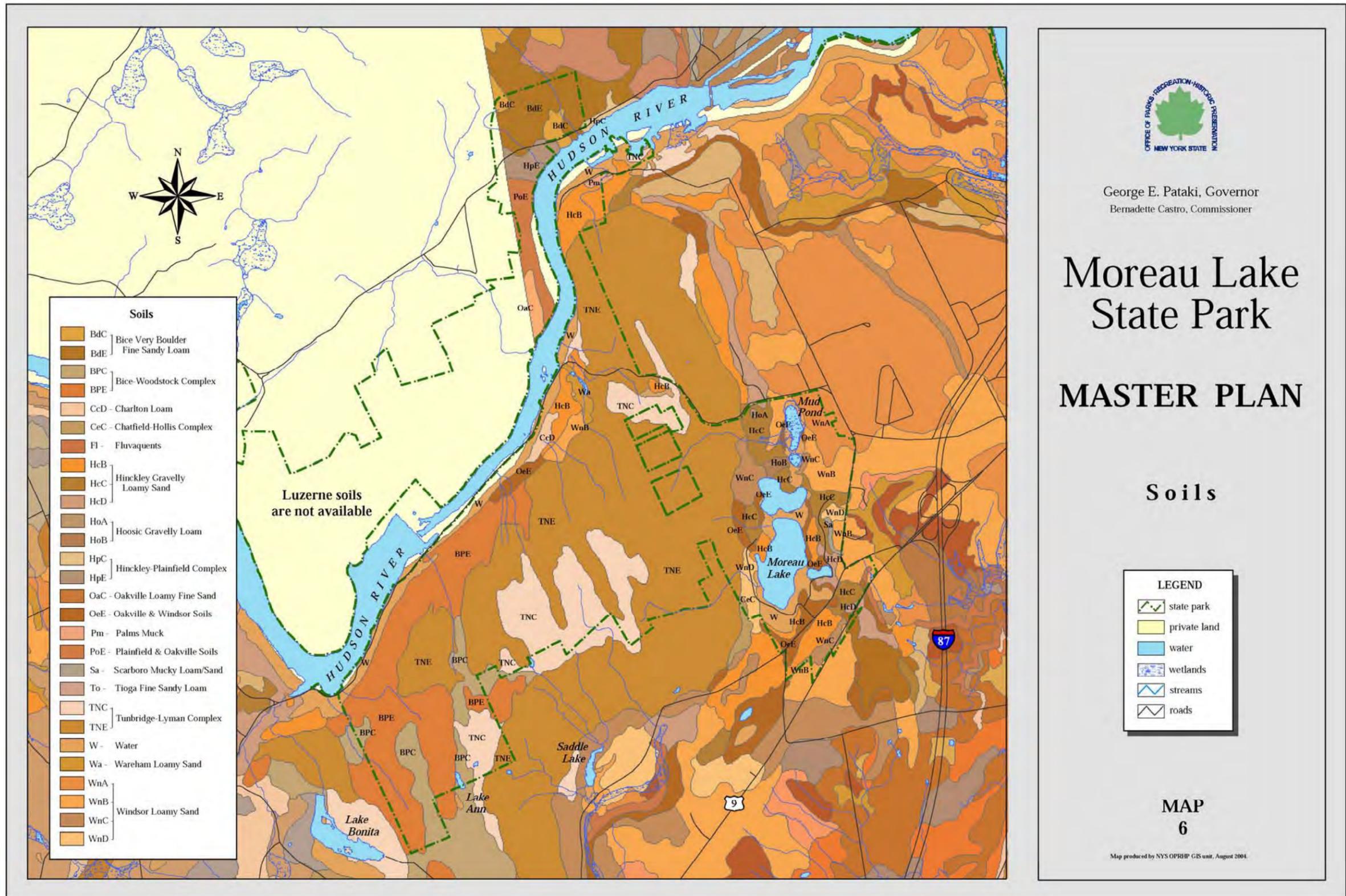
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Map 5 - Topography



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Map 6 – Soils



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## Water Resources

The main drainage patterns within the park were established after the retreat of the glaciers during the Wisconsin Stage. Situated in the Hudson River Watershed, drainage through the region is generally towards the Hudson River. However, within the area surrounding Moreau Lake, surface flows tend to be easterly and westerly converging at Moreau Lake; all ancillary drainage empties into the lake or its associated impoundments. Three streams, including the Mill Creek, are located in the Moreau Lake watershed and channel the overland flows from the Palmertown Range into the lake. In addition, at least seven small, intermittent streams can be discerned. Two creeks in the eastern section of the park flow in a general southeasterly direction, crossing Mountain Road.

### Lake Ann

Lake Ann, located in the southwest corner of the park, is a small, bog-like lake approximately one acre in size. Lake Ann was identified by the Natural Heritage Program report as a bog lake community. Bog lakes are typically low in all types of aquatic organisms, including fish. Many bog lakes have no fish at all most likely due to the highly acidic water (Reschke, 1990). Water samples and sites visits to Lake Ann indicate that the lake is very acidic (pH 4.3) and has brown stained water that is low in nutrients and oxygen. A floating mat of vegetation that contains black humus rims the lake. Although peat mosses (*Sphagnum* spp) are most prevalent, many other bog plants can be found at Lake Ann. It is currently not accessible to the public from park trails. It is not used for water supplies or for recreational purposes.

### Moreau Lake

Moreau Lake has a surface area of 128 acres with 3.6 miles of shoreline, a mean depth of 32 feet and a maximum depth of 50 feet. Its watershed area totals 469 acres. The water level of the lake fluctuates naturally and is dependent on weather conditions. The lake receives water by direct precipitation, surface runoff and underground flow; it loses water by evaporation, transpiration, surface overflow and subsurface outflow. There is an outlet control structure at the south end of the lake that controls overflow and protects adjacent property within the floodplain of Moreau Lake.

The 2002 Citizen's Statewide Lake Assessment Program (CSLAP) report for Moreau Lake State Park indicates the average readings as follows:

Phosphorus (ml/l)	0.006
Chlorophyll a (mg/l)	1.46
Secchi Disk Clarity (m)	8.11
pH	7.65
Conductivity	123
Color	4.0
Nitrate	0.01

CSLAP has classified Moreau Lake as an oligotrophic lake, one with a low accumulation of nutrients and high clarity. None of the primary statistics noted since 1985 have indicated a trend toward eutrophication. Moreau Lake's pH is adequate to support most aquatic organisms; the water remains relatively soft and weakly colored. The water quality conditions

continue to be stable, with little change and are considered to be generally good to excellent and are highly favorable for fish and other aquatic organisms.

The report "Rare Species and Ecological Communities of Moreau Lake State Park" produced in March 2000 by the NY Natural Heritage Program identified Moreau Lake as being a eutrophic dimictic lake. This classification was not made through water quality testing as the CSLAP report was, but rather through observation and delineation from aerial photography. Map 9 shows the ecological community analysis done by the NY Natural Heritage Program.

In 1990, the DEC Region 5, Inland Fisheries department tested for chemical contaminants in fish fillets taken from Moreau Lake and the concentrations of the chemicals tested were found to be very low.

### **Hudson River**

Moreau Lake State Park includes seven miles of shoreline property along the Hudson River. Included in this reach of river are the Spier Falls and Sherman Island hydroelectric dams. The Hudson River has been designated an American Heritage River by the Federal Government.

Generally the water quality of this section of the Upper Hudson is rated "good", despite a few significant water quality issues. Chemical pollution of the Hudson River and its fish is of special concern. The most serious water quality problem is PCB contamination of the bottom sediment below Hudson Falls and Fort Edward. The NYS Department of Health's (DOH) 2002-2003 Health Advisories for Sportfish and Game recommends the following for the area of Moreau Lake State Park. Eat no more than one meal per month of Smallmouth Bass over 14 inches in the reach of the river from the Corinth Dam to the dam at the Route 9 Bridge in South Glens Falls. This advisory is due to Mercury contamination. Also, there is an advisory to consume no more than one meal per month of Carp of any size caught between the Sherman Island Dam downstream to the Feeder Dam in South Glens Falls due to PCB contamination. This advisory was initiated in 1995 because of PCB contamination associated with a hazardous waste disposal site.

There is no consumption advisory for the Sherman Island or the Spier Falls impoundment due to PCB contamination even though a PCB remediation site is located within the Sherman Island impoundment. The following information is taken from DEC's website and explains the conditions of the PCB remediation site.

"This site is on property owned by Niagara Mohawk located along the Hudson River. The property was leased for use as seasonal residences. The site is approximately 0.8 miles upstream from the Queensbury Water Treatment Plant. An area adjacent to one of the seasonal residences (which has been removed) is near the river and is terraced. An area of soil was contaminated either by dumping of 37,737 ppm on the river bank and 86.5 on the river bottom adjacent to the shore. Niagara Mohawk completed a pair of Interim Remedial Measures at the site involving the removal and proper disposal of contaminated soil from areas with high PCB levels. The responsible party has completed a Remedial Investigation/Feasibility Study under the terms of a Consent Order. A Record of Decision was issued in March 1995 and divided the site into two Operable Units (OP UNIT 1 and OP UNIT 2). OP UNIT 1 addressed the dry portion of the site including the near-shore sediment that was exposed by lowering the Hudson river a total of four

feet. The removal of contaminated soil and exposed contaminated sediment associated with this operable unit are complete. OP UNIT 2 addresses the rest of the contaminated sediment. A supplemental Feasibility Study under this operable unit is underway.

River bottom sediments contaminated with PCB's remain in a localized area adjacent to the site. The intake at the Town of Queensbury public water supply is downstream and the water supply is monitored quarterly. No PCBs have been detected. An annual fish sampling program starting in 1995 shows a decrease of PCB levels in fish. There is no longer a special advisory against consumption of fish from the Sherman Island Pool. The need for future advisories will be evaluated based on results of ongoing monitoring. Remedial options to address PCB contaminated sediments area being evaluated.

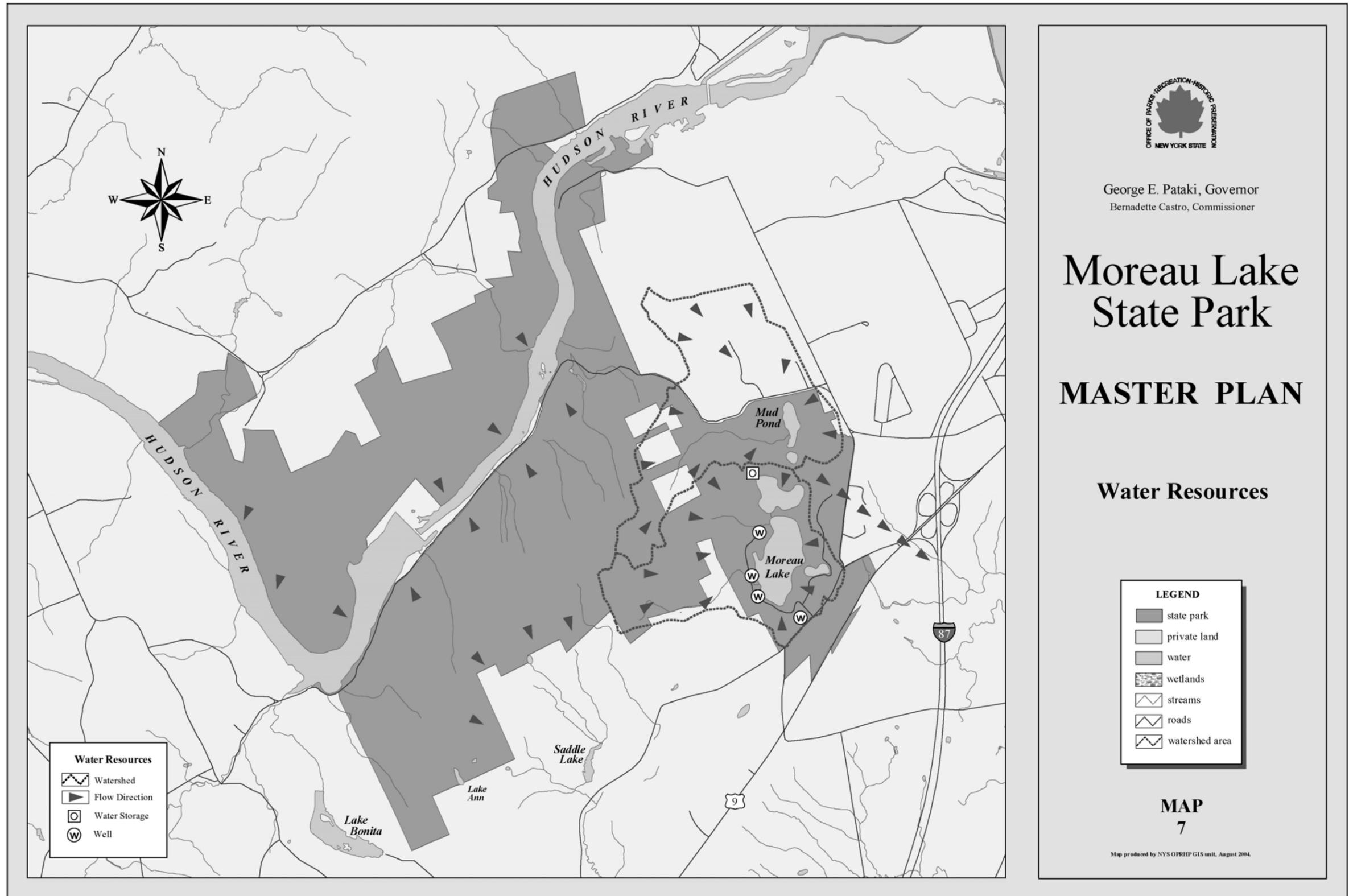
Based upon this information, OPRHP has concluded that this site does not pose a threat to recreational use of this section of the river. In addition, OPRHP will continue to consult with DEC on the progress of the remediation.

DEC's "Rotating Intensive Basin Studies" (RIBS) testing of the Upper Hudson River does not test in the immediate vicinity of Moreau Lake State Park. However, a site located up stream from the park in the Town of Corinth, was tested during 1993-94. The results of this test show that the water quality has improved substantially since 1972, based on higher species diversity. This site is currently rated as "fair" due to slight impacts to the macroinvertebrate community and a fair fishery assessment. There are some indicators of "good" water quality, including the existence of relatively few parameters of concern in the water column. Testing showed elevated levels of calcium, copper and lead to be of concern, however, further analysis demonstrated no evidence of significant toxicity.

The next closest testing site is located in the Village of Waterford, downstream from the park and the industrial sites in Glens Falls, Hudson Falls and Fort Edward. The water quality of this area is rated as "poor" due to the number of parameters of concern in the water column, bottom sediment and macroinvertebrate tissue. The fishing ban in the area from Hudson Falls to the Troy Dam was lifted in 1995 and catch-and-release fishing is now allowed. A consumption advisory from DOH is still in effect in this stretch of river, recommending that no fish of any species be consumed.

The stretch of river within the park's boundaries has a best use designation of a Class B stream, indicating that the river water can be used for primary and secondary contact recreation and fishing.





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## Air

The air quality in Saratoga and Warren Counties is considered to be in attainment of meeting all of the air quality requirements. All of the measured pollutant levels were significantly lower than those required by the National Ambient Air Quality Standard, and fall under the Pollutant Standards Index category of having "good" health effects.

## Biological Resources

### Flora

The following information is taken from a report done by New York State's Natural Heritage Program entitled "Rare Species and Ecological Communities of Moreau Lake State Park" (Evans, 2000). Eighteen distinct natural community types were identified within Moreau Lake State Park. Map 8 shows the location and extent of each of the community types which are listed in Table 2.9 below along with the acreage of each community:

<b>System</b>	<b>Subsystem</b>	<b>Community Type</b>	<b>Acres</b>
Terrestrial	Forested Uplands	Appalachian oak-pine forest	653
		Beech-maple mesic forest	1024
		Beech-maple mesic forest (successional)	22
		Chestnut oak forest	11
		<b>Hemlock northern hardwood forest</b>	2254
	Successional northern hardwoods	9	
	Barrens and Woodlands	<b>Calcareous talus slope woodland</b>	30
	Open Uplands	Successional old field	9
Palustrine	Forested Mineral Soil Wetland	Hemlock-hardwood swamp	35
		Red Maple-hardwood swamp	2
		Vernal pool	<1
	Open Mineral Soil Wetland	Deep emergent marsh	1
		Shrub swamp	5
	Open Peatland	Highbush blueberry bog thicket	3
Lacustrine	Natural Lakes and Ponds	Bog lake/Dwarf shrub bog	1
		Eutrophic dimictic lake	142
		Eutrophic pond	5
Riverine	Natural Streams	Intermittent stream	
Terrestrial Cultural		Developed (campgrounds, parking areas, picnic grounds, etc.)	32

*Note: Acreage figures add up to more than the total park acreage because the NHP maps communities to their extent, which means that community acreage includes areas that extend beyond park boundaries.*

Complete descriptions of all communities listed can be found in Reschke (1990). A total of 32 acres of disturbed land are typed as "developed". Disturbed and/or artificially maintained areas are, from an ecological standpoint, considered functionally similar and were thus all labeled as "developed". These areas include all major roads, power lines, pipelines and gravel mines that fall within the boundary of the park, as well as any residential areas and maintained recreation areas.

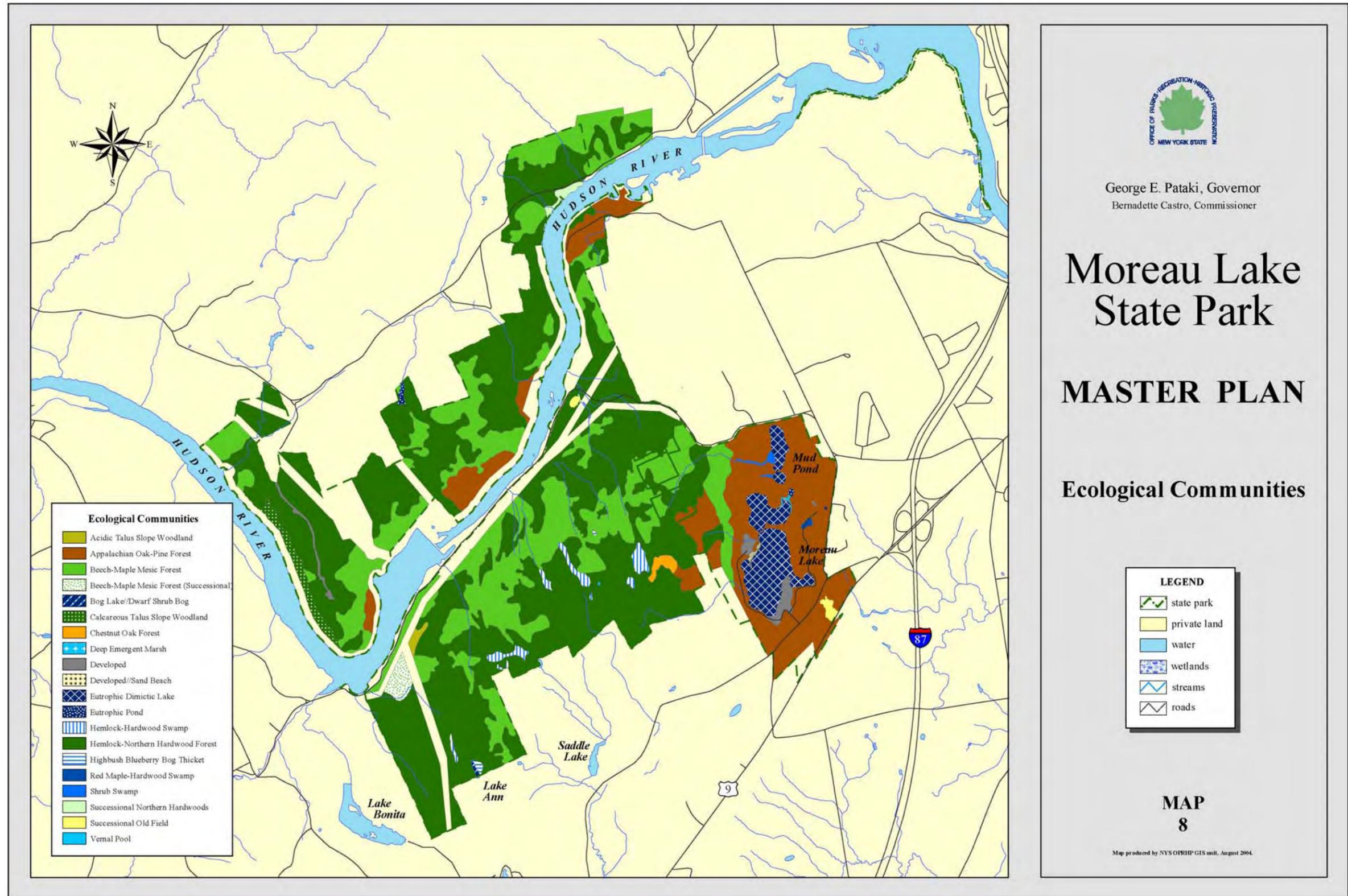
Large stands of hemlock-northern hardwood forest and associated beech-maple mesic forests dominate the landscape of the park. Although portions of the hemlock-northern hardwood community have been previously logged, signs of recent logging were limited to the western side of the park in proximity to the power line. This logging took place prior to

OPRHP ownership. Because these communities occupy ravines, some of the rockiest slopes and mountaintops, the generally rugged nature of the hemlock forests makes them difficult to log with any efficiency. Therefore, even those that have been logged received only light selective cutting, limited to the most readily accessible areas. Some areas have apparently not been disturbed since the area was first settled and now support stands of mature hemlock-northern hardwood forest. These mature forests display many characteristics of old growth forest, including extensive wind throw gaps, a variety of age classes and coarse woody debris classes, pit-and-mound topography and scattered, impressively large trees. These occur on the steep slopes of the western bank of the Hudson River.

The beech-maple mesic forest within the area has been extensively logged, some of it just a few years before OPRHP took ownership. Beech-maple communities are situated on hilltops, hillsides and mountaintops on moist, generally deeper, well-drained soils. A portion of the beech-maple mesic forest on the western side of the park, which was logged, now essentially lacks an overstory component of maple and supports heavy beech regeneration. This portion of the community is represented in the community delineation as successional beech-maple mesic forest and assumes that, overtime sugar maple recruitment will occur. Although many have been selectively logged, all other areas of beech-maple maintain the overstory, understory and ground cover components of a beech-maple mesic forest as defined by Reschke, (1990).

Other, less abundant, forest communities in the park include Appalachian oak-pine forest, chestnut oak forest, successional northern hardwoods, acidic talus slope woodland, hemlock-hardwood swamp and red maple hardwood swamp. Several nice examples of wetland community types were also observed on park land. Occurring in small patches of less than 5 acres, the dominant forested wetland of the park is hemlock-hardwood swamp. These communities typically occur in bedrock depressions at high elevations and are characterized by mounds of sphagnum interspersed with pockets of black, partially decomposed muck which grades into a black, fine, sandy loam at depths of around 15 to 20 centimeters. Other wetland types within in the park include the marshes and shrub swamps associated with Moreau Lake and vicinity. Small examples of the common deep emergent marsh and shrub swamp communities are part of the system of lakes and ponds around Moreau Lake. A less common wetland community complex consisting of the bog lake known as Lake Anne, a small dwarf shrub bog and a 3-acre highbush blueberry bog thicket was also found within the park.

Map 8 – Ecological Communities



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## Fauna

### Fish

According to the DEC Bureau of Fisheries, database, several common game fish species such as brown bullhead, chain pickerel, large and smallmouth bass, rainbow trout, and yellow perch can be found in Moreau Lake and Pond. Other non-game fish include golden shiner, pumpkinseed and white sucker. Moreau Lake is stocked each spring with trout species from Fernwood Fish Hatchery by Saratoga County. Bennie Brook may contain brook trout and brown trout. The section of the Hudson River within the park contains brook and brown trout, brown bullhead, rock and smallmouth bass, yellow perch and walleye. Non-game fish identified in this section of the Hudson River include central mudminnow, carp, common shiner, blacknose dace, creek chub, fallfish, white sucker, brook stickleback, pumpkinseed and slimy sculpin.

### Birds

No formal surveys of the park property have been conducted for the purpose of identifying or inventorying the bird life of the park. Park staff did conduct a mid-winter survey for Bald Eagles along the Hudson River during the winter of 2004-2005. The New York Breeding Bird Atlas, a joint project of the New York State Ornithological Association, DEC and Cornell University, surveyed the entire state in 1980-85. An update of the Breeding Bird Atlas (Atlas 2000), begun in 2000, is currently in progress. Moreau Lake State Park is represented by survey Block numbers 5978A, 5978B, 5978D, 5979D and 6078A. Appendix A contains the species lists from the Atlas 2000 project.

In 1998, the "Friends of Moreau Lake" produced a birding checklist which consists of birds seen in or near Moreau Lake State Park. This list also gives an indication of how common sightings are and which season sightings are most likely to occur. This list is also presented in Appendix A.

### Other Fauna

Although no field studies regarding animal populations have been conducted on the park, comparative studies based on similar ecosystems have generated a list of animals that have the potential to occur within Moreau Lake State Park. This list is presented in Appendix B.

## Rare, Threatened and Endangered Species and Significant Communities

### Significant Communities

Two significant natural communities exist within the park. These are two large occurrences of hemlock-northern hardwood forest (separated by the Hudson River) and one occurrence of calcareous talus slope woodland.

In the park, the calcareous talus slope woodland community lies on a steep west-facing slope on the north side of the Hudson River. This community occurs in a mature beech-maple mesic forest, unbisected by roads or other types of corridors. Blocky talus in the area ranges from <10 cm to <100 cm in size and occurs at 70-100 percent cover along the slope. Plant species occurring in this particular community are listed in Table 2.10.

The two occurrences of hemlock-northern hardwood forest lie on each side of the Hudson River. The occurrence on the north side of the Hudson River lines the bank of the River and contains several intermittent streams that run off the east and south-facing slopes in to the Hudson. A wetland complex of moderate size associated with Beaverdam Brook forms the western boundary of the community and the Hudson River and residential areas of West Glens Falls line the eastern edge. The occurrence on the south side of the river covers mid-high levels of the Palmertown Mountain Range. It lines intermittent streams that run off the northwest- and southeast-facing slopes of the mountain range. Several small hemlock-hardwood swamps, highbush blueberry bog thickets and vernal pools occur in shallow depressions across the higher elevations of this occurrence. The plant species found in this community type are listed in Table 2.11.

### **Rare Plants**

Natural Heritage Program records show no known occurrences of rare plants within Moreau Lake State Park. This is not to mean that rare plants are not located within the park, it only signifies that the Natural Heritage database does not include any within the park boundary. Comparative studies with similar ecosystems generated a list of rare plant species with the potential to occur within the park. These species are listed in Appendix C.

### **Rare, Threatened or Endangered Animals**

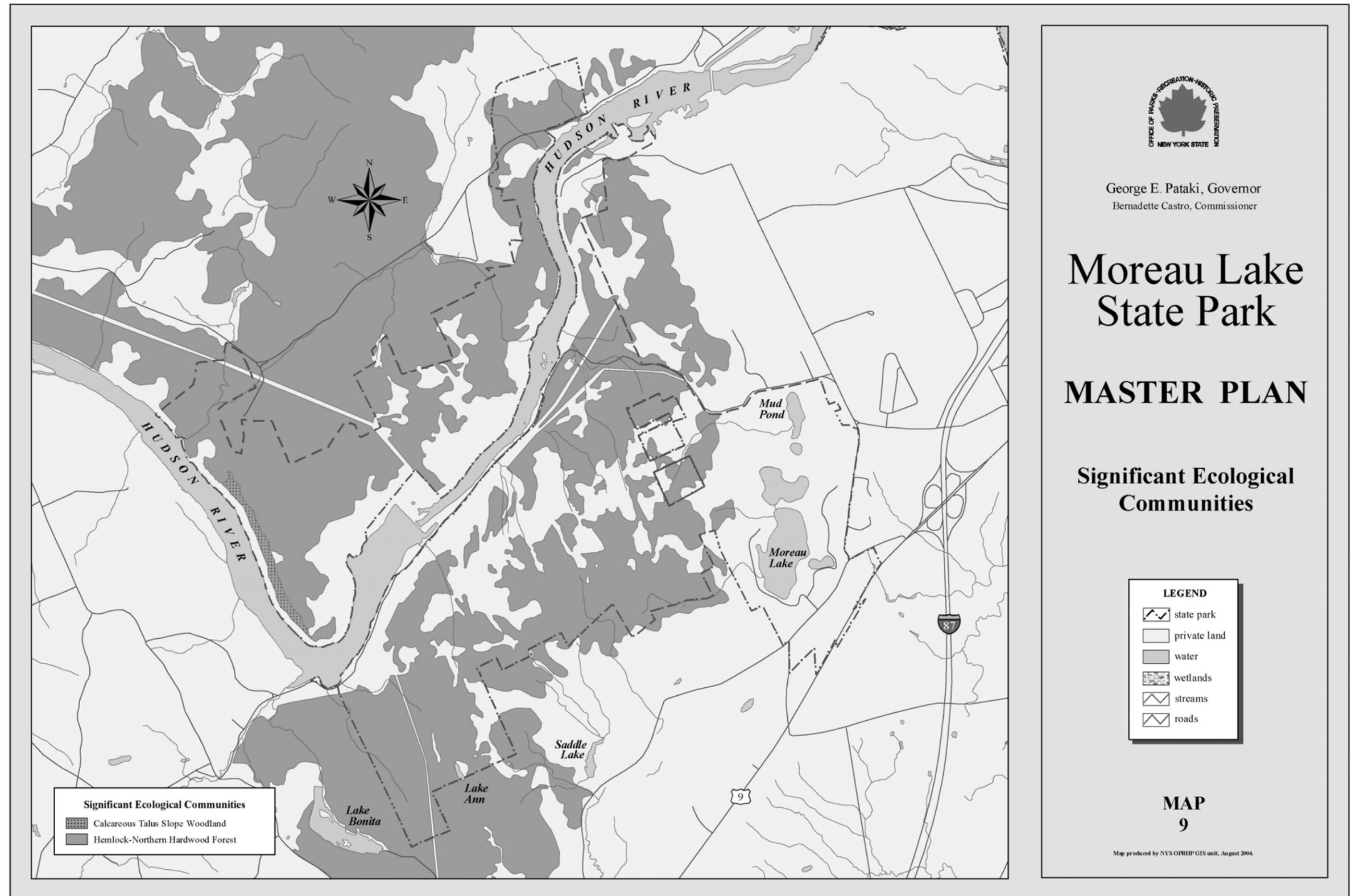
The Natural Heritage Program has no records of rare animals in Moreau Lake State Park, so field surveys for rare, threatened and endangered animals were conducted around wetlands and the Hudson River. These surveys identified two species of rare dragonflies. In July 1994, *Brachycercus maculatus*, part of a rare group of mayflies, was collected in the Northeast for the first time in the Hudson River at Corinth, NY. Moreau Lake State Park manages the shoreline property of the Hudson River near the collection site. Up until this point, *Brachycercus maculatus* has been thought to exist only in north-central Florida and parts of North Carolina.

Because of the park's proximity to existing populations of the Karner blue butterfly, an extremely rare species, habitats with the potential to support populations of this butterfly were identified and surveyed. No butterflies were observed in the park.

Breeding and migratory bird species that may occur in the park are identified in Appendix A. The park regularly supports NYS threatened Pied-billed Grebe and Bald Eagle, and special concern Common Loon, Osprey, Sharp-shinned Hawk, Cooper's Hawk, Common Nighthawk and Whip-poor-will.

Other comparative studies with similar ecosystems generated a list of rare, threatened endangered or species of special concern that have the potential to occur within Moreau Lake State Park. This list appears in Appendix C.

Map 9 – Significant Ecological Communities



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<b>Trees</b>	<b>Shrubs and Vines</b>	<b>Herbs</b>	<b>Non-vascular</b>
Sugar maple ( <i>Acer Saccarum*</i> )	Striped maple ( <i>Acer pensylvanicum*</i> )	Swamp Jack-in-the-Pulpit ( <i>Arisaema triphyllum</i> )	<i>Anomodon attenuatus*</i>
Yellow birch ( <i>Betula alleghaniensis*</i> )	Mountain maple ( <i>Acer spicatum</i> )	Wild Ginger ( <i>Asarum canadense</i> )	<i>Brachythecium sp.*</i>
American beech ( <i>Fagus grandifolia*</i> )	Round leaf dogwood ( <i>Cornus rugosa*</i> )	White wood aster ( <i>Aster divaricatus</i> )	<i>Mnium sp.</i>
White ash ( <i>Fraxinus americana</i> )	Witch hazel ( <i>Hamamelis virginiana</i> )	Silvery spleenwort ( <i>Athyrium thelypteroides</i> )	<i>Plagiothecium laetum</i>
Red oak ( <i>Quercus rubra</i> )	Virginia creeper ( <i>Parthenocissus quinquefolia*</i> )	Sedge ( <i>Carex rosea*</i> )	<i>Platydicta confervoides</i>
American basswood ( <i>Tilia americana</i> )	Maple-leaf viburnum ( <i>Viburnum acerifolium</i> )	Sedge ( <i>Carex plantaginea</i> )	<i>Thuidium recognitum</i>
	Gooseberry ( <i>Ribes cynobasti</i> )	Enchanter's nightshade ( <i>Circaea alpina</i> )	<i>Tortella tortuosa</i>
	Elder ( <i>Sambucus racemosa</i> )	Bulblet fern ( <i>Cystopteris bulbifera*</i> )	
		Marginal woodfern ( <i>Dryopteris marginalis*</i> )	
		Helleborine ( <i>Epipactis helleborine (EX)</i> )	
		White snakeroot ( <i>Eupatorium rugosum*</i> )	
		Fragrant bedstraw ( <i>Galium triflorum</i> )	
		Herb Robert ( <i>Geranium robertianum</i> )	
		Sensitive fern ( <i>Onoclea sensibilis</i> )	
		Christmas fern ( <i>Polystichum acrostichoides</i> )	
		False Solomon's seal ( <i>Smilacina racemosa</i> )	
		New York fern ( <i>Thelypteris noveboracensis</i> )	
		Foamflower ( <i>Tiarella cordifolia</i> )	
		Starflower ( <i>Viola rotundifolia</i> )	

Note: \* = Most abundant species, (EX) = exotic species.

**Table 2.10-Species List for Hemlock-northern Hardwood Forest in Moreau Lake State Park.**

Trees	Shrubs and Vines	Herbs	Non-vascular
Red maple ( <i>Acer rubrum</i> )	Striped maple ( <i>Acer pensylvanicum</i> *)	Maidenhair fern ( <i>Adiantum pedatum</i> )	<i>Leucobryum glaucum</i>
Sugar maple ( <i>Acer saccharum</i> *)	American hornbeam ( <i>Carpinus caroliniana</i> )	White sarsaparilla ( <i>Aralia nudicaulis</i> )	
Yellow birch ( <i>Betula alleghaniensis</i> )	Huckleberry ( <i>Gaylussacia baccata</i> )	Swamp Jack-in-the-Pulpit ( <i>Arisaema triphylum</i> )	
Paper birch ( <i>Betula papyrifera</i> )	Witch Hazel ( <i>Hamamelis virginiana</i> *)	White wood aster ( <i>Aster divaricatus</i> )	
American beech ( <i>Fagus grandifolia</i> *)	Spicebush ( <i>Lindera benzoin</i> )	Lady fern ( <i>Athyrium felix-femina</i> )	
White ash ( <i>Fraxinus americana</i> )	Virginia creeper ( <i>Parthenocissus quinquefolia</i> )	Sedge ( <i>Carex albursina</i> )	
American basswood ( <i>Tilia americana</i> )	Raspberry ( <i>Rubus strigosus</i> )	Sedge ( <i>Carex arctata</i> )	
Eastern hemlock ( <i>Tsuga canadensis</i> *)	Blueberry ( <i>Vaccinium angustifolium</i> )	Sedge ( <i>Carex pensylvanica</i> *)	
Eastern hophornbeam ( <i>Ostrya virginiana</i> )	Blueberry ( <i>Vaccinium pallidum</i> )	Spotted coralroot ( <i>Corallorhiza maculata</i> )	
Eastern white pine ( <i>Pinus strobus</i> )	Maple-leaf viburnum ( <i>Viburnum acerifolium</i> )	Evergreen woodfern ( <i>Dryopteris intermedia</i> *)	
Black cherry ( <i>Prunus serotina</i> )	Hobblebush ( <i>Viburnum alnifolium</i> )	Marginal woodfern ( <i>Dryopteris marginalis</i> )	
White oak ( <i>Quercus alba</i> )		Beech drops ( <i>Epifagus virginiana</i> )	
Chestnut oak ( <i>Quercus montana</i> )		Oak fern ( <i>Gymnocarpium dryopteris</i> )	
Red oak ( <i>Quercus rubra</i> *)		Club moss ( <i>Lycopodium digitatum</i> )	
		Tree club moss ( <i>Lycopodium obscurum</i> )	
		Canada mayflower ( <i>Maianthemum canadense</i> )	
		Indian Cucumber-root ( <i>Medeola virginiana</i> )	
		Partridgeberry ( <i>Mitchella repens</i> )	
		Fringed polygala ( <i>Polygala paucifolia</i> )	
		Solomon's seal ( <i>Polygonatum biflorum</i> )	
		Christmas fern ( <i>Polystichum acrostichoides</i> *)	
		Small-flowered crowfoot ( <i>Ranunculus allegheniensis</i> )	
		New York fern ( <i>Thelypteris noveboracensis</i> *)	
		Foamflower ( <i>Tiarella cordifolia</i> )	
		Starflower ( <i>Trientalis borealis</i> *)	

Note: \* = Most abundant species

## Wetlands

Several nice examples of wetland community types were also observed within the park. Occurring in small patches of less than 5 acres, the dominant forested wetland of the park is hemlock-hardwood swamp. These communities typically occur in bedrock depressions at high elevations and are characterized by mounds of sphagnum interspersed with pockets of black, partially decomposed muck which grades into a black, fine, sandy loam at depths of around 15 to 20 centimeters. Other wetland types within in the park include the marshes and shrub swamps associated with Moreau Lake and Mud Pond. Small examples of the common deep emergent marsh and shrub swamp communities are part of the system of lakes and ponds around Moreau Lake. The wetland complex to the north of Moreau Lake is mapped as DEC regulated wetland GA-1. It is a Class 2 wetland consisting of approximately 30 acres. A less common wetland community complex consisting of the bog lake known as Lake Anne, a small dwarf shrub bog and a 3-acre Highbush blueberry bog thicket was also found within the park.

## Cultural Resources

The following information was taken from three "Stage 1A and limited Stage 1B Cultural Resource Investigation" reports for Moreau Lake State Park. The first report was prepared by Collamer and Associates in 1992 and the second and third reports were prepared by Hartgen Archeological Associates in July and December of 2002. The study area of the 1992 report included the 900 acre area of the park before the 1998 acquisitions and a one mile radius around the park. This radius encompasses some of the newer portions of the park. The July 2002 report included the lands purchased in 1998 that are situated south of Spier Falls Road in the Towns of Moreau and Corinth. Historic information for the parcel north of the Hudson River, located in the Towns of Luzerne and Queensbury, was taken from the December 2002 report.

## Prehistoric Resources

The first human inhabitants of the Northeast most likely entered the area during the retreat of the glaciers of the late Wisconsin period. Paleo-Indians traveled in small bands following the migration of animals. Habitation sites consisted of open-air camps, procurement sites and kill sites. Two sites were identified in Saratoga County. Both are near the Hudson bend northeast of the park. In addition, there may be sites located along the Palmertown Range and the Luzerne Mountains within Moreau Lake State Park.

Similarly sites of the Snook Kill and Lamoka Phases of the Archaic Stage have been located at the "Big Bend" of the Hudson River. The Transitional Stage, a short period between the Late Archaic and Early Woodland Stages, has its roots in the Susquehanna drainage basin. Three sites located within 10 miles of the park are believed to be of the Transitional Stage. The Weir Site is situated along the Hudson River northeast of the park and the Snook Kill and the Henderson Sites are located southeast along the Hudson River.

During the Woodland Stage, more permanent settlements were established. A number of sites are located along the Hudson and Mohawk Rivers. In this area of the Upper Hudson River Valley the Indian trail known as the "Great Carry" was used as a portage from above the falls in Glens Falls to the Fort Edward area. The present day Route 9 generally follows this trail.

Other known Woodland Stage sites within the region of the park include a number of early camps or villages near the mill pond on the Snook Kill and a six acre site in Warren County near the "Big Bend" of the Hudson River. Two camp sites were identified in the Town of Moreau near the bend in the river.

The entire region surrounding the park is considered to be potentially sensitive for prehistoric sites because of the physiographic features and its natural resources. The Hudson River would have served as a main transportation corridor and the availability of resources such as outcrops, chert and limestone make the area conducive to procurement and habitation sites for native peoples. The topography is also believed to be preferable for use as occupation sites. The potential for the area of the park to have prehistoric sites and to have been used for hunting-gathering grounds is moderate to high.

## Historic Resources

The town of Moreau was established in 1805 after separating from Northumberland. Jean Victor Moreau, a French general, visited the area in 1804 and the community is named after him. Elijah Parks of Salisbury, Connecticut, purchased 800 acres in the area and built a dwelling at South Glens Falls. Several of his sons and in-laws further settled the area. The elder Parks may have constructed a saw mill prior to the Revolution on the Hudson River which was later burned by General Burgoyne. His son Daniel is said to have organized a militia which marched on Fort George and seized it in 1775 from the British. The elder Parks and some of his family were killed by a raiding party during the Revolution.

By the 1870s, four sawmills, a planing mill, box factory, and four lime kilns were all operating in the Town of Moreau. Paper manufacturing concerns and stone works, offering construction grade flagstone, marble and limestone were all in operation. Many industries were established that utilized the available water power and forest resources. Extensive logging for lumber and tanbark took place in the entire area through the 18<sup>th</sup> and 19<sup>th</sup> centuries. Papermaking and textile mills were also in operation.

The area around Moreau Lake was originally a summer home and estate developed by George W. McAdam, a wealthy attorney. The lands were acquired over a 20 year period beginning in 1881. From 1935 to 1940 the area began to develop as a seasonal campground. The natural lake, existing forests and topography offered a scenic area for swimming, camping and other recreational activities. By 1940, the area of the park had been developed with dirt access roads along the southwestern and southeastern areas around Moreau Lake. Between 1940 and 1949, cabins or residences were constructed along the shores of Moreau Lake. The lands were obtained by the New York State Conservation Department in 1961 and became the Moreau Lake State Park.

Settlement of the Town of Lake Luzerne centered on agriculture and timber harvesting. The Hudson River was used to float logs, in what is called a log drive, to sawmills downstream. Landowners in the area built their homes in the passes that transect the Luzerne Mountains. The "Trail to Jessups" roughly corresponds with the road that runs along the north bank of the Hudson River. At least a dozen residences were built along this road. The road has mostly reverted to trail and park access ends at the boundary for the Spier Falls Facility. Archeological remains of the homes along this road may exist.



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Construction of the Spier Falls Dam, which spans the Hudson River between the Town of Moreau and the Town of Lake Luzerne, began on June 20, 1900. The project was the brainchild of Glens Falls lawyer and businessman Eugene Ashley. At the time it was built, the Spier Falls Dam was the fourth largest dam in the world. Glens Falls Entrepreneur William E. Spier largely funded the project and for this reason the dam was named in his honor. Support structures associated with the construction of the dam may be located along the shores of the Hudson River within the park boundary.

Approximately one mile below the dam, a little community was built to accommodate the employees who labored at the construction of the "great enterprise". This community came to be known as Cottage Park. The Imperial Hotel, which is believed to have served visitors and dam construction managers, burned to the ground in 1930. The stone wall surrounding this settlement can still be seen today across from the boat launch on Spier Falls Road. Many of the workers also built homes for themselves in a communal fashion with family or other workers. Their village of small huts and gardens was located a little way below the dam on the Warren County side of the river.

Historical period resources may be represented by archeological remains of residences, abandoned logging camps or sawmill facilities within the mountainous terrain. Sawmill remains would most likely be found within proximity of the streams that cross local roads. Archeological features associated with the Spier Falls Dam may still exist on the banks of the Hudson River.

The following listing of historic archeological sites and structures pre-dating 1950 are located within the park.

- 1 **The Rhenbottom, Conklin and Ellison building sites (ca. 1866)** - Located along the Spier Falls road, the cellar holes of the Rhenbottom and Conklin sites are visible and at the Ellison location, the cellar hole and portions of a possible fieldstone foundation.
- 2 **The Imperial Hotel (ca. 1900)** - Extensive stone foundations, stairways and cellar holes are all evident.
- 3 **George W. McAdam House and outbuildings** - An existing structure was purchased by McAdam in 1882, and subsequently enlarged as his summer home, "Fernwood". The site is south of the walk-in camping area and west of Campsite #36.
- 4 **Camp Building site** - Circa 1940-49, located east of the access road to the west of the lake.
- 5 **Schoolhouse No. 7** - Rural school building constructed ca. 1856, now incorporated into the Park's maintenance complex.
- 6 **Sweet Family Cemetery** - Pre-dates the one remaining gravestone of Almeda Sweet who died in 1855. The stones from additional burials have been removed.
- 7 **Storage Building (ca. 1930)** - Situated on the southern shore of the lake and originally part of a private camp. 1.5 story, 29 x 33 feet, constructed of peeled logs.
- 8 **Lakeshore Cottage (ca. 1940)** - Western side of lake, has own well and large porch on northern side. 1 story, 29 x 36 feet. Originally part of a Girl Scout camp.
- 9 **Park Garage (pre-1949)** - Single story wood frame building appears on 1949 topographic map.
- 10 **Park Building (pre 1949)** - Eastern side of lake, 1 story frame building, appears on 1949 topographic map.
- 11 **Spier Falls Dam (ca. 1909)** - A major feature of the Hudson River as it flows through park lands, along Spier Falls Road.



Map 11 – Cultural Resources



George E. Pataki, Governor  
Bernadette Castro, Commissioner

# Moreau Lake State Park

## MASTER PLAN

### Cultural Resources

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## Recreation Activities and Resources

Moreau Lake State Park's lake lies amid hardwood forests, pine stands and rocky ridges. Shady groves of trees shelter picnic grounds with play structures and a pavilion overlooking the lake. Wooded campgrounds and facilities for group campers, as well as tent and trailer sites are available. The sandy beach, nature, hiking and cross-country ski trails, opportunities for boating, fishing and ice fishing, and proximity to Saratoga Springs and Lake George make the park attractive to visitors. Located on the beach road, is the Lakeshore Cottage, a full service accommodation. The cottage provides everything from a refrigerator, stove, dishes and utensils to a screened porch, bathroom with shower, bedding, pillows and a cozy fireplace.

The park is open year round. Camping season runs from mid-May through mid-October. The beach is open for swimming from Memorial Day weekend through Labor Day. Deer hunting is permitted in designated areas in season. Vehicle access in the winter months is limited. Maps 12 and 12a show the park's major recreation areas.

### Boating

There are a total of three boat launches in the park. One is located on the southern shore of Moreau Lake. No gas or electric powered motors (including ice augers in winter) are allowed on Moreau Lake. The Day Use Area also offers a boat rental service. Fourteen rowboats and nine paddleboats are available for the public to rent on an hourly basis and use on Moreau Lake. Rowboats seat a maximum of four passengers. Life vests are required for each person in all rental boats. The park also issues boating permits to patrons who wish to use and store their own boats on Moreau Lake. The park issues approximately 25 permits at \$30 each per year.

The remaining two launches are located on the south shore of the Hudson River off of Spier Falls Road. The first is called the Sherman Island Boat Launch and is located on a bend where Spier Falls Road turns west along the river. This launch has a gravel ramp with 15 car/trailer parking spaces. Space for 10 additional cars is available at picnic sites and along Spier Falls Road at the entrance to the launch. The area offers picnic tables and 2 portable toilets seasonally. The second launch, the Spier Falls Boat Launch, is approximately four miles up stream of the Spier Falls Dam. This launch has a cement ramp with five to six parking spaces and one picnic table. Boats with motors are allowed on the Hudson River.

### Camping

In the vicinity of Moreau Lake, the Park offers 148 tent /trailer camping sites around seven camping loops, some of which are accessible to disabled persons. Each site can accommodate two vehicles and two tents. Many of the larger sized sites can accommodate large trailers and recreational vehicles. These sites are heavily used throughout the summer months. Many sites are in poor condition due to use impacts (i.e. soil compaction, scarred trees, pad creep, and erosion). None of the sites provide electric or septic hookups. A dumping station is provided for self contained campers and potable water is available at numerous locations within each loop. Each loop is also serviced with a comfort station. A shower building is centrally located within the camping area.

During the 2002 camping season Moreau Lake State Park achieved an occupancy rate of 62.22%. Moreau Lake is among the top ten State Park Campgrounds with the highest occupancy rates.

In addition to these camp sites, the park has a walk-in camping area for tents and a full service cottage.

Traditionally, campers have used the small lots and pull-off sites on Spier Falls Road to park their campers during the summer months and hunting season. This practice has been monitored and discontinued since OPRHP has taken ownership and management responsibilities of the surrounding land.

### **Cabins/Cottages**

Currently there is no cabin camping within the park. There is however, a full-service cottage available for weekly rentals. The cottage comes fully furnished, has a full kitchen, bed linens and sleeping accommodations for up to six people. It is not currently equipped for access by persons with disabilities. This cottage is located along the southwest shore of Moreau Lake before reaching the day use and beach area.

### **Group Camping- Walk-in**

The walk-in group camping area is located along the camping Trunk Road between Loop B and the lake. The area consists of six tent sites, a small picnic pavilion with tables, cooking grill, small comfort station and can accommodate up to 35 people. The area has traditionally been used by scouting, church and other not-for-profit groups; but, it has recently been opened for use by the general public.

### **Primitive Water-Accessed Camping**

According to the power company's license agreement with the FERC, it is required to provide a total of four primitive water-accessed campsites within the Spier Falls and Sherman Island Impoundments. The power company, in consultation with OPRHP and DEC, selected and constructed four sites. These sites are located within the portion of the regulated FERC boundary that is managed by OPRHP. The analysis and site selection process is outlined in Appendix D. The first location provides two campsites at the mouth of Bennie Brook and the second location has two campsites at the mouth of Hartman Creek (See Map 12).

These sites are intended to be accessed from the water via boat, canoe or kayak and occupied for one or two nights. They are occupied on a first-come/first-served basis and no fee, registration or reservation is required. The sites consist of a cleared area with a fire ring. No further amenities are provided.

## **Day Use Area-Moreau Lake**

### **Parking**

The day use area is served by a 350 space parking lot. This lot is surfaced with asphalt and provides parking for the picnic pavilion, rental tents, picnic area, beach, nature center and boat rentals.

## Picnicking

The day use area is located on the western side of Moreau Lake, which offers a picnic area, three rental tents and a picnic pavilion. The picnic area has 190 tables and 90 grills. The picnic pavilion has a capacity of 120 people and provides electrical service and lighting. The largest of the three rental tents has a capacity of 50 people, while the other two can accommodate approximately 30 people each. For a fee, groups may rent the pavilion or tents for larger picnics and occasions. The day use area also includes play structures, a volleyball court and several horseshoe pits.

## Swimming

The park has a 300-foot swimming beach located at the northwest corner of the lake. The area offers a bathhouse, comfort station and volleyball court. The swimming area is roped off into four swimming sections in Moreau Lake. Swimming is permitted from Memorial Day through Labor Day from 10:00 a.m. to 6:00 p.m. on weekdays and 10:00 a.m. to 7:00 p.m. on weekends and holidays. Swimming is only permitted when lifeguards are on duty. The First Aide station is also open when lifeguards are on duty. The facility capacity of the beach is approximately 1,000 people. This capacity is never reached.

## Food and Concessions

There is a concessionaire operated food and beverage stand located in the southeast part of the bathhouse building complex. The snack bar is open seasonally and services both day use and camping patrons with food, beverages and a selection of toiletries and other camper needs.

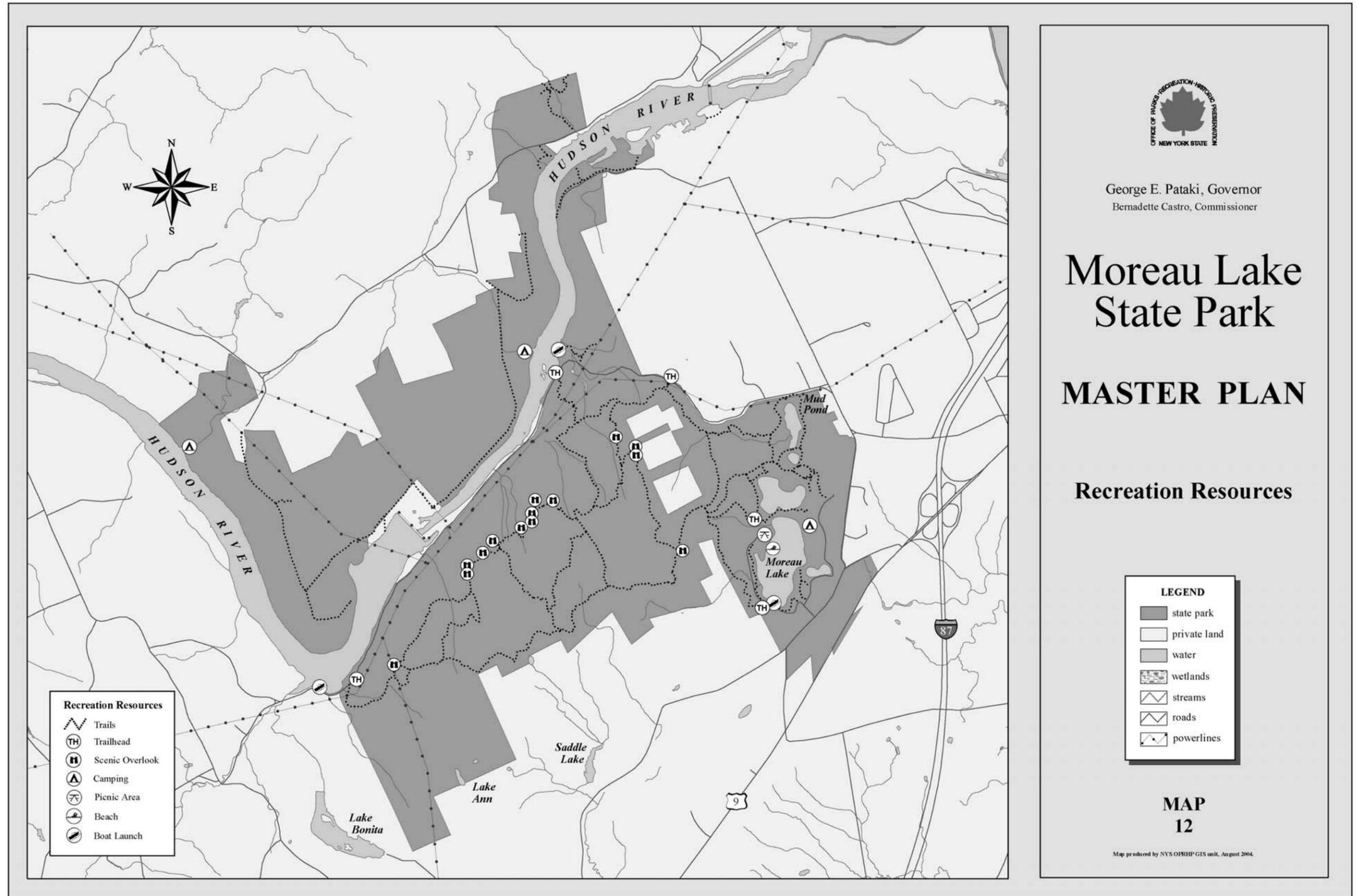
Two soda/drink vending machines are located at the campers shower building.

## Hunting and Fishing

Hunting is permitted in the park in designated areas and in season. Safety zones are established around developed areas. Hunters must possess a valid New York State hunting license issued by DEC and obey all hunting rules and regulations. In addition, a permit to hunt on park lands is required and is issued from the Park Office. Hunting seasons may be modified by the park but generally follow the seasons out lined by State hunting regulations.

Fishing is permitted on Moreau Lake and the Hudson River. Moreau Lake is stocked by Saratoga County each spring with trout species. In winter, ice fishing is permitted on both Moreau Lake and the Hudson River when conditions allow. However the use of powered augers is prohibited on Moreau Lake. Fishermen over the age of 16 must possess a valid New York State fishing license issued by the DEC and obey all park and DEC fishing rules and regulations.





George E. Pataki, Governor  
Bernadette Castro, Commissioner

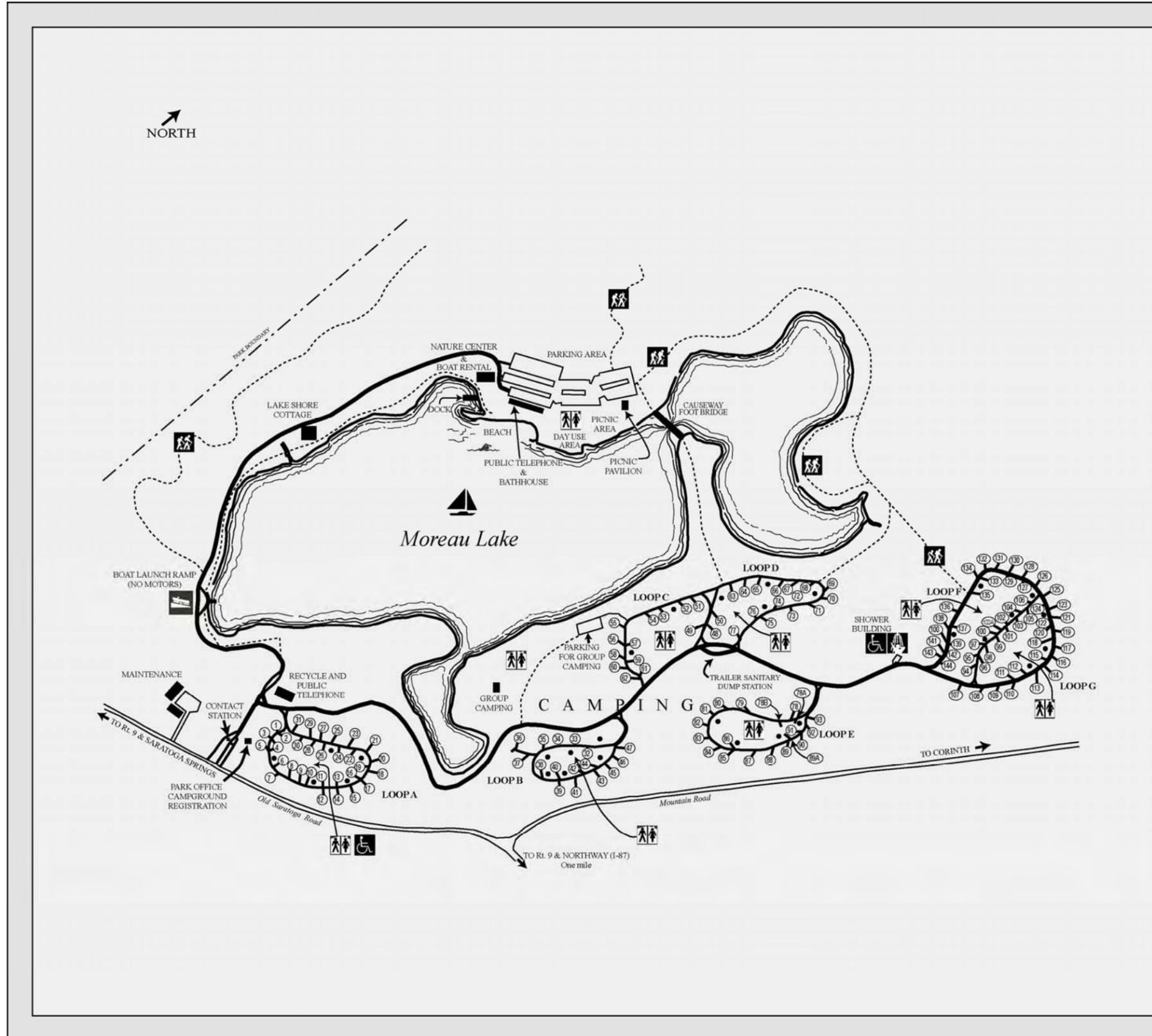
# Moreau Lake State Park

## MASTER PLAN

### Recreation Resources

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Map 12A – Recreation Resources Lake Recreation Area



George E. Pataki, Governor  
Bernadette Castro, Commissioner

# Moreau Lake State Park

## MASTER PLAN

### Recreation Resources Lake Recreation Area

LEGEND	
•	Water
	Comfort Station
	Accessible
	Trails
	Shower Building
	Boat Launch
①	Tent Sites

### MAP 12A

Map produced by NYS OPRHP GIS Unit, August 2004.

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## Interpretation Programs

Moreau Lake State Park offers a number of recreation and nature interpretation programs. The park offers a Nature Center where a wide variety of environmental programs and exhibits, in addition to recreational programs, are offered daily during the Spring, Summer and Fall months. These programs include nature and wildflower hikes, fishing, casting and fish filleting demonstrations. There are regular presentations on native mammals, environmental scavenger hunts, slide and video programs and special events such as a nighttime bat walk and black bear talks given by experts in the field.

During the winter months the nature center staff leads both regular and snowshoe interpretive hikes on the many trails.

## Parking

Parking along the Spier Falls Road/Hudson River shoreline is limited. There are a number of small pull-off areas for hunters and hikers who wish to access trails. Small parking lots are also available at the boat launches on Spier Falls Road.

Parking is also available in the campground area for walk-in campers. Campers park their vehicles in this lot and walk their equipment into the camp site.

## Picnicking

There are a number of pull-off areas and small parking locations along Spier Falls Road that may be used for informal picnics. There is one table located at the Spier Falls boat launch and several tables located at the Sherman Island boat launch. No grills are provided in these areas.

## Swimming

Currently, swimming is not permitted in the Hudson River. The park has a 300-foot swimming beach roped off into four swimming sections on Moreau Lake. This is the only swimming area in the park.

## Trails

The Park offers more than 20 miles of trail. The trails that exist in the northern parcel have not been fully inventoried or designated for any particular use. This trail system currently consists of old logging roads, dam access roads, or trails created through user activity. These trails are not clearly marked or signed. Users that may frequent these trails include: equestrians, snowmobilers, hikers and bikers.

The open trails are located in the portion of the park south of the Hudson River. A trails plan exists for this portion of the park and has approved nearly 20 miles of trail. The trails located in the southern section of the park have been inventoried. Most are marked/blazed and maintained by the park. All trails are considered multiple-use trails. The terrain of these trails provides a natural stratigraphy for the various trail user groups. For example,

equestrians prefer the wider, more level trails of the area surrounding Moreau Lake, where as the hikers seeking a more challenging experience will climb the steeper trails. There are both guided and self-guided nature trails in the vicinity of Moreau Lake. In the winter, cross-country skiing and snowshoeing is permitted on the trails normally used for hiking and on unplowed roads. Snowmobiling does not currently take place within this area of the park.

There is evidence of ATV use throughout the park. However, this is limited to the newer properties to the north and south of the Hudson River. Since OPRHP ownership this use has been monitored and reduced. Use of ATV's on park property is illegal and is enforced by regular park patrols.

In addition to many informal paths through the campground area, there are a number of longer distance and scenic trails. The following descriptions are of these longer distance and scenic trails that currently exist on the park. These trails are blazed/marked and maintained:

- Lakeside Trail** – This trail begins down the hill from the gates to the day use area, where there is a green hiking trail marker in the ground. Once out of the trees the trail turns to the left and follows the upland vegetation line through the sand and near some benches. It is about 0.21 mi. to the boat launch. About 350 ft. further, the trail leaves the shoreline to travel through the trees. At 0.36 mi. the trail reaches a bridge over a feeder stream to the rental cottage area. Around the cottage the trail continues through the trees until it reaches the Nature Center. Total trail distance is 0.65 mi.
- Nature Trail** – This trail basically circles the north end of Moreau Lake, although the lake is not often visible from the trail. The Nature Trail features two interpretive paths. It begins at the northeast corner of the back parking lot, across the lot from the Moreau Overlook trailhead. This is also the beginning of the first interpretive section of the trail, where there are signs describing basic natural features of the park. The junction with the Red Oak Ridge trail is at 0.28 mi. on the left. From here the trail turns uphill to the right, then it levels out a bit until, at 0.4 mi., the interpretive loop leaves the main trail to the right. After traveling steeply downhill the interpretive loop follows the lakeshore and then into the woods back toward the main trail for a total of 0.19 mi. (If one wished to take the trail back to the parking lot at the juncture, the total distance would reach 0.82 mi.) Meanwhile, the main trail continues straight. At around 0.47 mi. it meets the Mud Pond Trail (marked in orange) and bears right. The trail reaches a junction with Wetland Walk interpretive trail (marked in white) at 0.62 mi., and meets the other end of the Mud Pond loop at 0.69 mi. 200 ft. past where the trails meet, the main trail comes to a “Y”; it takes the right arm of the “Y” around a corner and up a slight hill, and continues until it reaches a paved road in the camping loops. The trail follows the road for about 680 ft. until it takes a right turn downhill towards the lake. The trail continues straight until it crosses the bridge over the narrow neck between the north part of the lake and the main lake. From the bridge, it is only another 0.1 mi. through the picnic area back to the parking lot. Total trail distance, excluding the loops off the main trail, is 0.83 mi.
- Wetland Walk** (white blazes) begins as a spur of the Nature Trail. The trail is 0.22 miles long and meets with the Mud Pond Trail. The entire interpretive loop is 0.27 mi. long, and circles around back to the Nature Trail. This trail has numbered posts to interpret the wetland. Descriptions for each number are available in a separate brochure.
- Moreau Overlook Trail** - The trailhead is located at the northwest corner of the rear parking lot of the day-use area, and is marked with light blue markers. The trail climbs in a northwesterly direction for 0.18 mi. and then takes a left turn to a southwesterly and steeper climb until it levels out somewhat near a seasonal stream. At 0.31 mi. the trail crosses a feeder to the stream and covers some more steep sections until it reaches the Red Oak Ridge Trail and Turkey Path a tenth of a mile further. The three trails merge for about 60 ft., and then the Red Oak Ridge Trail takes a sharp right. The other two continue together for another 240 ft. until the Turkey Path also leaves to the right. Just past this junction the trail bears left along a side-hill and then begins to climb steeply. It levels out for a short distance and then climbs a steep rocky section before it terminates at the overlook and the intersection with the Ridge Run Trail. This trail has an elevation change of more than 700 ft. over a total distance of 0.86 miles.
- Red Oak Ridge** - This trail provides an intermediate-level challenge. The trailhead is located across the road from boat launch on Moreau Lake. From the trailhead, the trail climbs westerly over a small hill and then descends to an old carriage road. The trail follows the carriage road northerly, before entering an area which was recently logged (prior to OPRHP ownership). After traversing the logged area, the trail enters an open oak forest, and climbs along a ridgeline. At the top of this ridgeline, at 0.75 mi., there is a small clearing with a fireplace. From

this point, the trail descends briefly through hemlocks before resuming a northerly course across relatively level terrain to the intersection with the Moreau Overlook Trail and Turkey Path at 0.93 mi. About 60 ft. from this intersection, the trail turns northeasterly and mainly downhill to an intersection with the Nature Trail. Total trail distance is 1.32 mi.

**Turkey Path** – This is a short trail that begins from the junction with the Red Oak Ridge and the Moreau Overlook Trails. The Red Oak Ridge Trail leaves to the right after 60 ft., and it continues to share the path with the Moreau Overlook Trail for another 240 ft. before also turning right. From this junction the trail follows the contours of the hillside in a northerly direction then descends to intersect with the Western Ridge Trail near a small intermittent stream. Total distance is 0.57 miles.

**Mud Pond Trail** – Beginning on the main Nature Trail and ending on the Wetland Walk loop, this trail encircles a shallow body of water and wetland, and is indicated by orange markers. Leaving the Nature Trail, it travels through the woods and across an intermittent stream until it reaches an intersection with the eastern end of the Western Ridge Trail at 0.19 mi. From there it first wends northeasterly towards a view of the water, and then back away from the water, curving through the woods until it comes out on a power line at 0.46 mi. It follows the power line for 0.14 mi. before taking a sharp right back into a grove of spruce. The trail winds around mostly within view of the water until it ends at the interpretive Wetland Walk loop, traveling a total distance of 1.11 mi.

**Western Ridge Trail** – There are two places to access this trail from the boundary of the park on Spier Falls Road. One trailhead is located at a paved pull-off, about 0.25 miles north of the Spier Falls Boat Launch. The other access is located at the height of land on Spier Falls Road with parking on the gravel shoulders, about 0.8 mi. east of the Sherman Island boat launch. From the first trailhead, the trail follows Spier Falls Road south for <200 ft., and then it leaves the road on the eastern side where it is guarded by a steel gate. The trail climbs an old logging road, crosses a small power line and reaches an open landing field after 0.5 miles. Continuing to climb the trail crosses a larger set of power lines and reaches an intersection with the Lake Ann Cutoff at 0.62 miles. The Lake Ann Cutoff continues straight while the Western Ridge Trail makes a left turn and climbs steeply for a short section to an intersection with the Eastern Ridge Trail at 0.75 miles. At this intersection, the trail turns to the left, leaving the old logging road, and leads to the Spring Overlook at 0.84 miles. From here it continues north to northeasterly across the rolling terrain of the top of the ridge. It turns east just before a stream crossing at 1.5 miles and then back north again after it passes the Telegraph tree 0.08 miles later. The trail resumes its course along the top of the ridge, and reaches the intersection with the Cottage Park Trail at 2.18 miles. (The spectacular Spier Falls Overlook is only 220 ft. to the left following the orange markers.) From this point, the trail continues in a northeasterly direction passing a few more overlook points, and then turns southeasterly until it meets another intersection with the Cottage Park Trail at 3.34 miles. In another 80 ft. it leaves the Cottage Park Trail and joins the beginning of the Ridge Run Trail, which leaves to the right 20 ft. later. This is a major 5-way intersection and serves as a point to reorient trail users to their various destinations. From here the trail continues in a northeasterly direction for 0.51 miles until it reaches an intersection with the other end of the Ridge Run Trail. From here it heads north, until it reaches another overlook where there is an old fireplace at 4.23 miles. The trail begins to travel steeply downhill from this point. At 4.35 miles the trail levels out and turns to the east on an old logging road. From this junction, the trail follows rolling terrain for another 0.37 miles until it reaches a clearing. Here a 350-ft. spur trail that leads to the second trailhead on Spier Falls Rd. goes off to the left, and to the right there is another old logging road that leads to private property. The main trail continues straight, leaving the logging roads for a narrower path, and bears southeasterly, approximately paralleling the course of Spier Falls Rd. back into the woods a couple hundred feet. The trail reaches a junction with the Turkey Path at 5.15 miles, and finally ends at a junction with the Mud Pond Trail 0.51 miles further. Total trail distance from one roadside trailhead to the other is about 4.8 mi., while total distance including the connection to the Mud Pond Trail is 5.66 miles.

**Western Ridge/Cottage Park Connector** – This trail begins at an intersection along the Western Ridge Trail at 0.34 miles from the height of land trail head on Spier Falls Road on the northern most section of the Western Ridge Trail. The trail follows around an old landing and features several switchbacks down a relatively steep section of slope. At the bottom of the steep section, the trail follows along the base of the mountain until it intersects with the Cottage Park Trail. This trail is 0.53 miles in length.

**Cottage Park Trail** - The trailhead is located about 250 ft. south of the Sherman Island Boat Launch on Spier Falls Road. It wanders among foundations remaining from a historic hotel and a little community of cottages that were built for the people who were involved in the construction of the Spier Falls Dam, known as Cottage Park. After leaving the ruins, the trail proceeds southeasterly, crossing a power line access road at 0.15mi. and two power line corridors at 0.27 and 0.35 miles. From this point the trail climbs gradually along the toe of a steeper slope until it reaches a junction with an old logging road at 0.69 miles. Here it turns left and climbs very steeply

for 0.7 miles gaining in elevation to 1100 ft. and reaches the intersection of the Ridge Run and Western Ridge trails. From here the trail turns southwesterly and continues across the plateau until it reaches the intersection with the Eastern Ridge/ Cottage Park Connector at 2.18 miles. Turning northwesterly, the trail continues for 0.59 miles to meet the Western Ridge Trail again. The Spier Falls Overlook is another 220 ft. further from this intersection. The trail's total length is 2.74 miles.

**Ridge Run Trail** – This trail begins at the intersection with the Cottage Park and Western Ridge Trails. From here it travels 0.45 miles south along the plateau to an intersection with the Eastern Ridge Trail. Then it turns east and then north for another 0.73 miles until it meets the Moreau Overlook Trail at the overlook. Leaving the overlook it runs north northwesterly across the plateau until it reaches an overlook spur at 2.0 miles. The spur leaves the trail to the left and it is about 120 ft. to the overlook. The main trail continues west for another 0.19 miles to end at the Western Ridge Trail. The total trail length is 2.19 miles.

**Eastern Ridge Trail** – This trail begins at an intersection with the Ridge Run Trail and travels west 1.18 miles along the top of the Grant Mountain Ridge until it meets an intersection with the Eastern Ridge/Cottage Park Connector. The trail continues along the ridge line and then meets the intersection with the White Birch Trail at 2.74 miles. Continuing westerly, the trail ends at an intersection with the Western Ridge Trail below the Spring Overlook. This trail is 2.96 miles in length.

**Cottage Park/Eastern Ridge Connector** – This is a very short trail running almost north/south, that provides a shortcut between the Eastern Ridge and Cottage Park trails. It is only 0.2 miles long.

**White Birch Trail** – This trail begins at an intersection on the southern end of the Eastern Ridge Trail at 0.2 miles. The trail follows a generally northern downhill course to a small stream crossing then starts upwards again towards the Western Ridge Trail. This trail offers an alternative to some of the longer loops in the trail system. This trail is 0.65 miles in length.

The trails listed here are undeveloped and may not be open for use. General descriptions of the routes and estimates of mileage are provided. Note that more site specific work is required to complete these trails.

**Lake Ann Trail** - From the intersection of the High Road and Eastern Ridge trails, the Lake Ann Trail heads south for 0.35 miles to a point where the trail splits. One path follows the top of a slope while the other follows the bottom of the slope. The Lake Ann Cutoff meets the Lake Ann Trail at the beginning of the lower path. When the two routes meet again the trail continues south for 0.42 miles to Lake Ann and the edge of the park property.

**Lake Ann Cutoff** - This trail leaves the Western Ridge Trail and heads southeasterly to the lower part of the Lake Ann Trail climbing for 0.48 miles.

**Telegraph Tree Trail** - The trailhead is located immediately across Spier Falls Road from the Spier Falls Hydro Dam. The trail climbs steeply to the south for 0.34 miles reaching the Telegraph Tree at the intersection with the Western Ridge Trail.

The table below provides a quick assessment of the status of the trails within the southern portion of the park.

<b>Trail Name</b>	<b>In Approved Trails Plan</b>	<b>Developed or Undeveloped</b>	<b>Designated Uses</b>
Lakeside Trail	Yes	Developed	Multiple Use**, No Snowmobiling.
Nature Trail	Yes	Developed	Multiple Use, No Snowmobiling.
Wetland Walk	Yes	Developed	Multiple Use, No Snowmobiling
Moreau Overlook Trail	Yes	Developed	Multiple Use, No Snowmobiling.
Red Oak Ridge Trail	Yes	Developed	Multiple Use, No Snowmobiling.
Turkey Path	Yes	Developed	Multiple Use, No Snowmobiling.
Mud Pond Trail	Yes	Developed	Multiple Use, No Snowmobiling.
Western Ridge Trail	Yes	Developed	Multiple Use, No Snowmobiling.
Cottage Park Trail	Yes	Developed	Multiple Use, No Snowmobiling.
Ridge Run Trail	Yes	Developed	Multiple Use, No Snowmobiling.
Eastern Ridge Trail	Yes	Developed	Multiple Use, No Snowmobiling.
White Birch Trail	Yes	Developed	Multiple Use, No Snowmobiling.
Western Ridge/Cottage Park Connector	Yes	Developed	Multiple Use, No Snowmobiling.
Eastern Ridge/Cottage Park Connector	Yes	Developed	Multiple Use, No Snowmobiling.
Lake Ann Trail	Yes	Undeveloped	Multiple Use, No Snowmobiling.
Lake Ann Cutoff	Yes	Undeveloped	Multiple Use, No Snowmobiling.
Telegraph Tree Trail	Yes	Undeveloped	Multiple Use, No Snowmobiling.

*\*\* Note: Multiple uses include: hiking, biking/mountain biking, equestrian uses, snowshoeing, cross-country skiing.*

## Infrastructure Resources

### Roads

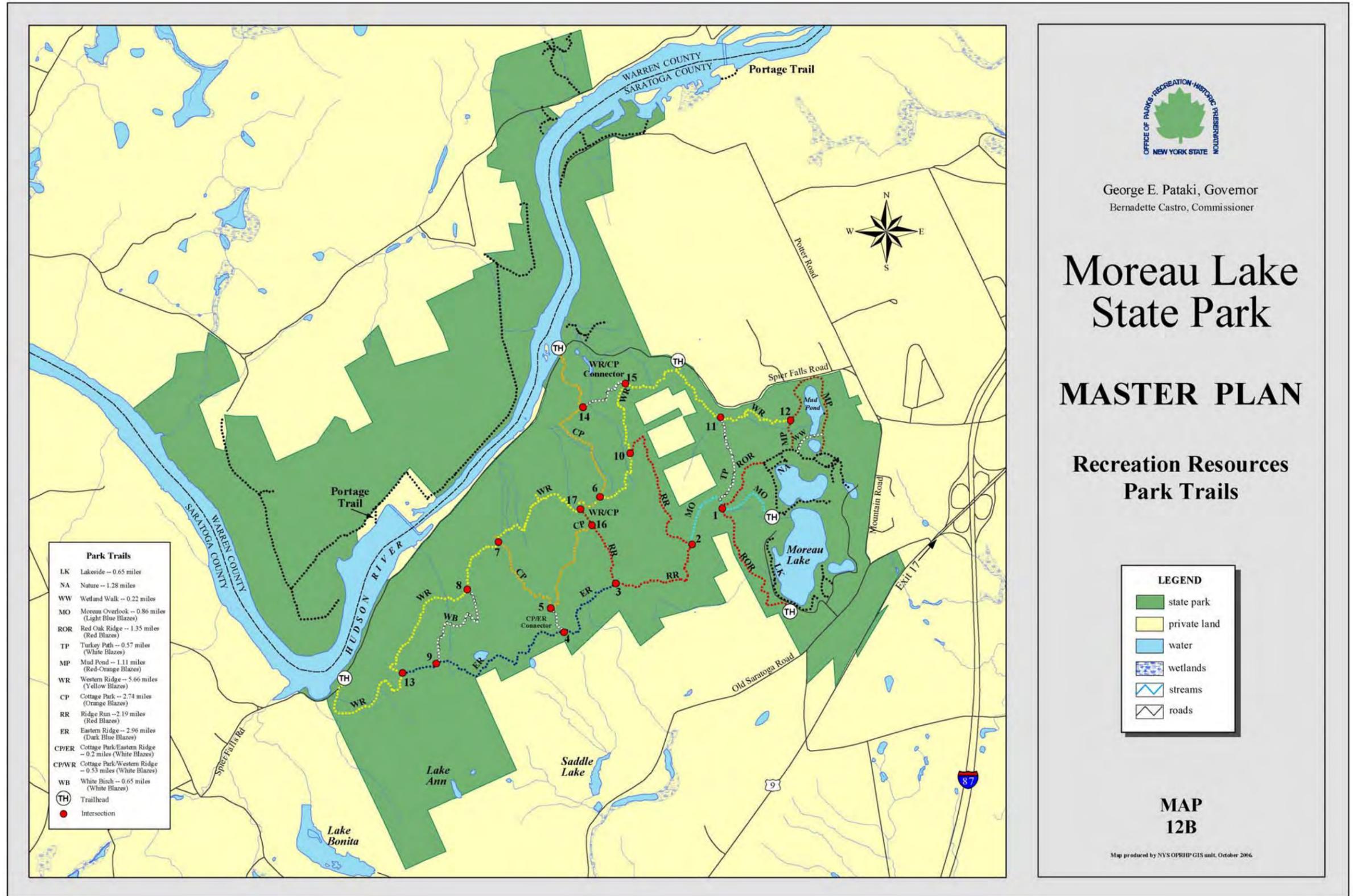
There are a total of 7 miles of paved road in the park. The main roads are in good condition, while the camping loop roads are in poor condition. There are no walkways, sidewalks or parallel paths along these roads so all roads are shared by vehicular, pedestrian and bicycle traffic.

### Bridges

There are three footbridges located on the property. One is located across the causeway of Moreau Lake and allows campers to cross the lake to the day use area. This bridge is in good condition. The other two bridges are located just south of Lakeshore Cottage and along a connector trail leading from camping Loop F to the Nature Trail. These bridges carry pedestrian and equestrian traffic along the trails. These bridges are considered to be in good condition. There are no vehicular bridges in the park.



Map 12B – Recreational Resources Park Trails



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## Buildings and Structures

### Non-Recreational Building

Total Structures: 28

Total in Use: 24 (4 structures are not in use and are uninhabitable, 2 buildings along Route 9 have been demolished)

## Utilities

### Potable Water Supplies

There are three separate water systems within the park. They are as follows.

1. Serves the maintenance shop, park office and camping loop A and the recycling center

- Six (6) inch diameter drilled well 125 feet deep.
- Water is disinfected prior to distribution using a sodium hypochlorite solution.
- Two (2) pressure storage tanks.
  - Two (2), 119 gallon hydro pneumatic tanks.
- Six (6) standpipes served.

The well and tanks are located in a small pit behind the park's storage garage. This well serves the park office year-round. A portable toilet is provided for public use during winter months.

2. This system serves both the day use area and the camping area with the exception of Loop A. There are two wells in the main system. The flow of the main system is monitored by a master flow meter located in a small pit near the pump house.

**Well # 1-** Located in pump house

- Six (6) inch diameter drilled well, 225 feet deep.
- 5 hp submersible pump (replaced 8/05).
- Reported well yield of 25+ gallons per minute.
- Chlorinated.

**Well # 2 –** Located along Lakeside Trail, south of Cottage

- Six (6) inch diameter drilled well, 130 feet deep.
- 5 hp submersible pump (replaced 8/05).
- Reported yield of 60 gallons per minute.

#### **Storage**

Distribution storage for the main system is provided by a 50,000 gallon steel-encased storage tank/water tower which is located on top of the hill behind the day use area to the north of the lake. The tank has a recirculation pump and a chlorinator which maintains a constant free chlorine residual in the tank. The system is gravity fed by this tank. The chlorinator is only used in the summer and is removed each year prior to the onset of winter.

#### **Treatments**

Water is disinfected using a sodium hypochlorite solution pumped by a pulse chlorinator fed from a 45 gallon crock. The solution is injected into water prior to leaving the pump house. Well pumps are only activated during off hours to insure sufficient chlorine contact time.

#### **Distribution**

A 3 inch diameter PVC pipe distributes water to the beach area, concessions stand and comfort station prior to storage and then a combination of 3-inch diameter PVC pipe down to a 2-inch diameter galvanized pipe for distribution to 27 standpipes and 10 buildings.

3. This water system serves the rental cabin, Lake Shore Cottage.

- The source is a driven point 24 feet deep.
- Pumped via a 3/4 HP jet pump with a 20 gallon bladder tank set at 20-40 psi.
- Located in a small pit of concrete block construction covered by a small shed structure.
- Serves only the rental cabin

- Used only for the summer. Pump and pressure tank removed before the onset of winter.
- Chlorinated.

### Septic Systems

Septic tanks and leach fields handle sewage generated from the campground, park office, rental cottage, ranger's cabin, bathhouse, maintenance buildings, shower building, dumping station, Nature Center and comfort station.

Tanks	Capacity
Camping Loop A	1000 gallons
Camping Loop B	1000 gallons
Camping Loop C	1000 gallons
Camping Loop D	1000 gallons
Camping Loop E	1000 gallons
Camping Loop F	1000 gallons
Camping Loop G	1000 gallons
Walk-in Camping	1000 gallons
Park Office	1000 gallons
Rental Cabin	1000 gallons
Ranger's Cabin	1000 gallons
Bathhouse	6000 gallons (2 - 3000 gallon tanks)
Maintenance	1000 gallons
Shower Building	6000 gallons (estimate)
Dump Station	1500 gallons (estimate)
Nature Center	500 gallons
Comfort Station	3000 gallons

### Telephone

The telephone system is a Centrex System provided by Verizon. There are also two public pay phones located in the park, one by the recycling center and the other by the concession area.

### Electric

The park has overhead primary electrical distribution and some underground secondary distribution. The overhead system is owned and maintained by National Grid; the underground secondary lines were installed and are owned by the park. National Grid provides electricity to the primary lines. There are a total of six meters on the park at: Mountain Road, the Park Office, Lake Shore Cottage, the Maintenance Building, the Campsite Pump House, and the Beach Pump House.

### Heating System

The park office and maintenance garage are heated by oil-fired, hot water systems. Each of these buildings is supplied by a 500-gallon above ground fuel oil storage tank with leak detection and overflow protection.

### Petroleum Storage Tanks

The park maintenance area has two above ground fuel storage tanks in addition to the heating fuel oil tank. These tanks consist of a 1000-gallon tank for gasoline storage and dispensing and a 500-gallon tank for diesel fuel storage and dispensing. Both are equipped with leak and overfill detection sensors and automatic fire-suppression equipment. The Bathhouse at the day use area has an underground propane tank that is used for heating water.

### **Subsurface Resources**

There are no mineral mines, gas or oil wells within the park boundaries. There are, however, gravel pit mines and iron pit mines adjacent to the park.

### **Scenic Resources**

From the Western Ridge trail there are a number of scenic overlooks that provide expansive views of the Hudson River, the foothills of the Adirondacks and the forested park land on the Hudson River's north shore. From the eastern side of the Palmertown Range there are mountain top views of Moreau Lake, the Green Mountains in Vermont and the Hudson Valley. The Hudson River provides views of the quick rising Palmertown and Luzerne Mountains. These views are mostly experienced from a boat or the north shore of the river. There may be more scenic view opportunities from within the Park lands north of the Hudson River; however, this area has not been thoroughly inventoried. (See Map 12 - Recreation Resources)

### **Park Finance, Attendance, Operation and Maintenance**

The Park Manager deals directly with security and maintenance personnel. The park is staffed 24 hours a day 7 days a week during the camping season and from dawn-dusk during the winter season. Camping season runs from mid-May through mid-October. The beach is open for swimming from Memorial Day weekend through Labor Day. Park staff consists of : a Park Manager II, a Park Supervisor I, two Park Worker IIIs, and a Park Worker I. During the summer operating season there are as many as 51 temporary and seasonal employees in titles including: Lifeguard, Park Ranger, Park Worker (T&S) and Park Aides I-V.

### **Finance, Revenue and Attendance**

Revenue from Moreau Lake State Park has increased steadily since 1995. This is due to the introduction of group camping, the cottage rental, walk-in tent camping, picnic tent rentals and paddle boat rentals. Park attendance is recorded through camping and day use admittance through the contact station.

<b>Fiscal Year</b>	<b>Attendance</b>	<b>Revenue</b>	<b>Operation Expenses*</b>
99-00	192,000	\$298,241.48	\$253,500
00-01	169,000	\$289,248.04	\$258,350
01-02	278,559	\$310,409.48	\$303,100
02-03	286,725	\$330,673.18	\$303,100
03-04	277,251	\$340,567.99	\$310,610
04-05	276,163	\$337,086.45	\$313,610
Year to date 05-06	236,075	\$325,180.89	\$331,254

\* Note: Operations figures include temporary and seasonal personnel but not permanent personnel or capital funding.

## Operation and Maintenance

### Park Regulations

From Memorial Day to Labor Day, the Day Use Area is open from 8:00 a.m. to sunset. No one is allowed into the park prior to or after these hours, including fishermen.

The contact station is staffed for fee collection from 8:00 a.m. daily. A park employee is typically stationed at the booth 24 hours a day, while camping is permitted, to provide a measure of security.

The beach is open daily from 10:00 a.m. to 6:00 p.m. At the close of public schools in June, the beach hours are extended on Saturday and Sunday from 10:00 a.m. to 7:00 p.m.

When the park fills to capacity, it is closed to the public including those persons who are joining a party already in the park. As the park empties, others are allowed to enter. Walk-ins sign a registration sheet and drivers of state-owned or other official vehicles must sign the "Official Vehicle Registry". All campsite visitors must leave the park by 10:00 p.m. when "quiet hours" begin.

From mid-October until mid-May the park hours are 7:00 a.m. to sunset. In the winter, only the main entrance gate is open. This allows vehicles to enter and park above the second set of gates.

Equestrians who wish to bring their horse onto park property must show park management documentation regarding Coggins and other necessary vaccinations.

### Park Fees

Camping is \$13.00 a night plus a \$2.75 service charge for non-reservations. There is a \$3.00 weekend and night before a holiday amenity fee. Reservations are made through ReserveAmerica at 1-800-456-CAMP. Reservations are accepted 2 days to 11 months in advance for a fee of \$9.00.

A Day Use fees are \$7.00 per vehicle when the beach is open for the season and \$6.00 per vehicle weekends and holidays only the first full weekend in May through Columbus Day. Day use fees are collected from 8:00 a.m. to closing. Empire Passports are season passes that allow free admission for one vehicle to most New York State Parks. These passes are available at the park office. Senior citizens (at least 62 years of age) that are residents of New York

State may use their NY driver's license or non-driver identification to gain free entrance to the Day Use Area Monday through Friday only and excluding holidays.

### **Camping**

Camping season is from the second weekend in May through Columbus Day. Campers are allowed six people per site and two vehicles per site. Additional vehicles must park in a designated area, and pay an extra car fee of \$5.00 when the beach is closed and \$6.00 when the beach is open. Two tents are allowed per site and must be set up on the sand pad area of the site.

The shower building is open daily from 7:00 a.m. to 9:00 p.m. and closed for cleaning from 12:30 p.m. to 1:30 p.m.

The dump station is available to all campers. There is no fee for park campers. Campers from outside the park may use the dump station but must pay the day use fee of \$6.00.

Firewood for campers can be purchased at the park office.

Pets are allowed into the camping area with proof of rabies vaccination. All pets must be kept on a leash no longer than six feet and must be kept under proper supervision.

### **Walk-in/Group Camping**

The walk in/group camping area is available for use by organizations, park volunteer groups and the general public. The entire area is rented for \$95.00 per night.

### **Cottage Rental**

Reservations for the Lakeshore Cottage can be made through [www.reserveamerica.com](http://www.reserveamerica.com) or 1-800-456-CAMP. Rental rates change throughout the season and are on a weekly basis.

### **Primitive Water-Accessed Campsites**

Four water-accessed campsites are located along the north shore of the Hudson River. These sites are available to river travelers on a first-come/first-served basis. There is no fee associated with these sites.

Fire rings are provided at each site. There is a boat pull-up area and a cleared tent pad at each site. Although these sites are located within the FERC regulated boundary of the power company's power generating stations, the Park is responsible for maintaining and operating these sites.

Park staff conduct periodic inspections of the sites to ensure that the tent areas are cleared of debris, hazardous trees are removed and that fire rings are in good condition.

If campers choose to park at one of the boat launch sites and use a water-accessed campsite they must obtain an overnight parking permit from the park office. Maximum length of stay is two nights. Campers may also purchase firewood at the park office.

## Wildlife

Raccoons prowl the shoreline of Moreau Lake and sometimes raid campers' garbage in search of food. Employees and park patrons are encouraged to stay away from animals and report any cases of unusual animal behavior.

## Fire Prevention and Protection

Each campsite is equipped with a fireplace. Unless special permission is given by the Park Manager these fireplaces are the only places fires should be made. The camping area is patrolled regularly and campers are warned if their fires appear unsafe. If a camper has left a site and an unattended fire, an Indian Tank, stored in the back of the Park Ranger's vehicle is used to extinguish the fire.

There are many buildings and structures within the park. Simple rules to prevent structural fires are listed in the park's "Information and Emergency Procedures" manual. In the event of a structure fire the building's evacuation plan is implemented and the local fire department is notified. Park buildings are inspected annually for compliance with the New York State Fire Code.

In the event of a wildfire (grass, brush or forest), the area and any structures are evacuated according to the evacuation plan and the local fire department is notified. The local DEC Forest Fire Ranger is notified. Park and/or other OPRHP personnel assist the fire department or DEC Ranger by providing manpower and/or equipment when requested.

## Park Safety and Security

To ensure the safety and security of park employees and patrons, the park is staffed 24 hours a day while the camping areas are open. All areas of the park are routinely patrolled including the road circling the park and the structures located on Route 9. The nature trails, beach, picnic area and camping loops are also patrolled. Buildings are checked for signs of break-ins or vandalism and reported accordingly. The Park Patrols also issue and check for alcohol permits, respond to patron complaints and handle most emergency situations and request assistance from either the Park Manager, maintenance personnel or the Park Police as necessary.

The contact station is staffed 24 hours a day from Memorial Day through Labor Day. Day shifts are required to handle fee collection, check for valid camping and day use permits and make sure official and walk-in visitors sign-in. After midnight, the booth is staffed to maintain a measure of security and check camping permits. No one is allowed to enter the park's day use area after sunset and all campsite visitors are reminded to leave the park by 10:00 p.m.

All accidents, crimes and emergency situations are reported to the NYS Park Police and the appropriate local authorities. In the event of persons falling through the lake ice, appropriately trained park personnel respond first and notify the 911 dispatcher that an ice rescue is needed. The Village of South Glens Falls has an ice rescue team and will respond if available. In the event of gasoline, fuel oil or hazardous material spills, the NYS Park Police are listed as first responders and are notified immediately. DEC also requires that they be notified within two (2) hours of discovery of the spill. They will respond with containment

and clean up crews if available. If DEC crews are not available, the Office of General Services may assist the park if a "Declaration of Emergency" is issued.

### **Evacuation Plan**

Command and control of the evacuation of buildings and structures is given by the NYS Park Police or Fire Department depending on the nature of the emergency.

In the event that the entire park needs to be evacuated, Park personnel with portable radios and portable public address systems travel the park in park vehicles and announce that an emergency exists in the park and all patrons are advised to leave the park. Areas where the highest concentrations of park patrons exist will be notified first. These areas include the day use, beach, and picnic areas, camping loops, walk-in campsites, nature trail and maintenance area. All patrons will be directed to the front entrance of the park. During peak season it may be necessary to also use an alternate exit to evacuate the camping areas. This alternate exit is located near site 110. Campers would be directed to this exit while day users would be directed to use the main park entrance. The announcement will be made along all town roads that surround the outside of the park, including the Spier Falls and Sherman Island boat launches.

### **Park Equipment and Vehicles**

The park maintains a small fleet of vehicles. Routine maintenance is handled by park staff. If major repairs are required, then a work order is placed with the Regional Maintenance at the Gideon Garage in Saratoga Spa State Park. Vehicles include:

- 1998 4x4 Dump truck with a snowplow.
- 2001 4x4 full size pickup truck with a snowplow.
- 2 compact pickup trucks 2000 and 2001 models with 2-wheel drive.
- 1997 pickup truck, full size, with 2-wheel drive.
- 1993 pickup truck, full size, with 4-wheel drive.
- 1985 rack body dump truck.
- 1998 motorboat, 12-foot long, with a 25 horsepower engine.
- Two small trailers.
- 1985 2-wheel drive tractor/loader with attachments.

The park has grounds equipment consisting of:

- 4 Chainsaws
- 2 walk behind mowers
- 1 garden type riding mower, wheel drive
- 1 All terrain vehicle 4x4 with snowplow.
- 1 Gator 6x4 multi-use vehicle.
- 1 snow blower, walk-behind type
- 3 emergency generators
- 1 Snowmobile

Office equipment such as computers, a photocopier, fax machine, cash register and portable radios is used as part of the park's daily administration.

### **Staff Parking**

There is a small parking lot at the park office. This is used for authorized park vehicles only, these include: the Park Manager's vehicle, the personal vehicles of evening office staff, official visitors and other park vehicles. Parking for persons with disabilities is also available in this lot. Day shift, park office and maintenance staff, and Park Rangers must park their personal vehicles at the Maintenance Area. Lifeguards have designated parking at the beach.

### **Solid Waste and Refuse Disposal**

The Saratoga-Capital District State Park Region has instituted a "Carry-in/Carry-out" policy for all the parks and sites under their jurisdiction. In Moreau Lake State Park the day use area is strictly "Carry-in/Carry-out". The facilities along Spier Falls Road (the two boat launches) and the primitive water access campsites on the north shore of the Hudson River are also designated "Carry-in/Carry-out" facilities. In the camping area around Moreau Lake, campers use a centrally located dumpster to dispose of refuse and participate in a recycling program. Park generated waste is also emptied into the dumpster. The Park contracts with a waste hauler to empty the dumpster.