VI. ENVIRONMENTAL RESOURCES

A. INTRODUCTION

It is State policy to "conserve, improve and protect our natural resources and environment and control water, land and air pollution, in order to enhance the health, safety and welfare of the people of the State and their overall economic and social well being". The State's environmental resources require special attention in this regard because of their often fragile nature and their social and economic importance. Once these areas are significantly changed or altered, it may not be possible to return them to their original state.

The production of oil, gas and salt are a few of the many human activities with the potential for disrupting the environment. To date, the oil and gas industry has been concentrated in rural portions of New York. With the gradual depletion of hydrocarbon resources in established areas and areas of easy access, the search for hydrocarbons may extend to other parts of the State. When the search extends into areas with steeper slopes, wetlands or centers of higher population, greater conflicts may be encountered. The potential impacts on the State's environmental resources must be carefully considered when conducting oil, gas and solution salt mining related activities.

A broad background of the State's environmental resources is provided in the following sections along with legislative protections, other than SEQR, guarding these resources from potential impacts. These resources are discussed in the following order: waterways/waterbodies; drinking water supplies; public lands; coastal areas; wetlands; floodplains, soils, agricultural lands; intensive timber production areas; significant habitats; areas of historic, architectural, archeological and cultural significance; clean air; and visual resources. Chapters 8, 9, 10, 11, 12, 13, 14 and 15

contain more detailed analyses of the specific potential environmental impacts of oil, gas and solution mining development on these resources, as well as the mitigation measures required to prevent these impacts.

B. WATERWAYS/WATERBODIES

Water quality and quantity are major factors in determining the suitability of an area for human use. New York is blessed with an abundant supply of freshwater including 3.5 million acres of lakes, 70,000 miles of rivers and streams, and an average annual precipitation level of 40 inches. There are 17 watershed drainage basins which collect the State's water supply. With increasing population and development pressures, measures must be taken to ensure that quality water is available for drinking, as well as for recreational, municipal, commercial and industrial uses.

Waters in New York State are classified based on their quality, location and their best use in the interest of the public as required by Title 3 of Article 17 of the Environmental Conservation Law. Part 700 of Title 6 NYCRR identifies fresh surface water classifications in New York State as follows: AA and A classifications are for drinking water and culinary or food processing purposes; B waters are for bathing; C for fishing; and D waters are for industrial cooling or processing water supply. A "T" in parentheses after the AA, A, B or C classification indicates that the dissolved oxygen concentration of the water body is suitable for trout spawning. Title 5 of Article 15 of the Environmental Conservation Law prevents any person or public corporation from changing, modifying or disturbing the course of any stream classified as AA, AA(T), A, A(T), B, B(T), or C(T) or removal of sand and gravel or other materials therefrom without a permit from DEC.

Water quality levels of the State are controlled through the State Pollution Discharge Elimination System (SPDES) Law. This law regulates,

through a permit system, discharges into surface and groundwater of the State by specifying limited quantities of identified substances that can be discharged.

Rivers with outstanding natural, scenic, historic, ecological and recreational values can be preserved, protected and enhanced through the Wild, Scenic and Recreational Rivers Law. Over 1,200 miles of rivers have been designated as Wild, Scenic and Recreational Rivers in New York State - giving New York the largest system in the nation. Most sections of rivers designated under this Act are in the Adirondack Park.

C. DRINKING WATER SUPPLIES

Roughly, 34 percent of the freshwater consumed in New York State, serving 6.2 million people, comes from groundwater supplies (NYS Department of Health, 1981). In Upstate New York approximately one-third of this groundwater use, serving 2 million people, comes from private water wells (NYS Department of Health, 1981). The remainder of the State's water use comes from 324 reservoirs (NYS DEC Division of Water, 1985a) and from other surface water supplies. Surface water supplies include streams, rivers, lakes and reservoirs, as well as the watersheds that supply them. Groundwater supplies come from aquifers of varying sizes. A formation that can supply water in significant amounts is called an aquifer. Aquifers are usually composed of sand and gravel, but any porous and permeable formation that can supply water in significant amounts is called an aquifer (see Figure 6.1). Approximately 10 percent of Upstate New York's land area and all of Long Island is underlain by potential drinking water aquifers (NYS DEC Division of Water, 1985a). Many of the groundwater supplies in the western portion of the State are located in the same vicinity as oil and gas operations.

Draft Upstate and Long Island Groundwater Management Programs have been prepared by DEC's Division of Water. These documents review facts about

FIGURE 6.1

Ground Water Aquifers and Their Uses

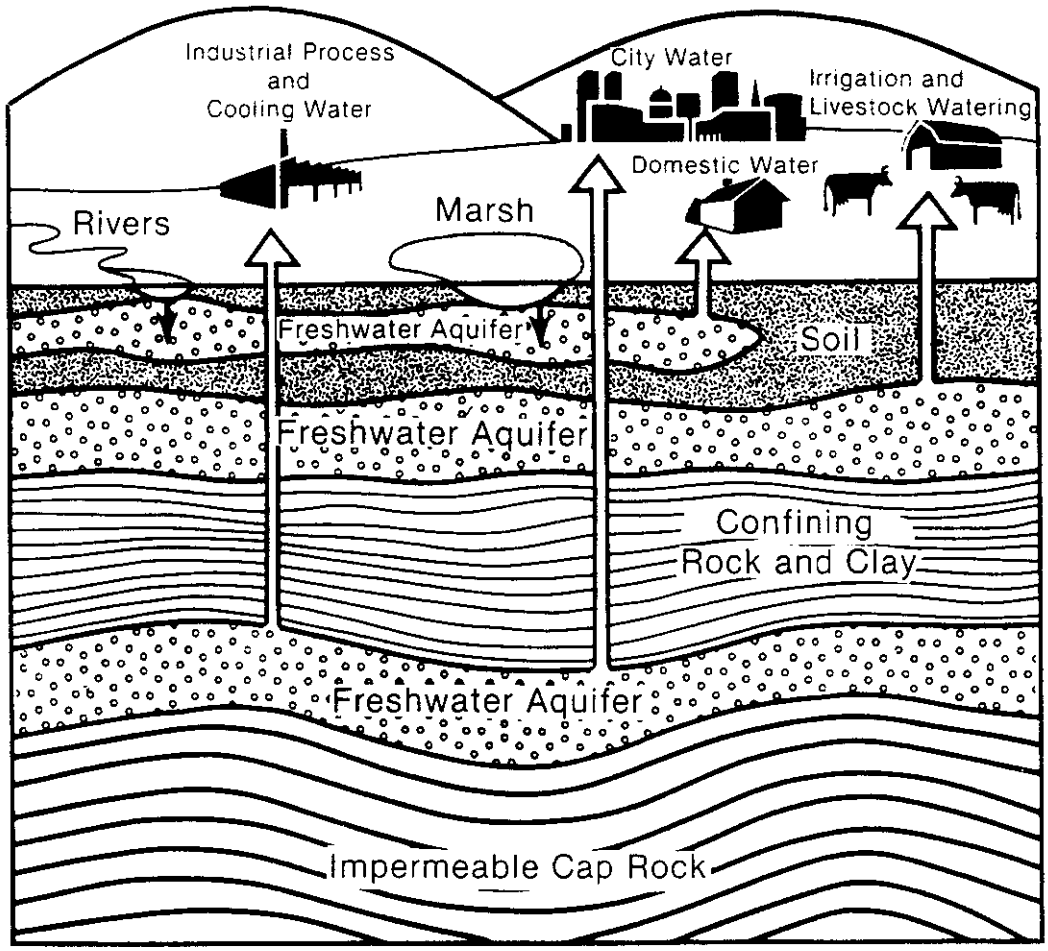


FIGURE 6.1

groundwater, describe the problems facing New York's groundwaters, summarize government programs which affect them and recommend management actions which federal, state, regional and local governments should take. Because of groundwater's relatively slow flow rates, contaminants introduced into an aquifer usually cannot be removed except over long periods of time. Hence, proper management is essential.

The draft plans identify two types of significant aquifers in New York State, primary and principal. Figure 6.2 shows that both types often coincide with the State's major stream valleys. This is because the sloping valley topography naturally funnels precipitation from large areas down into the valley, where highly permeable sand and gravel deposits can be found.

Primary and principal aquifers are defined by their level of use. Primary water supply aquifers are defined as highly productive aquifers presently being heavily utilized for public water supplies serving over 1,000 people. On Long Island, primary aquifers serve as the sole source of water for roughly three million inhabitants (NYS Department of Health, 1981). Principal aquifers are underground formations known to be highly productive or whose geology suggests abundant potential supply, but which are not presently heavily used for public water supply. The remaining sources of groundwater in the State are largely low-yielding and suitable only for relatively scattered individual household supplies. The U.S. Geological Survey has prepared detailed topography maps of 11 of the 19 primary aquifer areas. DEC has available, or will have available in the near future, detailed maps of the remaining 8 primary aquifers. In addition, regional aquifer maps at a scale of 1:250,000 are being prepared by the U.S.G.S. under contract with DEC and will be available by early 1987.

The State Sanitary Code sets the standards for public water supply

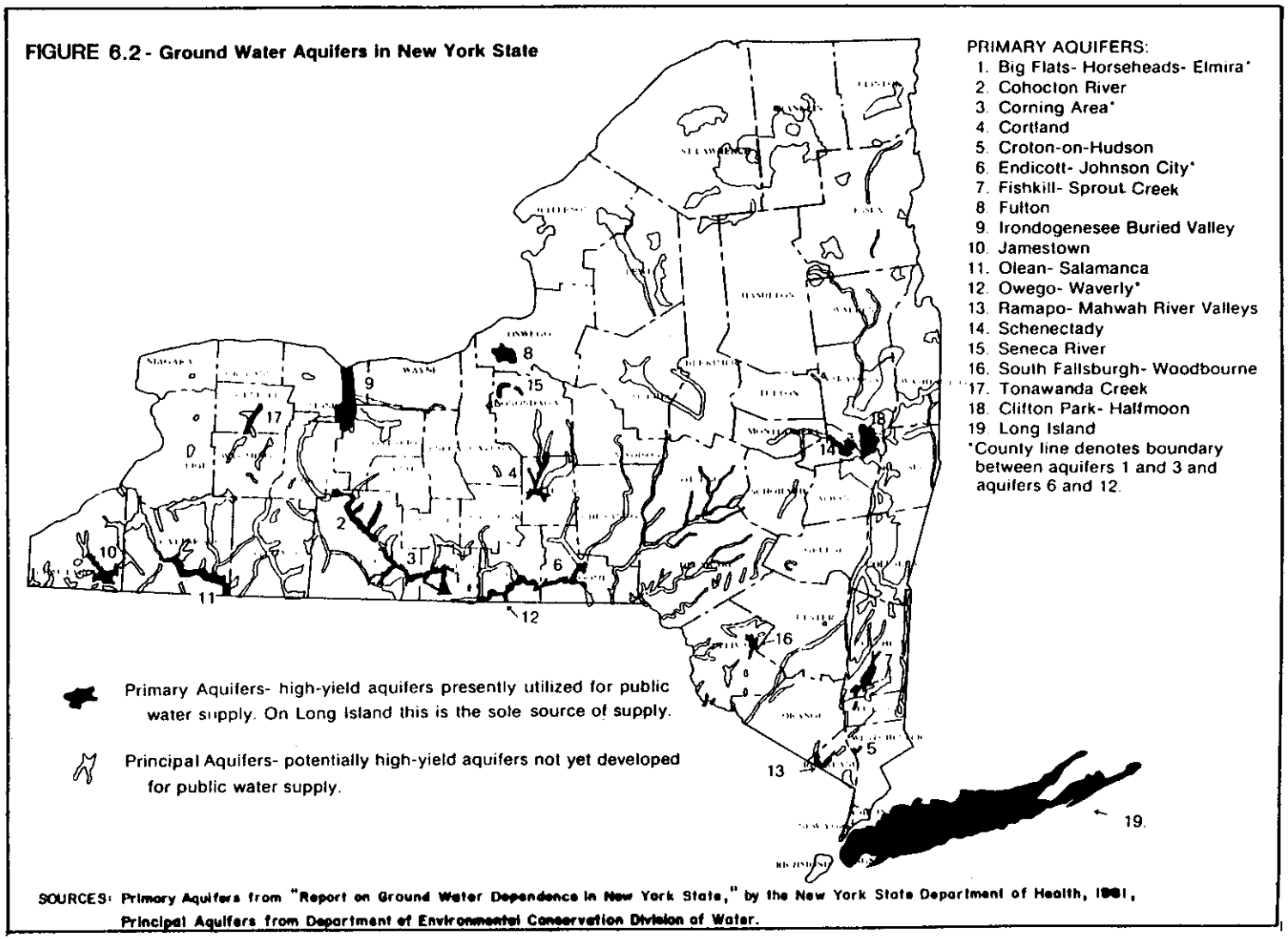


FIGURE 6.2
6-4a

systems, water well construction, protection of underground and surface sources of drinking water and classifies community water system operations. This code is enforced by the NYS Department of Health.

State legislation has been adopted to prohibit certain incompatible uses over federally designated sole source aquifers. The federally designated aquifers in New York cover Brooklyn, Queens, Schenectady, Binghamton-Johnson City and all of Nassau and Suffolk Counties. The law defines incompatible uses as: 1) direct or eventual discharge to groundwater of hazardous waste or any other substance designated by the Department that may contaminate the groundwater, and 2) storage of any such substance in sole source aquifer areas. Implementing regulations have not yet been adopted by the State.

In accordance with the Federal Safe Drinking Water Act, an Underground Injection Control Program has been developed by the U.S. Environmental Protection Agency (EPA) to protect underground sources of drinking water from improper emplacement of fluids through injection wells. The EPA New York City Regional Office administers the program for New York State. This program went into effect June 25, 1984 with compliance required by June 1985. There are five classes of wells which are regulated by this program. Two of these classes of wells are associated with oil, gas and solution mining: 1) Class II wells are injection wells associated with oil and gas production and liquid hydrocarbon storage and 2) Class III wells are defined as special process wells used in conjunction with solution mining of minerals. Drilling permits, monitoring and completion reports, rework records and plugging and abandonment plans, required by EPA for these wells, are similar to those required by DEC under the State's Oil, Gas and Solution Mining Program.

Watershed rules and regulations may be adopted by the Commissioner of Health to protect any or all public water supplies, under Section 1100 of Article 11 of the Public Health Law. The policy of the Health Department is

to only enact these rules and regulations when a specific request is made by a water supplier (NYS DEC, Division of Water, 1985a). The supplier then drafts regulations in consultation with the local public health engineer. The regulations can protect against a variety of potential threats to the water supply.

D. PUBLIC LANDS

There are a wide variety of public lands owned by New York State. These public lands are used for wildlife management, recreation, and/or are preserved for future generations to enjoy in their natural state.

The largest public land holding is the State Forest Preserve which includes approximately 2,500,000 acres of Adirondack and 272,000 acres of Catskill Forest Preserve lands. These are the most strictly protected public lands in New York and are governed by Article XIV, Section I, of the State Constitution which provides that:

> "The lands of the State, now owned or hereafter acquired constituting the Forest Preserve as now fixed by law, shall be forever kept as wild forest lands. They shall not be leased, sold or exchanged or be taken by any corporation, public or private, nor shall the timber thereon be sold, removed or destroyed."

The State also owns approximately 700,000 acres of State Forests outside the Adirondack and Catskill Parks managed by the DEC Division of Lands and Forests. Reforestation areas which comprise nearly 85 percent of the State Forest Lands are to be forever devoted to "reforestation and the establishment and maintenance thereon of forest for watershed protection, the production of timber and for recreation and kindred purposes..." The remaining 15 percent of State Forest lands outside the park are multiple use and environmental quality bond acquisitions.

Wildlife management areas cover another 170,000 acres in New York. These are managed by DEC's Division of Fish and Wildlife for conservation of animal and plant wildlife.

State Parkland is another major category of public lands in New York State. The Adirondack, Catskill and Allegany Parks are the largest and most important in the State. The Adirondack and Catskill Parks not only contain the State's Forest Preserve but also include substantial private lands. The Adirondack Park which is 40 percent publicly owned is approximately six million acres or the size of Vermont. The private lands of the Adirondacks fall under the administration of the Adirondack Park Agency, as provided for by the Adirondack Park Agency Act. All private lands are classified and a variance must be obtained from the APA or the local jurisdiction if an alternate use is desired for a particular area. The DEC's, Division of Lands and Forests manages the Forest Preserves and the Department of Parks, Recreation and Historic Preservation manages Allegany State Park and other State Parks exclusive of the Adirondacks and Catskills.

According to the State's Comprehensive Recreation Plan prepared by the New York State Office of Parks, Recreation and Historic Preservation, there are also 1,090,259 acres of local, state and federal recreational areas scattered throughout the rest of the State. Providing outdoor recreational opportunity for people is the primary focal point of the State's Park and Recreation Plan coupled with the recognized need to protect fragile land and water resources.

E. COASTAL AREAS

Coastal areas are sensitive because their proximity to water makes them attractive for numerous activities which may or may not be compatible. The Final Coastal Management Plan adopted by New York State under the Federal Coastal Zone Management Act (CZMA) sets the policy for activities taking place

in coastal areas including the Long Island shore, New York Harbor, Saint Lawrence River and Great Lakes coastlines and the Hudson River Estuary. New York's management program is intended to "promote the beneficial use of coastal resources, prevent their impairment, and deal with major activities that substantially affect numerous resources".

Any coastal project or activity which would normally require an Environmental Impact Statement or Negative Declaration under the State Environmental Quality Review Act, must also be consistent to the maximum extent practicable with the State Coastal Management Plan. An approved Coastal Assessment Form or Certificate of Consistency from the New York State Department of State is required. Consistency with a Local Waterfront Revitalization Plan must also be shown if a proposed action will be located in a community with an approved plan or one under review by the Department of State. Adoption of the local plans is authorized under the Waterfront Revitalization and Coastal Resources Act, Article 42, Executive Law.

F. WETLANDS

Wetlands are areas such as swamps, marshes or bogs which are either covered with water or have waterlogged soils. Wetlands are found in numerous shapes and sizes, and contain a variety of wildlife and vegetation including aquatic and semi-aquatic plants. They are found in many different places including edges of waterbodies, woods, in open fields or on farmland.

Wetlands are invaluable resources for flood control, erosion control, wildlife habitats, open space and protection and cleansing of water resources. For these reasons, many problems can arise if wetlands are disturbed. Dangerous flooding could occur if wetlands are filled in because these areas normally absorb extra water. In addition, waters which are protected and cleansed by wetlands may become contaminated if the wetlands are eliminated.

Specific State protection of freshwater and tidal wetlands is provided by Articles 24 and 25 of the Environmental Conservation Law. These Acts require mapping of wetland areas and the establishment of permitting procedures for activities proposed in wetland areas. Under the Freshwater Wetlands Act, all freshwater wetlands over 12.4 acres in size are regulated as well as smaller wetlands of unusual local significance. Local governments may assume jurisdiction for implementing the Freshwater Wetlands Regulations if they enact the proper local legislation and show the technical and administrative capability to manage the program. In addition, if a proposed project would involve the filling of a wetland, a federal permit may also be required pursuant to section 404 of the Federal Clean Waters Act of 1977, as amended.

G. FLOODPLAINS

Floodplains are lowland areas which serve to carry extra water when a rainstorm, melting snow or other phenomena cause streams or rivers to swell above their normal banks. Though normally dry, these areas are actually a part of the waterway and are needed to hold excess water after conditions such as heavy rain or thawing occur. Severe loss of life and property can arise when development takes place in these areas. The primary flood problem areas in New York State are found in the Allegany, Chemung, Susquehana, and Lower Hudson Drainage Basins.

The Federal Emergency Management Administration, authorized by the National Flood Insurance Act of 1968, has identified a "100 year flood line" along shorelines, downstream segments of creeks and around embayments which border sensitive flood prone areas. The 100 year floodline is the calculated water surface elevation having a one-percent chance of being equaled or exceeded in a given year as a result of a flood. Local communities that have flood prone areas are developing long term flood management programs, with the assistance of DEC and the federal government. Adoption of programs meeting

National Flood Insurance Act standards enables them to purchase flood insurance.

For communities which have not qualified or are not participating in the federal program, regulations were adopted by DEC to meet the minimum standards of the Act (6NYCRR Part 500). These regulations require that a permit be obtained from DEC before any project commences in a flood prone area.

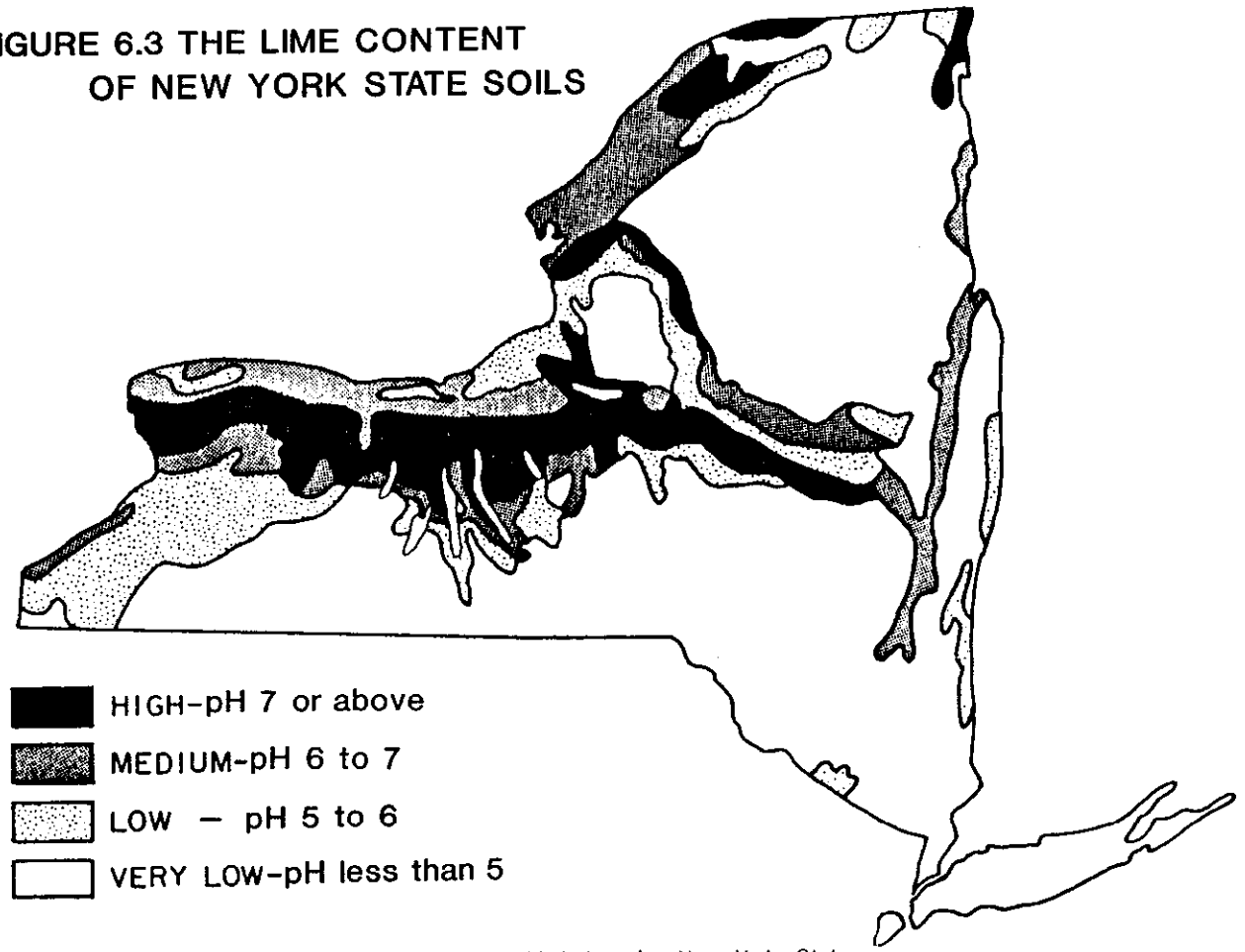
H. SOILS

New York contains a wide variety of soil types. Due to the glacial origin of the majority of the State's soils, it is common for land parcels of 50 to 150 acres to contain three to five different soil types. The diverse characteristics of the soils on a parcel have a direct influence on their natural suitability for different uses of the land. For example, soils with a low lime content may not be suited to certain agricultural crops and cannot adequately neutralize acid substances introduced in the environment. Thin, sandy, or droughty soils and soils on steep hillsides are susceptible to erosion. Wet soils cannot support permanent structures without special precautions.

Figure 6.3 shows the lime content of New York soils. Most New York soils have a low to very low lime content. Figure 6.4 illustrates a variety of other soil limitations in New York including those that are droughty, shallow, stony, wet or located on hillsides or more mountainous terrains. As the map shows, the diversity and interspersion of soils in the State makes it difficult to generalize about the susceptibility of soils to any one type of activity.

The USDA Federal Soil Conservation Service has mapped and described in detail the soil types of each county. County Soil and Water Conservation Districts (SWCD's) provide soils data and administer the State Conservation

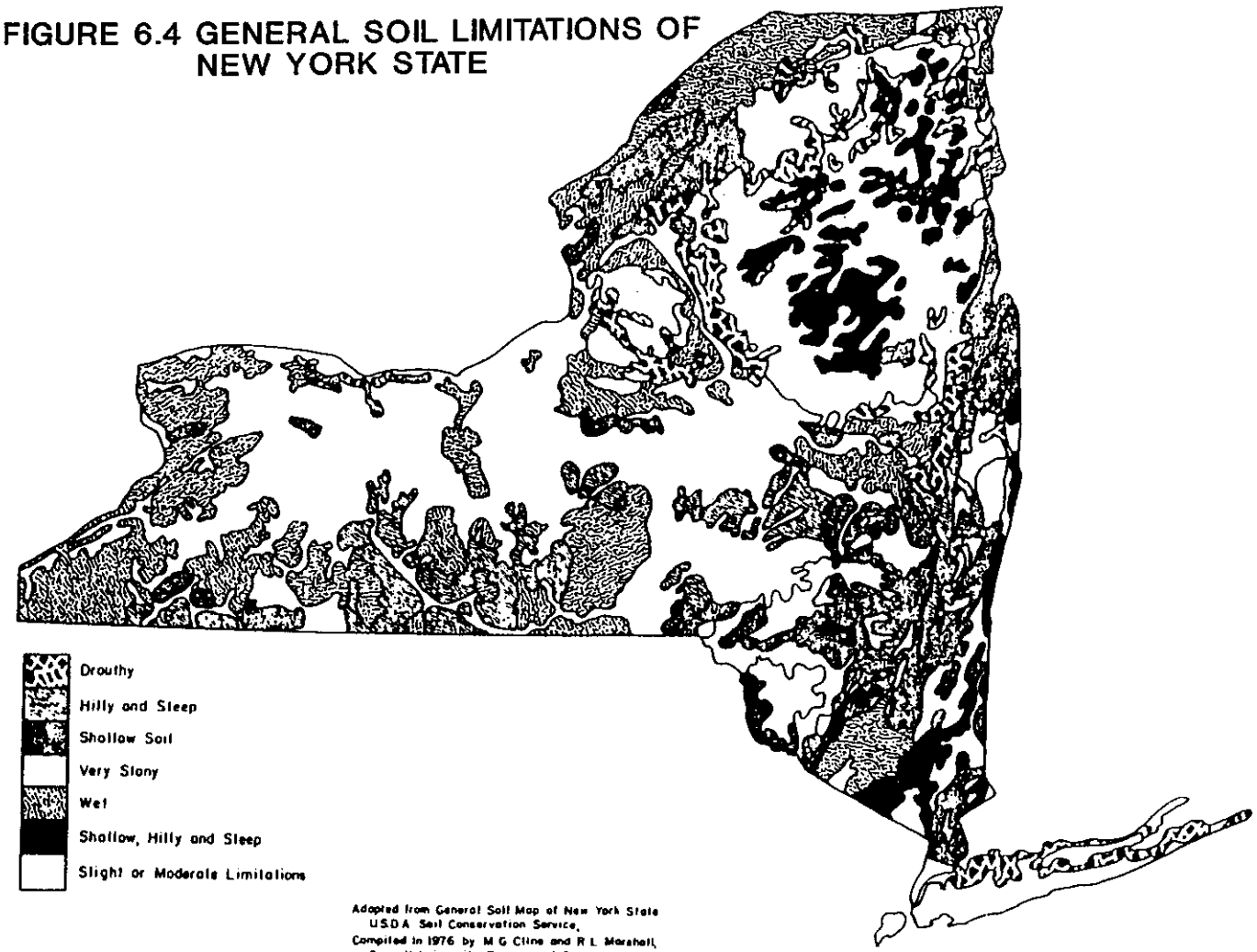
FIGURE 6.3 THE LIME CONTENT
OF NEW YORK STATE SOILS



Compiled from data provided by the New York State
Department of Agriculture & Markets

FIGURE 6.3
6-10a

FIGURE 6.4 GENERAL SOIL LIMITATIONS OF NEW YORK STATE



Adapted from General Soil Map of New York State
U.S.D.A. Soil Conservation Service,
Compiled in 1976 by M.G. Cline and R.L. Marshall,
Cornell University Experiment Station

FIGURE 6.4
6-10b

Planning Law for the majority of the State's private land resource. SWCD's can also assist in choosing sites for particular activities to minimize impacts. Most counties had detailed soil surveys done in the 1960's - 80's. Depending on the county, however, data may also be available from the 1920's and/or 1930 - 1950's.

In addition to data available through the soil surveys, the New York State Land Classification System (LCS) ranks the natural capability of every soil type throughout the State for agricultural production. The LCS is a ready source to identify prime agricultural soils (soil groups 1 - 4), mid-range agricultural soils (soil groups 5 - 7) and marginal to poor soils (soil groups 8 - 10).

I. AGRICULTURAL LANDS

Agricultural production is vitally important in New York since 33 percent of the State's land resources are devoted to farm ownership and $2.8 billion in farm commodities are produced annually (Blot, 1985, personal communication #4). In addition, there are roughly 4,000 agricultural service firms, and close to a total of 1,500 farm equipment dealers, farm supply companies, and handlers of raw farm products (Blot, 1985, personal communication #4). There are also nearly 160 producers of agricultural chemicals and firms manufacturing farm and food product machinery. The 1977 Census of Business Industry indicates that there are 175,200 workers employed in New York's food processing industry (Blot, 1985, personal communication #4). The value added by the manufacture of food and kindred products was $3.3 billion and the value of shipments was $8.9 billion (Blot, 1985, personal communication #4).

Variations in topography, soil type and other factors result in a wide range of natural capabilities of the State's agricultural lands. Significant investments of private as well as public time and dollars have gone into improving New York State's agricultural land resource. This includes

FIGURE 6.5 THE FOURTEEN AGRICULTURAL REGIONS OF NEW YORK STATE

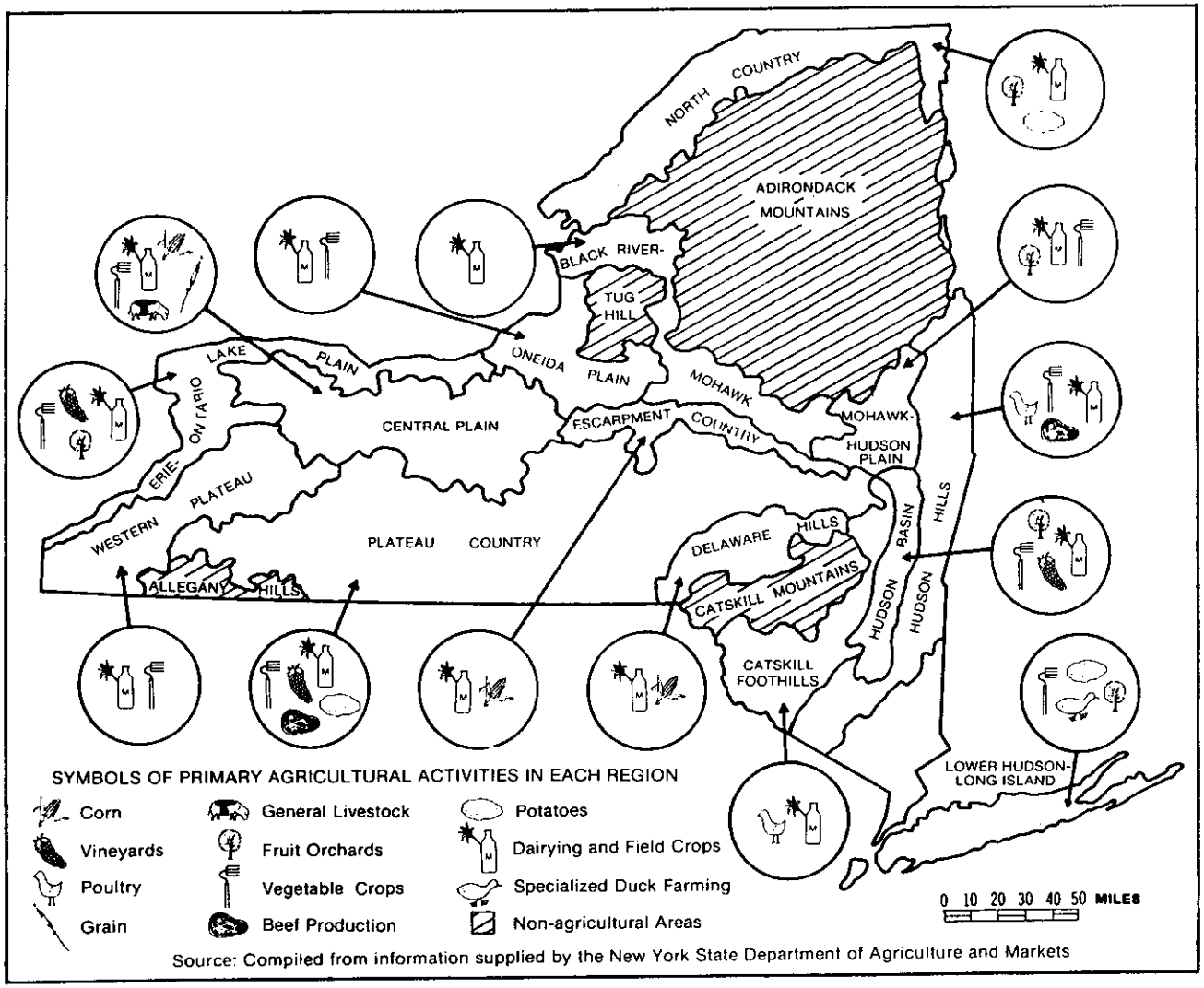


FIGURE 6.5
6-11a

FIGURE 6.5 continued

Erie-Ontario Plain - Contains generally level topography, many highly productive soils, and a long growing season, due to the Great Lakes, which are compatible to intensive and specialized agriculture.

Western Plateau - Contains broad hills and shallow valleys, many medium-textured acid soils and widespread agriculture throughout the region.

Central Plain - This is the second largest agricultural region in New York State containing good to excellent agricultural land. Its terrain ranges from flat to rolling and it soils are ideally suited to modern agriculture with their naturally high pH, fertility and good water holding capacity.

Oneida Plain - Contains good precipitation, a growing season better than much of New York State, and a favorable topography for agriculture.

Escarpment Country - Contains primarily medium to fine textured soils with high pH levels.

Plateau Country - This is the largest agricultural region in the State containing plentiful rainfall and a cool-continental climate. Its valley farms generally have good topography soil and length of growing season, while the uplands have a shorter, cooler growing season. Areas too steep for farming or which lack a favorable variety of soils remain in forest.

Mohawk-Hudson Plain - Contains mostly sandy, gently rolling lands, soils that are either predominately dry due to excessive natural drainage or wet depending on seasonal fluctuations and low to medium natural fertility and pH requiring ongoing maintenance.

North Country - Contains a wide range of soils and topography, and a climate that is somewhat more rigorous than in other regions with its cold winters and cool growing seasons; with some modifying effects from the St. Lawrence lowlands and the Champlain Basin.

Black River-Mohawk - Contains a cool, high-moisture, continental climate and a topography generally suited to modern agriculture.

Delaware Hills - Contains a contrasting topography of upland valleys and hills. Areas that are too steep for agriculture remain in forest.

Hudson Hills - Although variations in topography and soils occur throughout the region, the long growing season, good rainfall and consolidated management of interspersed soil-types are highly favorable to support the region's agriculture.

Catskill Foothills - Contains predominantly shallow, stony and infertile soil with a naturally low pH level and small scattered areas of good soil and good topography.

Hudson Basin - The terrain is generally favorable for agriculture and the climate is characterized by a long growing season and good precipitation.

Lower Hudson - Long Island - Agriculture is mostly confined to eastern Long Island. This area contains the State's longest growing season due to its ocean dominated climate, with mild to moderately cold winters and warm summers.

FIGURE 6.5 (CONT)

improving soil productivity, improving soil moisture capability, establishing soil retention systems and improving drainage systems.

Agricultural lands are sensitive to alterations and they are not easily converted back to agriculture once they are transformed directly through development or by the secondary impacts of development. Temporary non-agricultural uses of agricultural land may result either in permanent adverse impacts in extreme cases, or temporary adverse impacts depending on safeguards and land restoration measures that are applied.

As illustrated in Figure 6.5, the State can be divided into 14 different agricultural regions based on the distinctive land forms and soils in each of these areas. The Central Plain and part of the lower Hudson-Long Island regions contain some of the best natural conditions for agriculture, though portions of other areas with applied management techniques are comparable in a variety of commercial agricultural production activities.

Much of the agricultural land in New York State is included within an Agricultural District as authorized under the New York State Agriculture and Markets Law, Article 25AA. At the end of 1985, there were 416 Certified Agricultural Districts in 49 counties encompassing just over 8.5 million acres of land. Districts are created by county government in response to farmer landowner petition. The Department of Agriculture and Markets certifies that each district is consistent with the law and overall state purpose. The benefits of establishing districts include: 1) constraints on regulations that could hinder farming, 2) requirements that State Agencies adopt policies to encourage and support farming, and 3) special review of public funding and land acquisitions in Agricultural Districts. The law also provides a mechanism allowing eligible farmland to be assessed according to its agricultural productivity value.

The Soil and Water Conservation District Law requires landowners of farms and woodlands greater than 25 acres in size to prepare a Soil and Water Conservation Plan. These plans carefully identify soil types and other natural features of the land and provide management alternatives to reduce or eliminate the occurrence of environmental degradation under the intended land use objectives of the landowner.

According to the State Environmental Quality Review Act, zoning changes affecting 25 or more acres of land in an Agricultural District or a project or an action involving the physical alteration of two and half or more acres of land in an Agricultural District are Type I actions. Type I actions are more likely to have an environmental impact and therefore require a more thorough environmental assessment and possible preparation of an environmental impact statement.

J. INTENSIVE TIMBER PRODUCTION AREAS

Forest lands cover a major portion of the State. As of 1982, approximately 59 percent of New York, or 17.7 million acres of land, supported some kind of woody plant growth (NYS Department of Agriculture and Markets, 1982). Forest lands have a vital role not only for the timber production industry, but also in watershed protection, screening and absorbing major forms of air pollution and retarding soil erosion. Soil erosion in forested areas is ten times slower than the average rate of erosion from all lands in the State. Forested areas are also the location of major outdoor recreation sites including hiking trails and campgrounds.

State forest cover is most dense in the Adirondack Park and the areas of the State bordering the Park to the north and northwest. However, the greatest intensity of timber harvesting is in Essex, Warren, Saratoga and Fulton counties which harvest over 10 cubic feet of wood per acre per year and in Clinton, Washington, Hamilton, Herkimer, Lewis, Montgomery, Delaware,

Wyoming, Chautauqua, and Cattaraugus counties which harvest 6 to 10 cubic feet of wood per acre per year (NYS DEC Division of Lands and Forests, 1981). No timber production takes place on the Forest Preserve lands in the Adirondack and Catskill regions because of the protection provided them by Article XIV of the State Constitution.

Population and economic growth have a major effect on the amount of forested areas because of increased competition for space and increased demand for forest products created. Competition for space also relagates intensive timber production to lands with the greatest restraints for other uses: too infertile, wet or steep for agriculture; too steep or poorly drained for residential development; or too inaccessible for manufacturing of industrial goods. The DEC Division of Lands and Forests is preparing a final Strategic Plan for Forest Resources in New York State.

K. SIGNIFICANT HABITATS

Significant habitats are defined by DEC as areas which "provide some of the key factor(s) required for survival, variety or abundance of wildlife, and/or for human recreation associated with such wildlife". Examples of significant habitats include areas containing endangered or rare species, high concentrations of wildlife, concentrated migration routes, urban open space of value as wildlife habitat, uncommon land forms, unusual vegetative associations that support unusual wildlife, and areas containing features critical to a particular species such as deeryards, nesting areas and spawning areas.

Fish and wildlife habitats are highly susceptible to environmental changes. Human activities such as stream flow diversions, excavation, filling, drainage, vegetative clearing and construction can have a significant effect on habitat and therefore on the wildlife it can sustain. DEC is

therefore identifying, documenting and mapping significant habitats across the State so that this information is available when important decisions need to be made about activities in an area that might be considered significant. Approximately 1,000 habitats have been identified for protection.

Endangered, threatened, rare and exploitably vulnerable species in significant habitats can be protected in a number of ways. The State's Endangered Species Act requires the listing of species meriting protection which should not be picked or removed from their native habitat. The State's Freshwater Wetlands Law can protect rare plants growing in wetlands. The northern wild monkshood and small whorled pogonia are endangered and threatened plants, respectively, protected by the U.S. Fish and Wildlife Service. When federal funds are spent on projects in New York that may affect these two species, it is within the power of the federal government to withhold funds until these plants are afforded protection. The New York State Natural Heritage Program also has an extensive list of rare plants found in New York that is constantly updated to reflect new information. In addition, acquisition of fish and wildlife areas through the Environmental Quality Bond Act, the State Nature and Historic Preserve Trusts, and nonprofit groups is another way these areas are protected.

The SEQR review process also requires an analysis of the impacts of a project on wildlife habitats and a review of alternatives before a final decision is made on development. In addition, SEQR allows local agencies to designate an area that has an exceptional or unique character as a critical environmental area (CEA). Designation of a CEA is subject to public review and comment and proposed activities in CEA's are treated as Type I actions under SEQR.

L. AREAS OF HISTORIC, ARCHITECTURAL, ARCHEOLOGICAL, AND CULTURAL SIGNIFICANCE

Areas of historic, architectural, archeological and cultural importance are considered valuable because of the link they provide to our past. Once these areas are destroyed, they can never be replaced.

The State is actively identifying, evaluating and protecting cultural resources that are significant in American history, architecture, archeology and culture. Part of this is accomplished through buying these areas outright through the State Nature and Historic Preserve Trusts or protecting areas by nominating and having them accepted on the National or State Registers of Historic Places as provided for by the National Historic Preservation Act of 1966 and the State Historic Preservation Act of 1980. Areas listed or eligible for listing on the National or State Registers, or included on the State Inventory must receive special consideration before they are disturbed or impaired. Under the State Law, it is the responsibility of every State agency, to the fullest extent practicable and consistent with other provisions of the law, to avoid or mitigate adverse impacts to properties registered, inventoried or deemed eligible for listing on the State Register by the Commissioner of Parks, Recreation and Historic Preservation. There are roughly 2,320 total nominations representing 54,000 properties for the National Register of Historic Places located throughout New York and 35 historic sites owned and operated by the State (LeFrank, 1987, personal communication #41).

M. CLEAN AIR

New York has made significant progress in improving our air quality and now meets the federal ambient air standards for most areas of the state. The only primary non-attainment areas are: 1) New York City metropolitan area for ozone and carbon monoxide, 2) Syracuse for carbon monoxide and 3) Buffalo for

total suspended particulates. The control of toxic air emissions and the long range transport of pollutants which cause, among other problems, the Northeast's acid rain, are air pollution problems gaining increasing attention.

Although some point sources are responsible for large quantities of ambient air pollution, much of this pollution comes from the accumulation of emissions from numerous minor sources such as cars and small commercial and industrial operations. Ozone, pervasive throughout the Northeast corridor, is one such pollutant. It is formed when hydrocarbons from a variety of sources mix with oxides of nitrogen in the presence of sunlight.

Toxic emissions are also being controlled by New York State's air pollution regulations. Emissions control equipment must remove a minimum of 99 percent of human carcinogens and other toxic substances designated high risk by the Department of Health. Lower emission controls are allowed only when the currently available technology cannot reach the 99 percent removal level.

N. VISUAL RESOURCES

Visual aspects of the environment, both man-made and natural, have an important environmental resource value. However, because their value cannot be precisely defined, a degree of subjectivity exists about the importance of certain visual resources.

On a macro scale, the State has a number of important natural and man-made visual resources. Natural visual resources of high quality include most of the rural portions of the State and particularly the Adirondack and Catskill Parks, the Hudson River Valley, the Southern Tier and Great Lakes regions.

On a smaller scale, visual impacts can be identified based on the degree of compatibility a proposed project has with the existing environment, whether

or not it enhances or degradates the visual appearance of the area, and the length of time a particular visual impact will be in existence. The visual impact of proposed actions is gaining increasing attention statewide and DEC is in the process of developing aesthetic compatibility standards and regulations.