
III. Open Space Resources in Ulster County

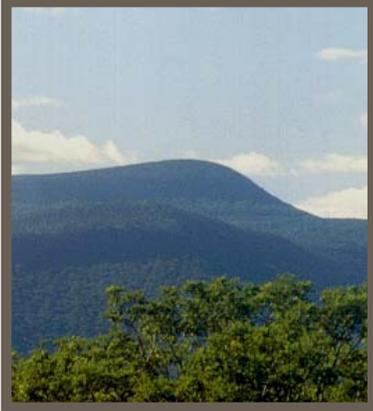
Overall, Ulster County has a remarkable amount of protected open space. About 160,000 acres, or more than half the Catskill Forest Preserve is located in Ulster County (with Greene, Delaware and Sullivan containing the remaining half). This land is mountainous and is mainly located in the western portion of the county. In the eastern portion of the county, the Hudson River Valley dominates the landscape, with several rivers, farmlands, and rolling hills. The Shawangunk (“SHON-gum”) Mountains, located in the southern portion of the county, form a distinctive ridge noted for its natural, scenic, historic, and recreational resources. The majority of the population resides in the eastern and southern parts of Ulster County.

State owned land in the Catskills is regulated by the New York State Constitution (article XIV), which stipulates that the Catskill Forest Preserve lands should remain “forever wild.” Under this provision, the state permits hunting, fishing, hiking, camping, boating, horseback riding, and limited snowmobiling. More intensive uses – such as ski areas – require special constitutional authorization before they can be developed. The City of New York is a large landholder, with the Ashokan Reservoir and over 9,000 acres of land in the towns of Olive and Hurley. The Rondout Reservoir has 1,300 acres of land in the town of Wawarsing. New York City also holds lands associated with the Catskill and Delaware aqueducts.



Bonticou Crag is an escarpment and the highest point on the eastern side of the Shawangunk Ridge, world-famous with climbers for its cliffs.

Ulster County Open



1. Protected Open Space:

Areas already legally protected (e.g., Catskill Forest Preserve)



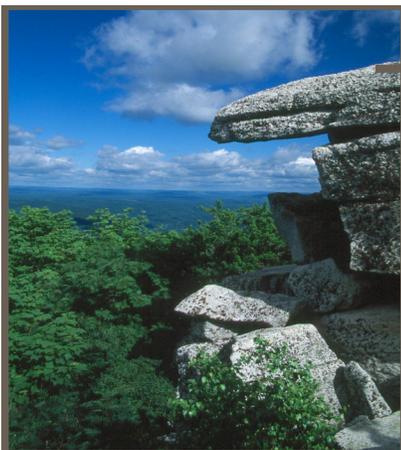
2. Water Resources:

Surface, ground, watersheds, aquifers, aquifer recharge areas, floodplains, wetlands and vernal pools



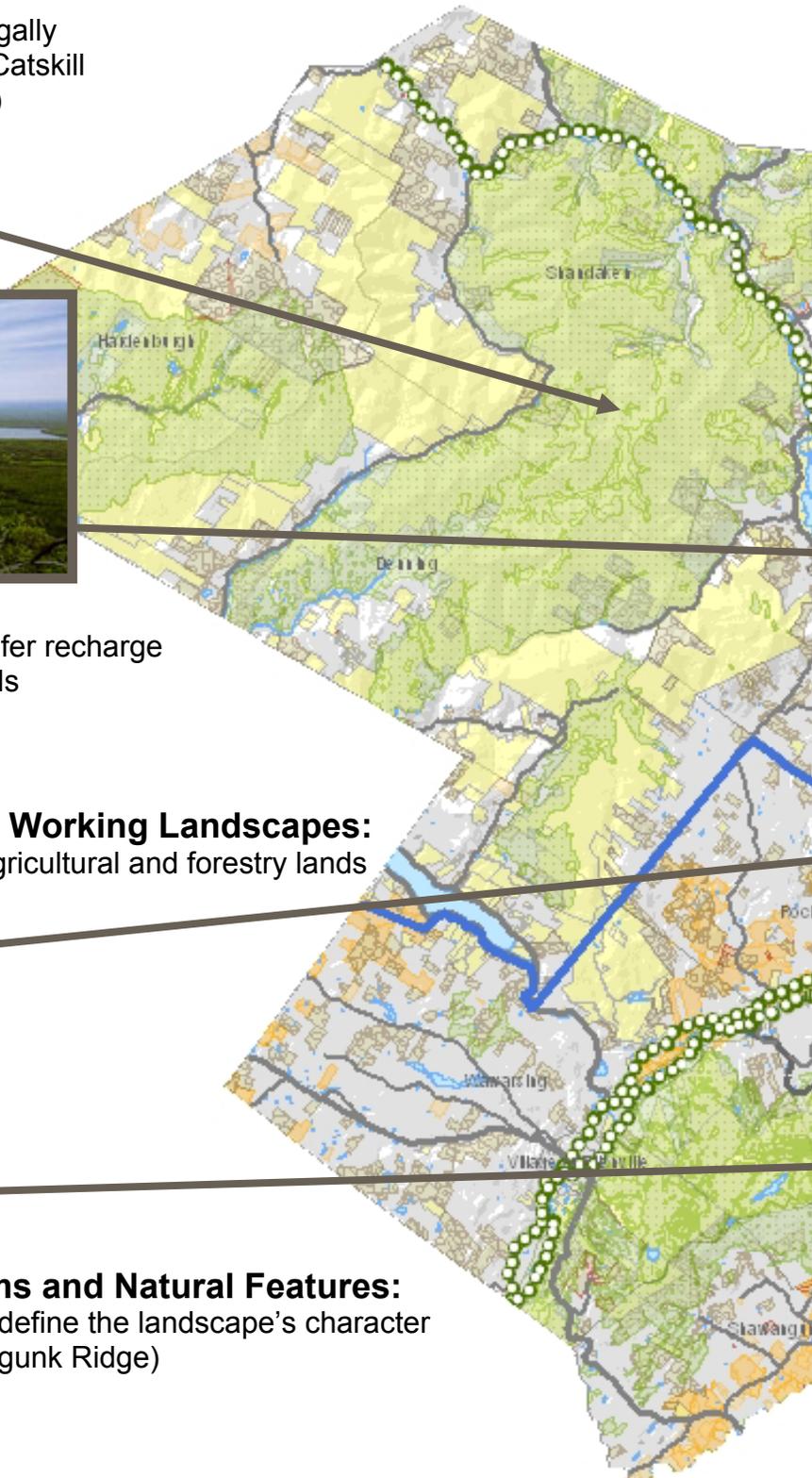
3. Working Landscapes:

Agricultural and forestry lands



4. Landforms and Natural Features:

Features that define the landscape's character (e.g., Shawangunk Ridge)



Space Resources



7. Recreation Resources:
rural and urban parks, shorelines, fishing and hunting areas, trails, and tourism sites (e.g., Ulster Landing Park)



6. Cultural and Historic Resources
Federal, state and locally designated structures, sites and districts (e.g., Kingston Rondout Waterfront District)

5. Ecological Communities:
diversity of species and ecosystems, exceptional forest or plant community, unique and wildlife habitats, wetlands, shorelines (e.g., Black Creek)



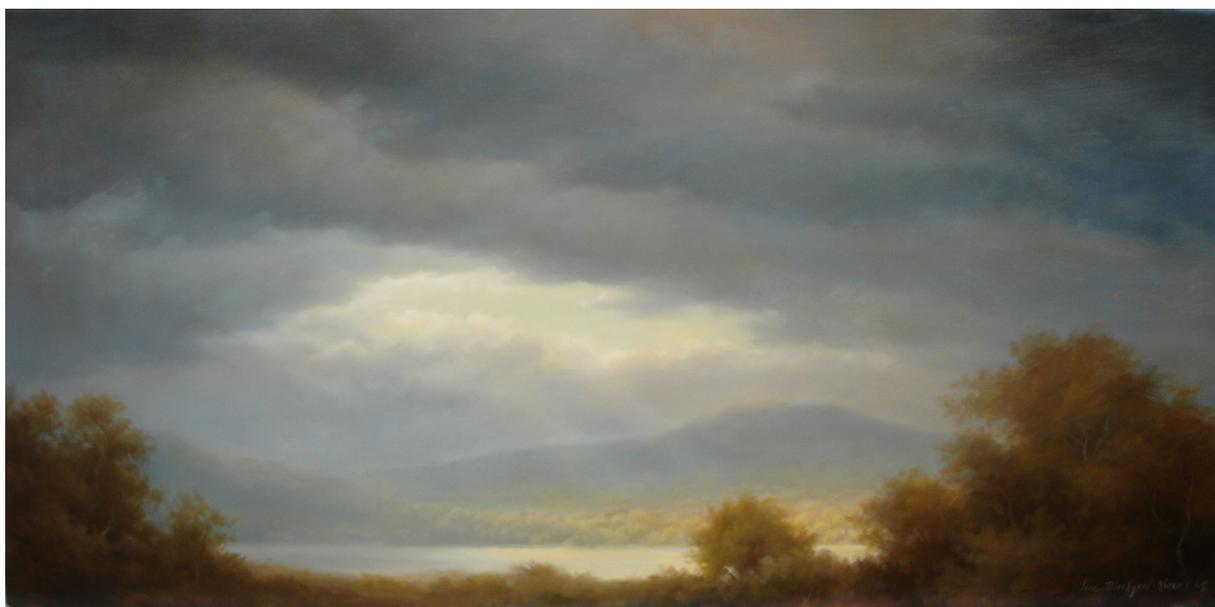
Other major areas of protected open space in the county are in the Shawangunk Ridge, including Minnewaska State Park (about 12,000 acres), and Mohonk Preserve (over 6,500 acres), the largest privately-held preserve in New York.

There are several nonprofit conservation groups actively protecting significant pieces of land. As part of its Shawangunk Ridge Protection Program, the Open Space Institute (OSI) has protected over 18,000 acres since 1985, including the March 2005 acquisition of a threatened 106-acre parcel at the gateway to the Minnewaska State Park Preserve. In 2000, OSI partnered with the Trust for Public Land to protect the 5,000-acre Lundy Estate, the largest privately held parcel in the Catskills. The Nature Conservancy, which has named the Shawangunks one of its “Last Great Places,” has protected more than 12,000 acres of the Ridge. Scenic Hudson has protected more than 1,000 acres of land within the Ulster County towns of Esopus and Lloyd, with most of that land in proximity to the Hudson River.

Protected open space and other resources described in this plan are not evenly distributed across the county.

The conservation of natural resources is the fundamental problem. Unless we solve that problem, it will avail us little to solve all others.

—Theodore Roosevelt



“Rolling Clouds - The Catskills from the Hudson River ” by Jane Bloodgood-Abrams, Kingston.

Resource Category 1: Protected Open Space

Areas already legally protected

Definition

Protected open space is any public or private land permanently protected from development, such as forest preserves, dedicated parkland, parkways, nature preserves, and cemeteries. In developed areas, protected open spaces include parks, buffer strips, historic sites, and setbacks on private property.

Inventory

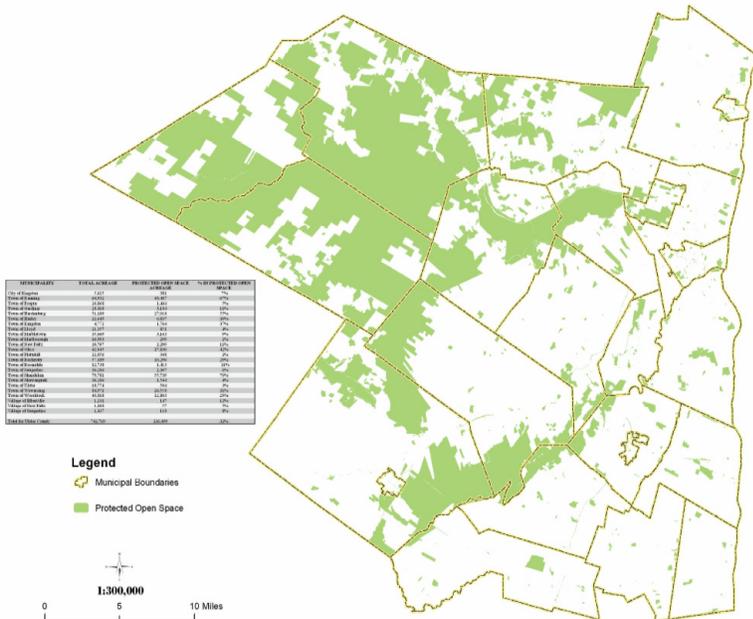
Approximately 32% of Ulster County is protected open space. Protected Open Space map (See Map Book, Map 1) shows that it is geographically unequal across the county. (See Chart 1, Protected Open Space by Municipality.) Many important resource areas, such as water

resources and ecological communities (biodiversity), are already protected and these lands also provide significant public access.

The majority of protected open space is concentrated in the Catskills as part of the Catskill Park, and lands that are associated with the New York City’s water supply holdings, and along the Shawangunk Ridge as part of the Minnewaska State Park and other “preserve” lands. Private land trusts and other nonprofits have protected over 50,000 acres in Ulster County.

Goal:

Improve stewardship of County-owned lands; work with land trusts and municipalities to set standards for coordination, planning and stewardship; protect open space where significant water resources and ecological communities are at risk; improve connectivity of open space corridors, buffer areas and trails throughout the county.



Map 1: Permanently Protected Open Space Resources.
See Map Book for full-sized version of this map.



Mount Tremper and Esopus Creek

Management Issues

Significant vulnerable open space resources are not permanently protected. Chief among these are water related resources including stream corridors and water supply areas such as local reservoirs and groundwater aquifers. More developed communities often do not recognize the importance of protecting marginal spaces or landscaping and tree cover as part of their built landscapes. The distribution of open space resources varies widely across the county. Overall, a better understanding of open space resources is needed. Differing expectations of the public and local governments relative to those who own the land or easement contributes to frustration. Monitoring of easements is difficult and long term costs are not known. Tracking easements through the real property system is difficult.

Chart I: Permanently Protected Open Space in Ulster County by Town			
Municipality	Total Acreage	Protected Open Space Acreage	% in Protected Open Space
City of Kingston	5,625	381	7%
Town of Denning	64,932	43,487	67%
Town of Esopus	26,868	1,444	5%
Town of Gardiner	28,418	3,184	11%
Town of Hardenburgh	51,189	27,918	55%
Town of Hurley	22,649	6,837	30%
Town of Kingston	4,772	1,764	37%
Town of Lloyd	21,357	851	4%
Town of Marletown	35,669	3,163	9%
Town of Marlborough	16,993	299	2%
Town of New Paltz	20,707	2,299	11%
Town of Olive	42,045	17,830	42%
Town of Plattekill	22,856	348	2%
Town of Rochester	57,109	16,296	29%
Town of Rosendale	12,738	1,413	11%
Town of Saugerties	36,286	2,307	6%
Town of Shandaken	79,781	55,739	70%
Town of Shawangunk	36,286	1,544	5%
Town of Ulster	18,774	504	3%
Town of Wawarsing	84,971	26,701	31%
Town of Woodstock	43,818	12,803	29%
Village of Ellenville	1,231	147	12%
Village of New Paltz	1,088	57	5%
Village of Saugerties	1,437	118	8%
Total for Ulster County	737,599	227,434	31%

Sources: Catskill Center for Conservation and Development and Open Space Institute, 2006

Land Trusts

Definition

A land trust is a nonprofit organization that, as all or part of its mission, actively works to conserve land by undertaking or assisting in land and conservation easement acquisition, or by its stewardship of such land or easements..

Inventory

There are several land trusts working in Ulster County. As of 2007, private land trusts and other nonprofits have protected over 50,000 acres in Ulster County. Chart 2 (next page) lists the land trusts that work here. The lands they have protected are included in Map 1 and the Natural Resources Inventory (NRI). There are also a several nonprofit organizations within the region that are not land conservancies per se that own and manage a particular individual preserve or historic site. Examples in Ulster County include Frost Valley YMCA , the John Burroughs Association, and the Saugerties Lighthouse Conservancy. These kinds of properties may be considered protected only as long as the nonprofit organizations owning them remain solvent and maintain their same or similar missions into the future. Similarly, conservation easements developed by land trusts may be vulnerable without effective monitoring and stewardship.



Purchased by the Open Space Institute from the Town of Ellenville in 1996, the 5,400-acre Sam's Point Preserve, at 2,200 feet above sea level, is the highest point on the Shawangunk Ridge. Managed as an environmental preserve by the Nature Conservancy since 1997, this permanently protected landscape also contains 10 miles of moderately difficult biking trails.

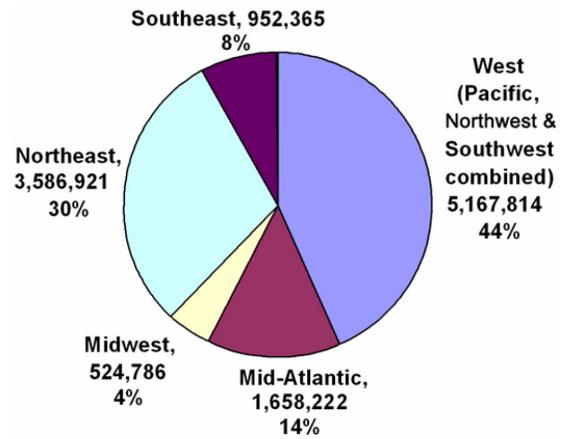


Management Issues

Land trusts play an important role in the protection of open space. There are more than 1,500 land trusts in the United States

Slabsides is the cabin in West Park, Town of Esopus, where renowned naturalist John Burroughs wrote numerous essays important in the evolution of the United States conservation movement . His work helped influence the protection of the Catskill Forest Preserve, which is designated as "Forever Wild."

and they have protected more than five million acres. A partnership among local governments, county government and land trusts can accomplish greater preservation goals without overburdening tax payers with land acquisition expense. Land trusts' expertise can be invaluable. As the costs and responsibilities associated with holding easements increase, they may require additional support for building their organizational capacity. The land trusts have developed a collaborative model for sharing information and monitoring that is supported by the goals and recommendations of this plan.



While the West has the highest number of acres preserved, the Northeast gained the most acreage under conservation easement, nearly tripling the acres held under easements in the past five years. (Source: Land Trust Association)

Chart 2: Ulster County Nonprofit Land Conservation Organization Summary

Nonprofit land conservation organizations working in the seven-county Catskill region (*not counting the nonprofit Watershed Agricultural Council, which is described separately in conjunction with NY City Watershed protection*) are summarized as follows:

Organization	Area of Interest
The Nature Conservancy (www.nature.org)	Multiple counties based on natural resources
Open Space Institute (www.osiny.org)	Multiple counties (regionally and statewide)
Trust for Public Land (www.tpl.org)	Multiple counties (regionally and nationally)
Scenic Hudson Land Trust (www.scenichudson.org)	Multiple counties along Hudson River corridor
National Audubon Society (www.audubon.org)	Multiple counties including chapters
NY/NJ Trail Conference (www.nynjtc.org)	Multiple Counties along Long Path corridor
Mohonk Preserve (www.mohonkpreserve.org)	Portion of Ulster Co.
The Catskill Center for Conservation and Development (www.catskillcenter.org)	Multiple counties
Wallkill Valley Land Trust (www.wallkillvalleylt.org)	Portion of Ulster Co.
Woodstock Land Conservancy (www.woodstocklandconservancy.org)	Town of Woodstock, Ulster Co.
Esopus Creek Conservancy (www.esopuscreekconservancy.org)	Town of Saugerties in Ulster Co.
Rondout-Esopus Land Conservancy (www.relandconservancy.org)	Portion of Ulster Co.
Shawangunk Conservancy (www.shawangunks.org)	Portion of Ulster Co.
Cragsmoor Conservancy	Portion of Ulster Co.

Resource Category 2: Water Resources

Surface, ground, watersheds, aquifers, floodplains and wetlands

Definition

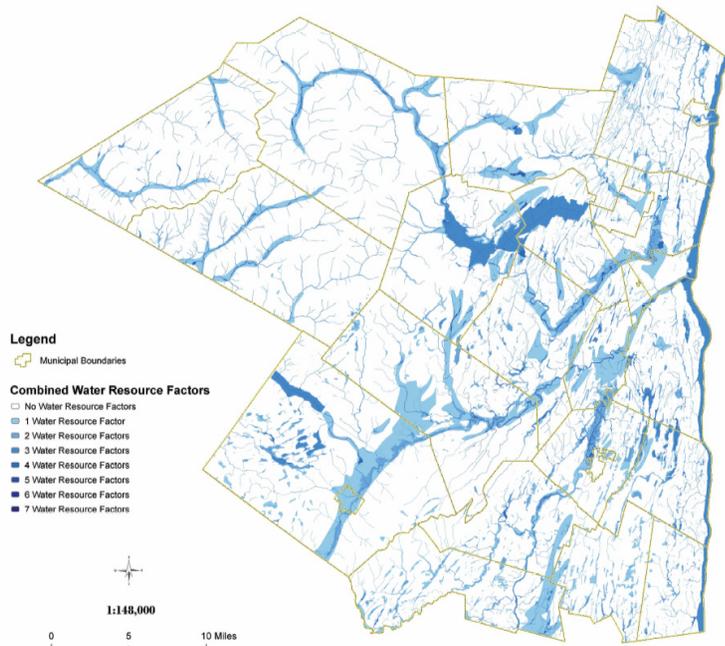
The general term “water resources” encompasses the concepts of availability (the location, spatial distribution, or natural fluctuations of water); accessibility (given availability, whether people can access it or afford water in adequate quantities); and quality (whether accessed water is free of contaminants and safe for consumption). This plan divides water resources into five subcategories: wetlands, aquifers, surface waters, floodplains and watersheds. It also examines water resources that provide water supply and recreational opportunities.

Goal:

Ensure that the water resources of Ulster County meet their highest and best use categories and are available for water supply purposes through the coordination of planning, management, maintenance, stewardship, monitoring, and enforcement of existing laws and developing policies related to riparian corridors, drainage areas, wetlands, and vernal pools.

Inventory

Ulster County has three major drainage areas that lead to the Hudson River. They are the Wallkill River and the Esopus and the Rondout Creeks. The Neversink and Beaverkill rivers are within the Delaware River watershed. Each has been significantly affected by glaciation and have associated broad flood plains along valley floors. Wetlands also abound in the glacial outwash plains in the eastern portion of the county. There, and in the Catskills, many unconnected wetlands can be found that are not subject to federal control.

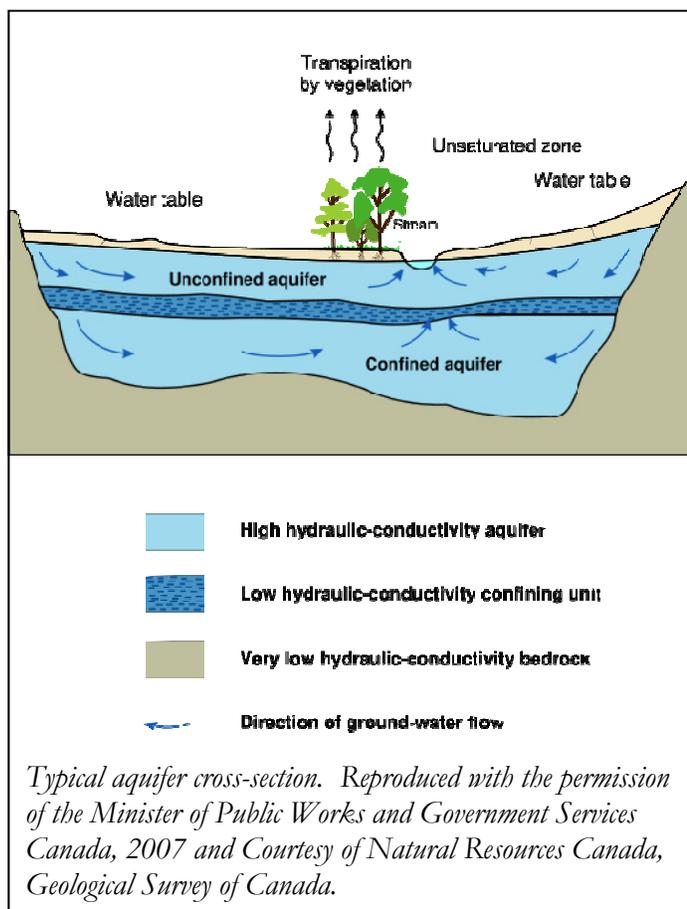


Map 2: Water Resources Composite.
See the Map Book for full-sized version of this map.

Unconsolidated aquifers with significant yields are located along valley floors and consolidated aquifers capable of supplying individual homes underlie most of the eastern portion of the county.

Management Issues

Water is essential to all living organisms. Its importance is reflected in the multiple levels of regulatory protection required by the many threats to its quality and to ensure its availability for human activities. Protection of water resources is a major goal of open space protection. Threats range from excessive soil erosion affecting surface waters, to point and non-point pollution of both surface and ground water, to creation of impervious surfaces preventing groundwater recharge, to flood control. A critical element in protecting aquifers is the identification and protection of their recharge areas. Surface and groundwater sources of drinking water are of special concern for protection of public health.



Federal (Environmental Protection Agency, Army Corps of Engineers, and others), New York State (Department of Environmental Conservation, Department of Health), Ulster County (Health, Highway and other departments), and New York City (Department of Environmental Protection) are all currently involved in regulating water quality and quantity in the county. In addition, local governments are significantly involved through their control of local development. The means of insuring both water quality and quantity through *Best Management Practices* (BMP) are well established but coordination is difficult with numerous agencies involved in the overall effort. The EPA recommends a “Watershed Approach” to regulation.

The Map Book contains maps of county water resources. The surface water resources are well understood but the groundwater resources, including aquifer recharge areas, need extensive further work.

Watersheds

Definition

A watershed is the total area of land above a given point on a water body that contributes runoff water to the flow from that point.

Inventory

Map 2a (see Map Book) shows the division of Ulster County into five major watersheds: Black Creek, Delaware, Esopus, Rondout and Wallkill. Black Creek, Esopus, Rondout, and Wallkill all are part of the larger Hudson River watershed. Within each of these are numerous sub-basins.

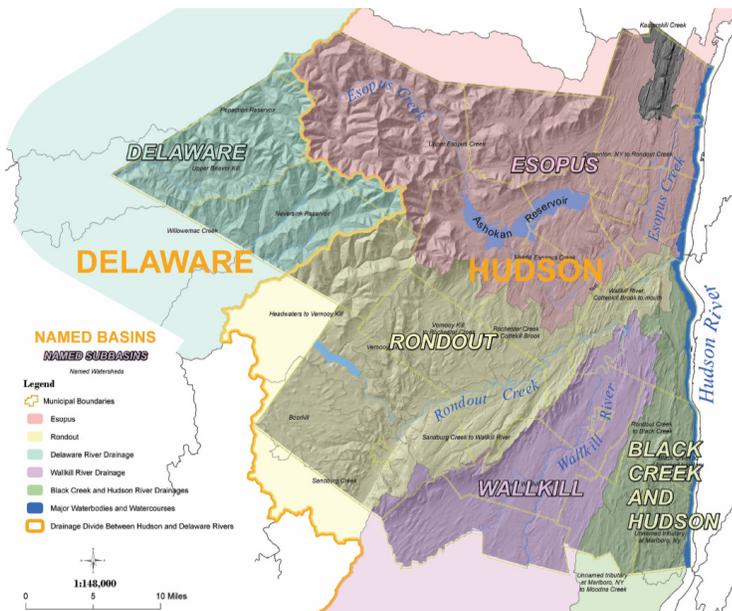


C. Olney

Tide out on Hudson River at Saugerties Lighthouse.

Management Issues

Watersheds are the appropriate delineation on which to base management decisions for most water resources and should be utilized. As home to a significant source of water supply for New York City the management of these watersheds is critical to the public health of millions including several communities within Ulster County who receive water from this source.



Map 2a: Major Drainage Basins, Subbasins and Watersheds. See the Map Book for full-sized version of this map.

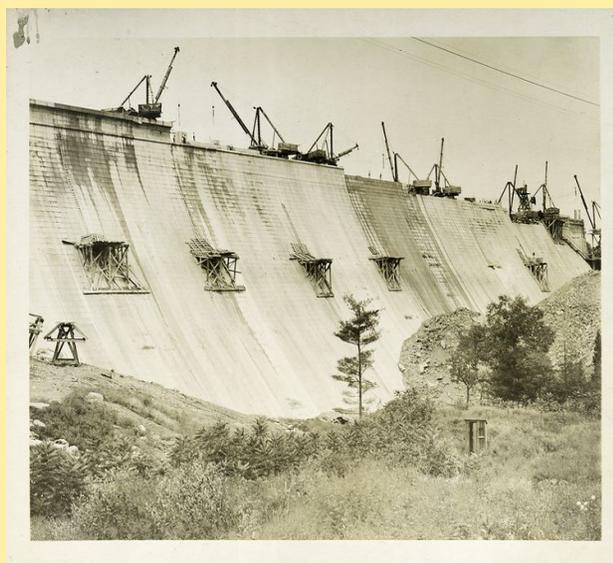
The “Watershed Approach Framework”

The “Watershed Approach Framework” is an EPA-supported methodology for organizing and coordinating project activities. Ulster County supports watershed approaches that aim to prevent pollution, achieve and sustain environmental improvements and meet other goals important to the

community. There are numerous watershed protection efforts participating in the Hudson River Watershed Alliance. This alliance represents the kind of collaboration encouraged by this plan to support reducing fragmentation, avoiding duplication of efforts and increasing sustainability of mission.

Box 5: New York City Watershed Protection

The New York City water supply system is the nation's largest unfiltered drinking water supply providing 1.5 billion gallons to 9 million people each day. The major watersheds of the system are the Catskill and Delaware which provide 90 percent of that water. Water from the Delaware system that passes through Ulster County represents a substantial inter-basin transfer. To account for this, minimum flows in the Delaware River are required. Each of these systems has its terminal reservoir in Ulster County. To remain unfiltered, the Environmental Protection Agency required the New York City Department of Environmental Protection (NYCDEP) to develop a watershed protection program. Implementation of the watershed protection program and continued refinements has been ongoing since 1992 with a long term watershed protection program approved as part of EPA's



Ashokan Reservoir under construction, September 7, 1911, View of down-stream face of Olive Bridge dam.

Filtration Avoidance Determination (FAD) in 2002. The most recent FAD was issued in July 2007. It includes a ten year commitment to acquire lands in the watershed and suggests partnerships with land trusts and nonprofits to help identify appropriate lands. It also includes a new riparian buffer program and a water supply security program. The Draft FAD continues the watershed rules and regulations, septic system and wastewater treatment plan upgrades as well as programs for stream management, agricultural and forestry



Ashokan Reservoir from Wittenberg.

water quality activities, wetland protection, storm water controls, data development and sharing, and education and outreach. The NYCDEP implements many of these programs in cooperation with local governments through a memorandum of agreement (MOA). The MOA resulted in the creation of a Catskill Watershed Corporation as a “partnership focusing on water quality protection, economic development, and community preservation...”

For more information, see <http://www.epa.gov/region02/water/nycshed/2007fad.htm>

Wetlands

Definition

A wetland is a transitional area between aquatic and upland ecological communities, often occurring where groundwater is near or at the surface, saturating the soil and the root zone of the plants that grow there. Wetlands come in many shapes and sizes: open water wetlands, bogs, forested wetlands, wet meadows, shrub wetlands, and vernal pools. Wetlands are among the most valuable natural resources in any community. They provide water retention during floods, filtration of water, storm water runoff control, and productive habitats.



Department of Environmental Conservation

Bog wetlands, such as the one above, are recognized as a significant habitat type. The bog turtle (below), a Federally-listed endangered species, is native to Ulster County.

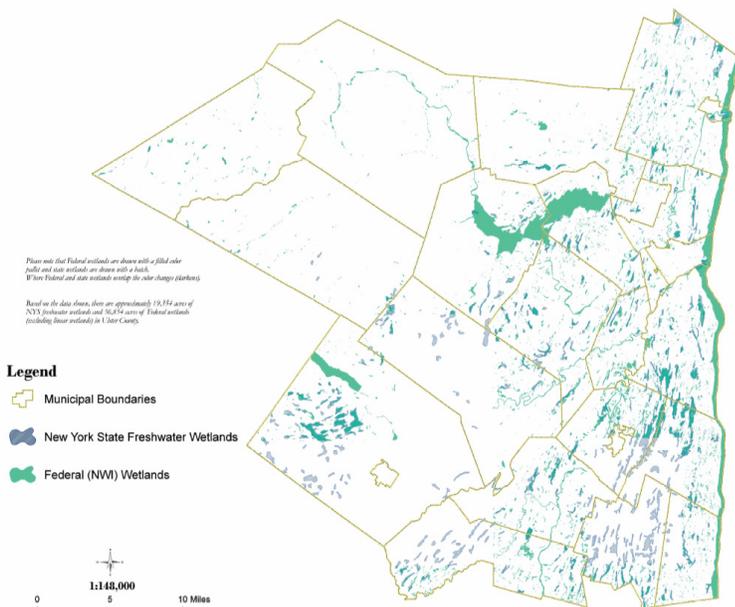


Department of Environmental Conservation

Inventory

Map 2b in the Map Book contains NYS DEC mapped wetlands as well as National Wetland Inventory (NWI) wetlands. Although these mapped areas do not show all regulated wetlands they highlight

areas where wetlands are concentrated signaling possible high biodiversity and/or an area of importance for water supply quality as well as flooding problems if filled. This map also shows areas where sensitivity to their presence should be considered in communities' land use regulations as well as for individual development proposals.



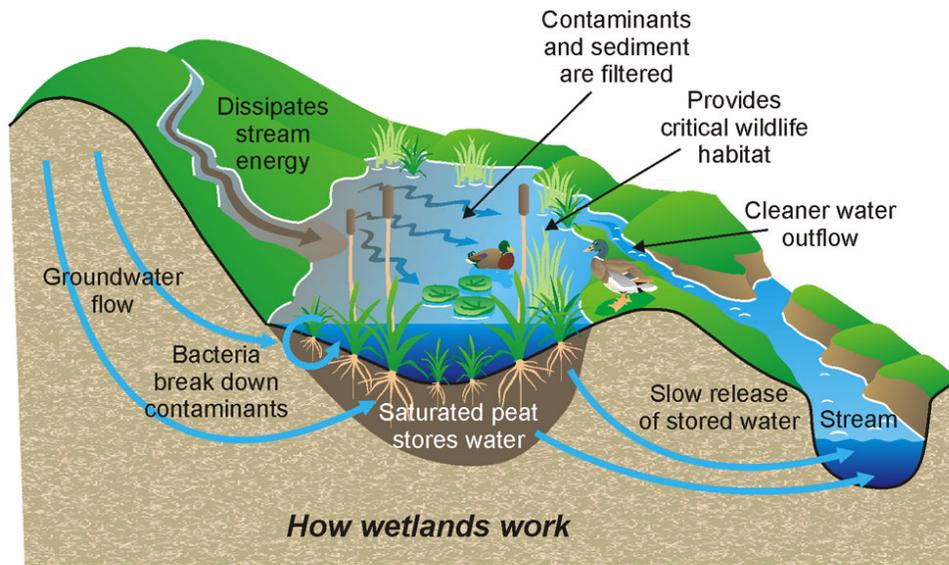
Map 2b: Wetlands

See the Map Book for full-sized version of this map.

Management Issues

Requirements differ among federal, state, and local regulations. Mapping is

outdated and incomplete and can lead to inadvertent or illegal filling. Public education regarding the ecological and filtration value of wetlands is needed.



Illustrations above and on the next page are reproduced with the permission of the Minister of Public Works and Government Services Canada, 2007 and Courtesy of Natural Resources Canada, Geological Survey of Canada.



"Spring Thaw" by Warren Hurley, New Paltz.

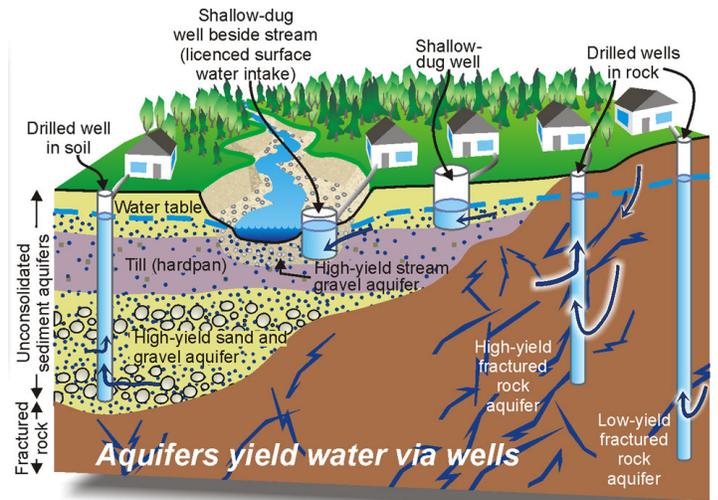
Aquifers

Definition

An aquifer is a water-bearing layer of soil, sand, gravel, or rock that will yield usable quantities of water to a well. Some definitions do not include yield to a well while others require that water quantities be significant.

Inventory

The aquifer map (see Mapbook, Map 2c) is based on the 1972 Water Supply Study by Frimpter. Not shown are well locations and their yields. Ulster County maintains groundwater data on individual wells and public water supply wells.

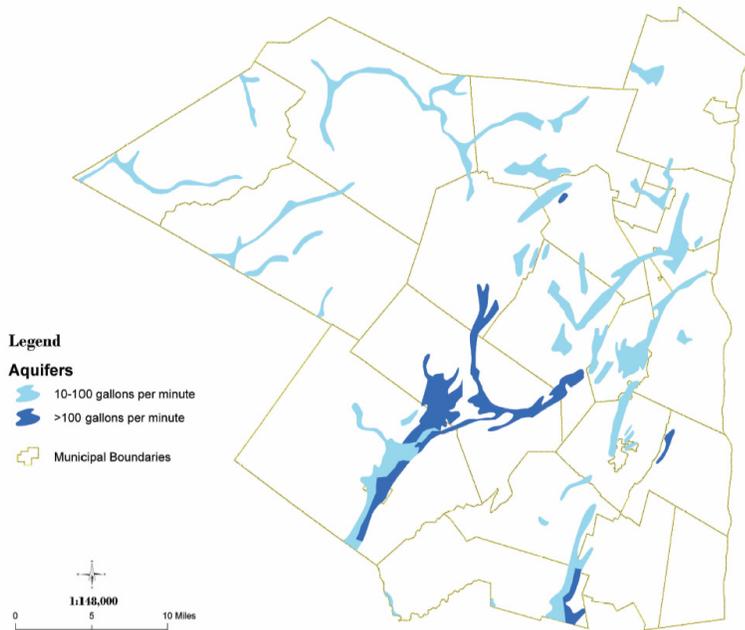


Any body of rock or sediment that yields useful amounts of water is an aquifer.

Management Issues

Over half of the county’s population uses groundwater from individual wells located in both rock (consolidated) and sand and gravel (unconsolidated) aquifers. Many public water supplies utilize

groundwater as well. Future growth scenarios show that use of individual wells will continue. A better understanding of the location of aquifers and their sources of recharge is key to groundwater protection. Once known, protection for these areas in terms of control of the amount of impervious surfaces, types of uses permitted, and other aquifer protection efforts needs to be implemented. Aquifers should be part of criteria for protecting and acquiring open space.



Map 2c: Aquifers

See the Map Book for full-sized version of this map.

Surface Waters

Definition

Surface waters mean inland waters that are on the land surface (such as reservoirs, lakes, rivers, transitional waters, and coastal waters).

Inventory

The surface waters map shows water bodies and perennial streams. Not shown are their associated stream classifications. Ephemeral streams are also not included in the inventory. The data show that there are approximately 2,147 miles of streams and over 34 square miles of surface waters in Ulster County.

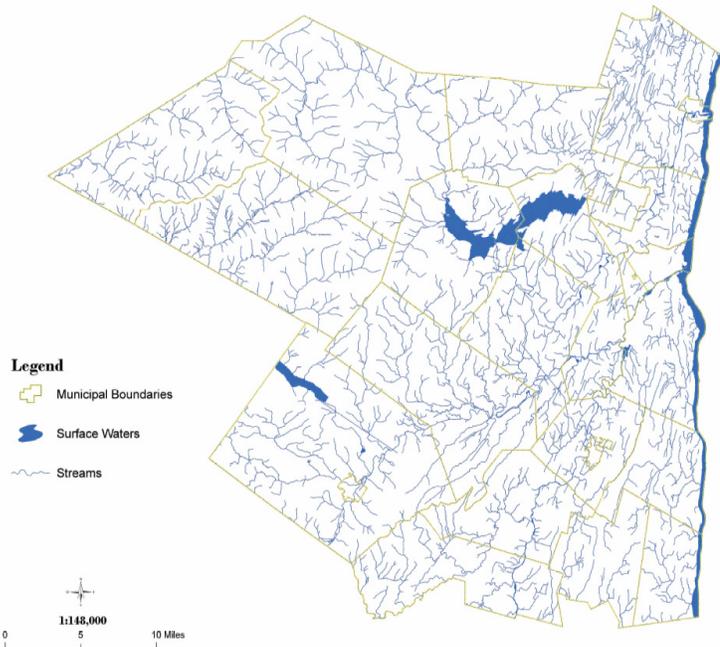


C. Olney

Ashokan Reservoir - the New York City Water Supply System is the largest unfiltered surface water supply in the nation. The City, working with EPA, NY State and local governments, has an aggressive water supply protection program that includes acquisition of lands that are part of the protected open space in Ulster County.

Management Issues

Surface waters provide recreation, water supply, wildlife habitat, and commercial opportunities (fishing, boating, water supply, power). The quality of surface water and associated wetlands determines the extent of commercial and/or recreational opportunity available. A DEC rating system (see Table 3.2, Appendix A.1, Water Resources Data) classifies surface waters based on that water body's acceptability for certain uses. Waters that can no longer support their acceptable uses are deemed to be impaired. Table 3.3 (Appendix A.1) lists DEC classified impaired waters in Ulster



Map 2d: Surface Waters

See the Map Book for full-sized version of this map.

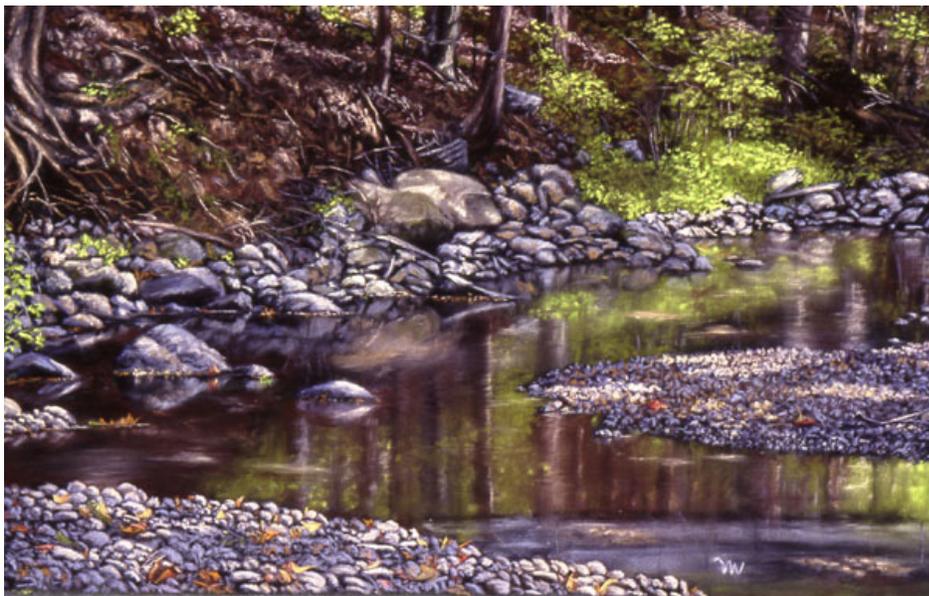
County that require a plan to regulate the source of impairment. A Total Maximum Daily Load (TMDL) is developed that indicates the total maximum amount of an impairing substance (such as sediment) that a water body can assimilate and still meet water quality standards. Impaired waters are required to have a TMDL plan to bring the waters into compliance with water quality standards. Table 3.4 (Appendix A.1) is the most recent list of priority water body segments in the county and their impairments. The priority water bodies list sums up water quality/use support assessments for individual water body segments.

Tools to protect and improve surface water quality include:

- Sediment and Erosion Control;
- Stream Bank Stabilization;
- Agricultural Management Plans;
- Steep Slope Protection; and
- MS4 Stormwater Programs



“Spring Willow Pond” by Carol Pepper-Cooper, Kingston.



“Black Creek Morning” by Marlene Wiedenbaum, New Paltz, is a work from “Sacred Ground: Held in Trust” a project done in collaboration with area land trusts to raise public awareness and support for land conservation.

Floodplains

Definition

A simple definition of floodplain is an area adjacent to a stream subject to periodic inundation. In most instances, floodplains are relatively flat areas or unconsolidated deposits transported by the adjacent stream. The National Flood Insurance Program regulates development in floodplains where there is a one percent chance flooding in any given year (100 yr. flood), defining for the program what constitutes periodic inundation and acceptable risk.



J. and R. Charnello

Homes flooding by the Rondout Creek in the Town of Rosendale, April 2005. The Ulster County Emergency Management Plan makes several recommendations regarding stream management, LIDAR technology, planning and zoning and coordination with regional agencies that are also discussed in this Open Space Plan.

Inventory

The inventory maps floodplains in accordance with the National Flood Insurance Protection Program. Flood Insurance Rate Maps (FIRM) give flood elevations and show areas that will be

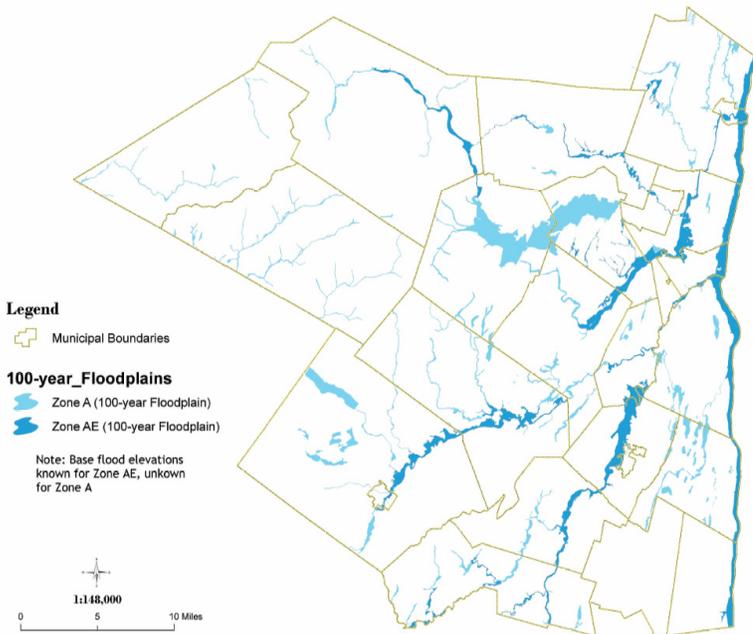
inundated during a 100 year storm.

Floodways are also mapped to regulate areas where fill or structures are not permitted in order to allow for the continued passage of floodwaters without increasing the base flood elevations shown on the FIRM.

Communities are required to adopt local land use regulations consistent with federal requirements for construction in these zones to remain eligible.

Management Issues

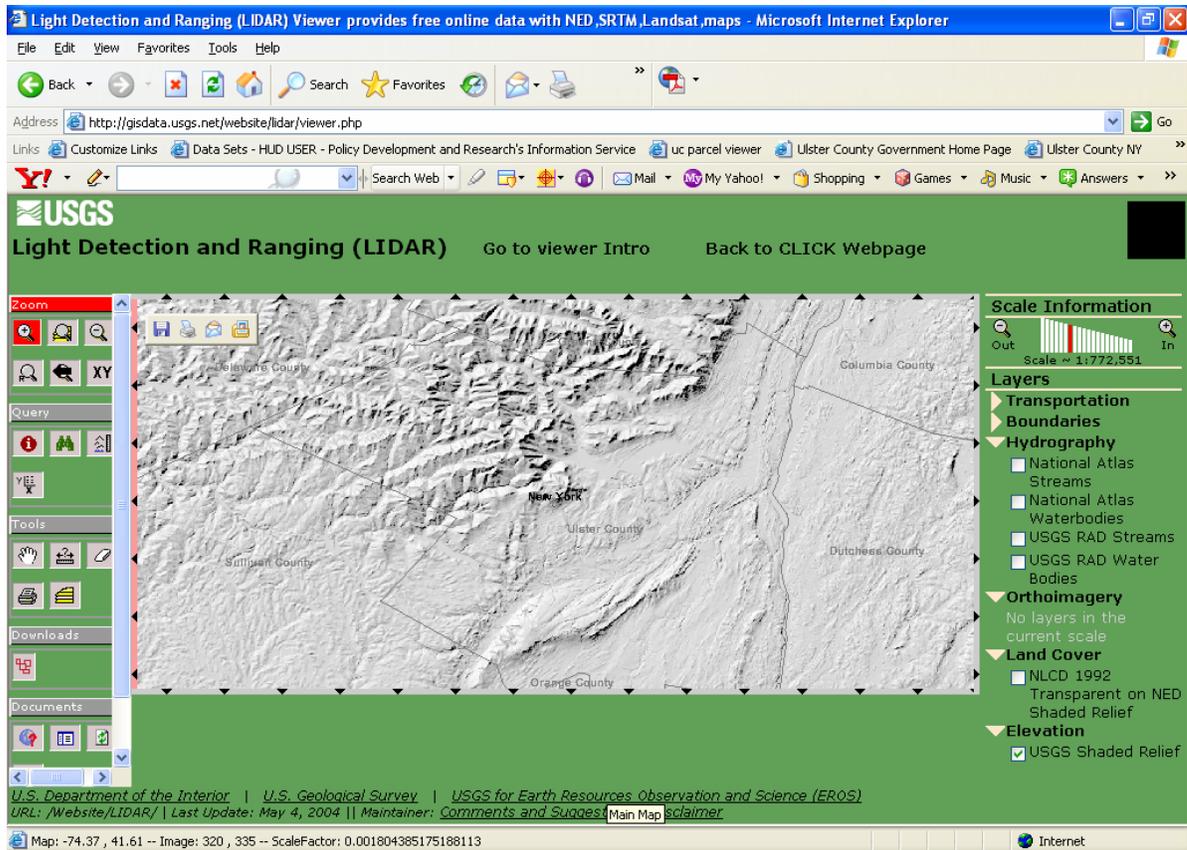
Key issues associated with floodplain management are accurately depicting the



Map 2e: Floodplains

See the Map Book for full-sized version of this map.

areas subject to flooding, developing a regulatory approach that moves beyond the National Flood Protection Program, increasing public safety, and encouraging appropriate land use within and adjacent to known floodplains. It is especially important to place and design public facilities and critical infrastructure systems to avoid flood damage and allow them to function during flood events. Floodplains are also the location of significant agricultural activities. These need to be carried out with this in mind and include practices such as riparian buffers and planting cover crops after harvest.



“LIDAR”

LIDAR (light detection and ranging) technology offers a means to provide accurate surface contours along the entire stream corridor at approximately two foot elevations. The elevation detail allows more accurate prediction of flood heights and its depiction on floodplain maps. The DEC is currently developing improved floodplain maps for Ulster County using this technology. LIDAR also offers the ability to identify small watersheds and drainage areas to help estimate runoff and note outfalls. LIDAR can also be used to characterize vegetation, monitor erosion, and examine areas of fill.

Resource Category 3: Working Landscapes

Agricultural and forestry lands

Definition

Working landscapes are defined as geographical areas of actively managed agricultural and forest lands as well as lands being mined. This definition is in contrast to "non-working" land that is simply lying idle. Typically, working landscapes are relatively large, contiguous acreage devoted to particular uses, but the plan also includes smaller farms or “niche” markets and farms that reflect increasing land values and development pressure.

Goal:

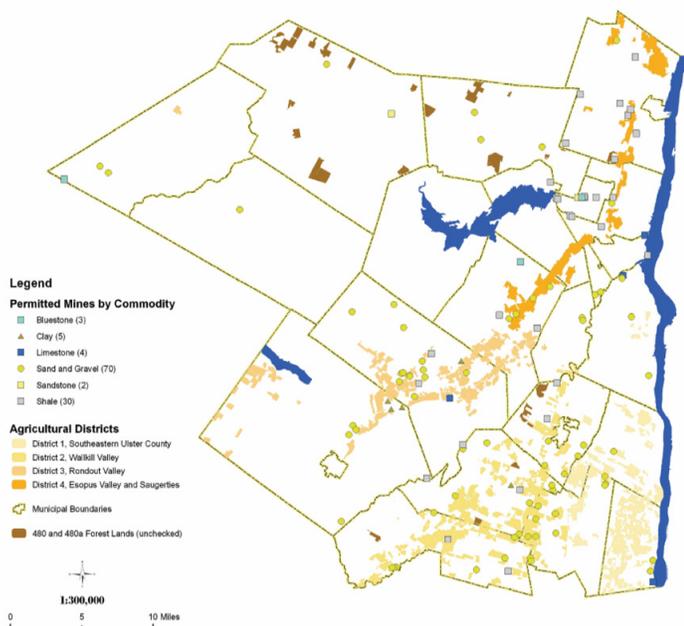
Maintain viable agricultural and forestry lands by working with property owners, communities and others to aid their economic viability and encourage land use patterns that limit encroachment. Provide for mining while preserving community quality of life and natural resources.

Inventory

The working landscapes map (see Map Book, Map 3) shows the location of the four New York State Certified Agricultural Districts in the County as well as lands enrolled under Section 480-a of the NYS Real Property Tax Law for forestry purposes. Also indicated on the map is mining activity. While not typically considered open space, mines are indeed working landscapes.

Management Issues

Working landscapes represent some of the most materially threatened open space resources. In most instances, management and regulation associated with these resources has only marginally recognized their open space value. Management of working landscapes should take into account ecological, social, economic needs, and the changing nature of these operations. An excellent example of appropriate response to managing these



Map 3: Working Landscapes

See the Map Book for full-sized version of this map.

resources can be found through the Ulster County Agricultural and Farmland Protection Board. In addition, development pressure continues to be a concern in maintaining viable working landscapes.

Section 480-a Forestry Program

Real Property Law 480-a was created to encourage the long-term ownership of woodlands to produce forest crops and thereby increase the likelihood of a more stable forest economy by granting tax relief to qualifying owners. Participation in the program requires that the forested lands be actively managed in accordance with an approved forest management plan.



Timber harvesting plays an important role in forest management.

About 10,000-12,000 acres of forestland in Ulster County has some type of timber harvest annually. This land provides an estimated 20 million board feet annually with a value of over \$7 million dollars. There are currently 23,500 acres of forestland in Ulster County enrolled in the state's 480-a timber tax law; this program requires a 10-year forest management plan with oversight by NYS DEC. There are also 17,000 Ulster County acres enrolled in the American Tree Farm system; this program also requires a forest management plan that is overseen by professional forester volunteers.



Wicklow Orchards in Lloyd is part of the "Ag" Districts Program.

Agricultural Districts Program

The Agricultural Districts Program grew out of New York State Constitutional amendments in 1970 to encourage the development and improvement of agricultural lands for the production of agricultural products as well as the protection of agricultural lands. In 1971, the Agricultural Districts Law/ Agriculture and Markets Law was

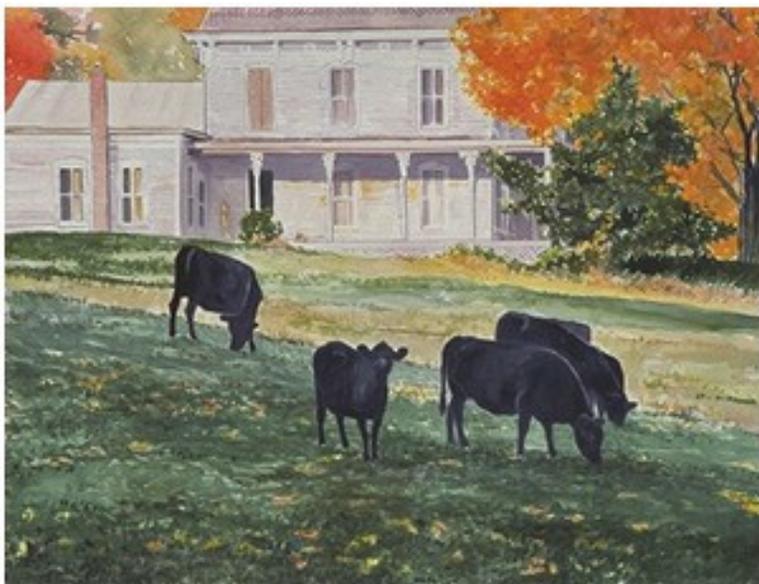
enacted. It authorizes the creation of local agricultural districts to encourage the continued use of farmland for agricultural production.



“Field of Poppies” by Lynne Friedman, Rosendale. This painting was selected by the City of Kingston to be digitally enlarged to 22ftx55ft and placed on an oil tank on the Hudson River in July 2004.



“Hay Bales” (above) by Marlene Wiedenbaum, New Paltz.
“Door-yard Cows” (below) by Thomas Stratton, High Falls.



The program offers incentives and protections to maintain lands in agricultural uses. These benefits include preferential property tax treatment (i.e., agricultural assessments for farms in production), restrictions on government funded acquisition or construction projects, and protections against overly restrictive local laws or private nuisance suits involving agricultural practices.

The Department of Agriculture and Markets manages the certification of new districts and the review and recertification of existing districts. Districts must be reviewed every eight years. The procedure assigns responsibility to the County Agricultural and Farmland Protection Board.

There are currently four agricultural districts in Ulster County comprising over 2000 parcels and including nearly 70,000 acres. In addition to the state certified agricultural districts, approximately 34,000 acres are recognized in local zoning codes as agricultural. The total for these two categories equals fourteen percent of all land in Ulster County.

Resource Category 4: Landforms and Natural Features

Features that define the landscape's character

Definition

A landform comprises a geomorphological unit. Landforms are categorized by characteristics such as elevation, slope, orientation, stratification, rock exposure, and soil type. Higher order landforms are mountains and valleys; within these are berms, kames, cliffs, and other natural features.

Goal:

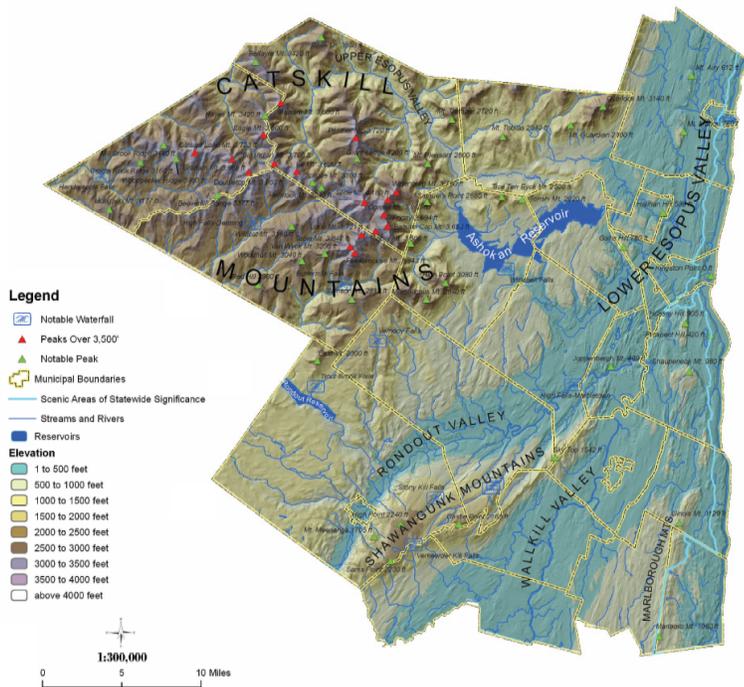
Develop a systems approach to managing the natural resources in relationship to the landforms in which they occur and preserve the unique natural features within each.

Inventory

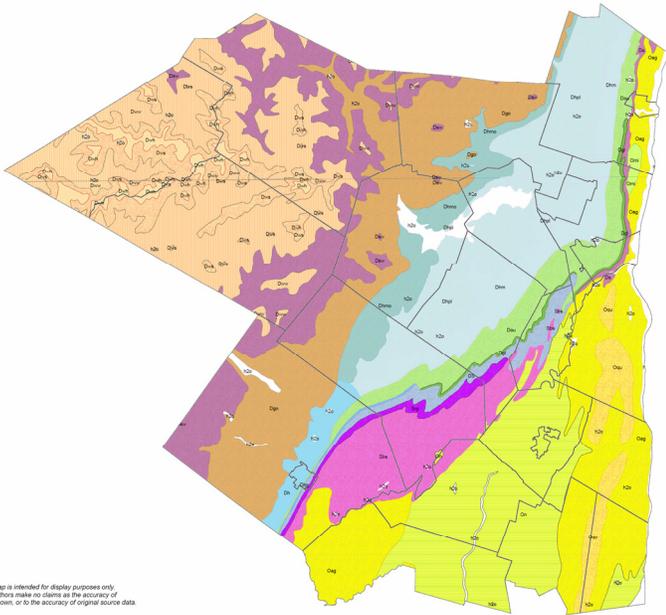
The major landforms and natural features of the county include the Catskill and Marlboro Mountains, Shawangunk Ridge, and the valleys of the Hudson, Wallkill, Esopus, and Rondout rivers and creeks (see Map 4).

Management Issues

With their underlying geologic structure and resources, landforms are the basis of our development patterns (see Map 4a). Broad floodplains and ridgelines have directed highways, concentrated settlements, and influenced agricultural activities. Smaller landforms such as kames and karst areas are diagnostic of past geologic processes and important in their own right. From mountain ridges to moraines, the difference in scale is a challenge to their protection. Yet landforms provide compelling direction for land use regulation.



Map 4: Landforms and Natural Features
See the Map Book for full-sized version of this map.



Map 4a: Geology - Bedrock

See the Map Book for full-sized version of this map.

A number of programs have arisen that respond to the need to protect, identify, and recognize landforms. Included are programs that address statewide areas of scenic significance, coastal zones, scenic byways, national natural landmarks, and local overlay zones.

National Natural Landmarks Program

The National Natural Landmarks Program recognizes and encourages the conservation of outstanding examples of our country's natural history. It is the only

natural areas program on national scope that identifies and recognizes the best examples of biological and geological features in both public and private ownership. National Natural Landmarks (NNLs) are designated by the Secretary of the Interior, with the landowner's concurrence. To date, nearly 600 sites have been designated. The National Park Service administers the NNL Program and supports NNL owners and managers with the conservation of these important sites. Sam's Point Preserve carries this designation in Ulster County.

Coastal Management Program and Scenic Areas

In recognition of the scenic value of the coast, New York's Coastal Management Program (CMP), established in 1981 by New York State Legislature, includes two policies which provide for the protection and enhancement of this unique resource. Policy 24 provides for the designation and protection of Scenic Areas of Statewide Significance (SASS) and Policy 25 requires that proposed actions located outside a designated SASS must protect, restore or enhance the overall scenic quality of the coastal area. Both policies call for agencies to determine if a proposed action would impair scenic quality.

The policies state that impairment of a landscape's scenic quality can occur in two principal ways: 1) through the irreversible modification or destruction of landscape features and architectural elements which contribute significantly to the scenic quality of the coast, and 2) through the addition of structures which reduce views or are discordant with the landscape because of their

inappropriate scale, form, or construction materials. Regulations governing the designation of scenic areas of statewide significance are found in 19 NYCRR Part 602.5.

Both policies include siting and design guidelines which are to be used to evaluate the impact of proposed development, recognizing that each situation is unique and that the guidelines must be applied accordingly. These guidelines address the appropriate siting of new structures, and other development; the use of scale, form and materials which are compatible with the landscape's existing scenic components; the incorporation of historic elements in new development; the maintenance of existing landforms and vegetation, and the removal and screening of discordant features.

Ulster County contains two coastal areas designated as SASS, each with numerous scenic areas ("subunits") within them (see Appendix A.4, Ulster County SASS.). Together they include a good portion of the County's Hudson River waterfront. These SASS coastal locations possess unique, highly scenic landscapes. Other landforms have become signatures of the community, as has occurred with the Shawangunk Ridge in New Paltz and Overlook Mountain in Woodstock. Even relatively small features, such as the waterfalls on the Rondout Creek, define the area of High Falls.



"Looking East at Sunrise over Hudson Valley from Catskills" (1848) by Frederick Church, a central figure in the Hudson River School of American landscape painters.



The Town of Lloyd's LWRP includes plans for a waterfront park and the Walkway over the Hudson.

Local Waterfront Revitalization Plans

Local Waterfront Revitalization Programs (LWRP) offer additional protection and recognition of the importance of coastal landforms. Local land use authority can be focused to recognize important waterfront uses including recreation and is an important tool for the protection of scenic resources. In communities with an approved LWRP all three

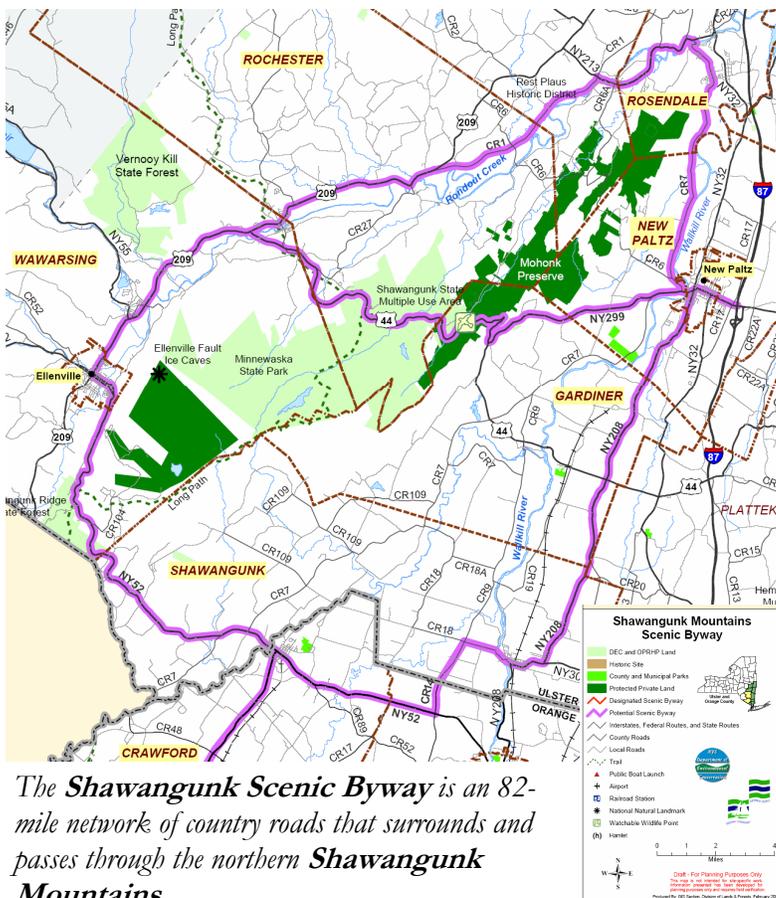
levels of government - Federal, state and local - are working toward a set of common goals. In Ulster County four of the seven Hudson River municipalities have prepared LWRPs. Most of the LWRPs already address to some degree the protection of scenic landscapes. The City of Kingston is an outstanding example of how an LWRP guides local land use controls.

Scenic Byway Program

The NYS Scenic Byway Program is an asset in open space planning. A Corridor management plan and New York State Legislature designation are required; these requirements can be the impetus for neighboring communities to develop working relationships.

Ulster County has two Scenic Byways:

- River Road in the Town of Esopus is a 3.93 mile 2 lane highway, designated July, 1992, and has spectacular views of the Hudson.
- The Shawangunk Mountain Scenic Byway is an 82-mile route encircling the Shawangunk Mountains and was designated in September, 2006. The Shawangunk Mountain Regional Partnership is made up of officials from 11 communities who act as the steering committee.



By participating in the Scenic Byway Program, local governments have priority access to certain federal transportation funding programs. These funds may be used for tourism development, interpretation, resource management marketing, and physical projects (bikeways, scenic pull-offs, and visitor centers). It is important to note that the Shawangunk Scenic Byway is preparing a regional open space plan. This plan supports that effort and its implementation.

Resource Category 5: Ecological Communities

Diversity of species and ecosystems, exceptional forest or plant community, unique and wildlife habitats, wetlands, shorelines

Definition

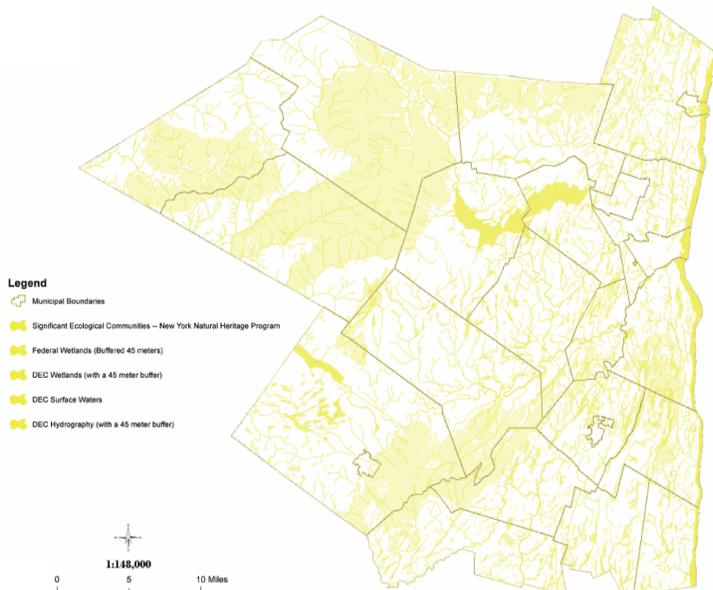
The term “ecological communities” (also known as biodiversity areas) refers to groups of organisms that live together in a particular physical environment. It includes the diversity of genetic materials within species, the variety of species in all taxonomic groups, and the array of communities, ecosystems, and landscapes within which species evolve and coexist.

Goal:

Ensure that natural resource protection and development activity is conducted to provide for intact and interconnected communities and ecosystems for habitat protection and species diversity.

Inventory

The inventory includes information from the New York State Heritage Program, federal and state wetlands as well as stream corridors and unfragmented forests. It represents a landform based approach absent data to allow a more refined picture. Areas with more overlapping features appear in darker green and are more likely to represent an important ecological resource.



Map 5: Ecological Communities

See the Map Book for full-sized version of this map.

Management Issues

The protection of intact, interconnected ecosystems is the primary means to ensure the continuation of critical ecological communities. Treating resource areas such as watersheds and working landscapes as interconnected systems provides protection and corridors for ecological communities. Understanding how interconnections operate and differentiating between ecological communities is needed. Prevention and control of invasive species is also needed.

USDA Forest Legacy Program



C. Olney

The USDA Forest Legacy Program's focus is on maintaining the integrity of valuable forest lands. Intact forest lands supply timber products, wildlife habitat, soil and watershed protection, aesthetics, and recreational opportunities. The program encourages and supports acquisition of conservation easements and may fund up to 75 percent of the costs. Lands in the Catskills are enrolled in the program and inclusion of lands on the Shawangunk Ridge is ongoing.

New York State Natural Heritage Program

The New York State Natural Heritage Program (NHP) has developed an inventory to help assess and protect the biological diversity of the state. The program is building a database on rare animals, rare plants, and significant natural communities in the state. This inventory also provides a ranking system for determining conservation and management priorities for New York State's significant natural areas. Based on the currently known distribution of significant natural communities, Ulster County has a significant number of resources compared to other counties in New York. The program makes an inventory form available online to gather local findings (see Appendix A.5, Ecological Communities Data and Ecological Communities recommendations).

Ecological Community Assessments (ECAs)

ECAs are ongoing in Ulster County. The NHP is currently conducting an inventory of the Shawangunk Mountains. The objective is to determine and map the ecological communities within the Shawangunk Mountains to enable and enhance future inventories, monitoring, and management of the natural resources found within the area. It will use recent aerial photos and digital imagery to locate, identify, and map the ecological communities, gather and analyze plant community data, and delineate a seamless ecological community map for the Shawangunks. Information on all significant occurrences of natural communities surveyed will be entered into the NY Natural Heritage database. The New York State DEC Hudson River Estuary Program works on ecosystem protection in the region and is also a valuable information resource. Other organizations doing biodiversity work in the area include: Hudsonia's Biodiversity Assessment Training for local level mapping; the Shawangunk Biodiversity Partnership mapping biodiversity areas for the entire Shawangunk Mountains; local watershed groups doing benthic macroinvertebrate (BMI) assessments; and the Hudson River Clearwater's Hudson River data.

Resource Category 6: Cultural and Historic Resources

Federal, State and locally designated structures, sites and districts

Definitions

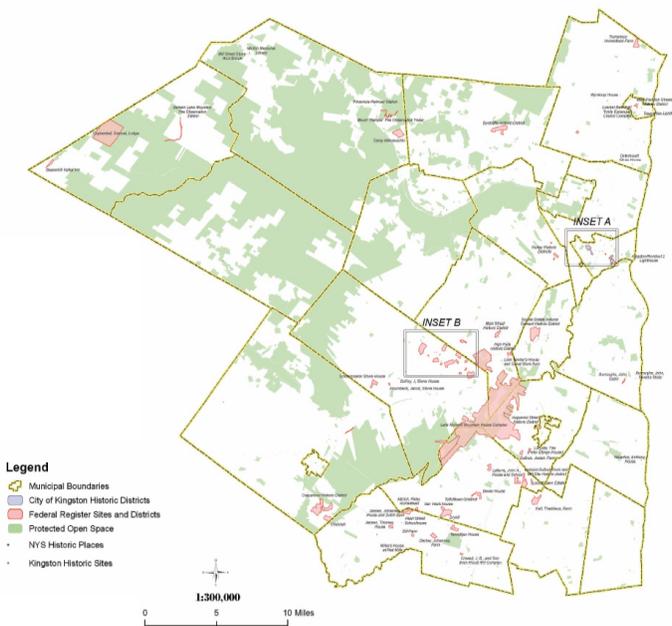
Cultural and historic resources are sites or structures – including their landscape settings – that exemplify the cultural, architectural, economic, social, political, or historic heritage of the county or its communities. The United States Secretary of the Interior defines the historic environment as districts, sites, buildings, structures, objects and landscapes that are significant in American history, architecture, archaeology, engineering, and culture. “Cultural Landscapes” are landscapes created by people and their culture, simultaneously the product of nature and of human interaction with nature.

Goal:

Support stewardship of cultural and historic resources through inventory, access to preservation tools and resources, and increased understanding of their contribution to the “cultural landscapes” of Ulster County.

Inventory

Ulster County is rich with industrial, recreational, agricultural, and architectural heritage. Various settlements, industrial areas, and historic transportation corridors have left their mark. Historic districts include Old Hurley, Huguenot Street in New Paltz and the Stockade District in Kingston. Industrial sites include the Tuttle Mill in Gardiner, the cement mines in Rosendale, the brick industry on the Hudson River, and bluestone operations in the Catskills. Historic transportation corridors include railroads, waterways and their associated structures and settlements, such as river towns along the Hudson River and the D&H Canal. The National Register of Historic Places now lists over 160 sites in Ulster County. There are twenty-seven historic districts and an abundant stock of 19th century industrial and residential areas intact.



Map 6: Cultural and Historic Resources
See the Map Book for full-sized version of this map.



The City of Kingston's Rondout National Historic District, also a New York State Heritage Area, is a vibrant public space. In 1992, the city invested its \$530,000 EQBA grant into the district, upgrading a waterfront park and creating a visitors' center. This was matched tenfold since then by private investment. Today, the once-neglected area has seen a renewal in the residential and retail markets, as well as investments in public venues for recreation.

Management

Preserving cultural landscapes, development patterns, old railroads, historic canal sites, and scenic byways contributes greatly to community character. Land use planning that recognizes the value and scale of communities can maintain a pattern and density of development that respects its historic character. Compact growth patterns protect the landscape from unnecessary sprawl and maintains the critical mass necessary for viable “main streets” and “walkable” communities. More detailed inventories are necessary to document the location and types of cultural and historic sites throughout the county as well as areas that represent the community's character. Design guidelines, landmarks laws, and other tools should be utilized in tandem with planning for development. Historic resources should also be understood for their contribution to tourism.

State and Regional Preservation Planning

This plan acknowledges that cultural resources are an important aspect of our environment. In the same vein, the Statewide Historic Preservation Plan notes that “[h]istoric preservation, which involves actions that protect historic and cultural properties and that return them to productive use, is a powerful but underused economic development and environmental stewardship strategy.” At the state and regional levels, Ulster County is part of two historic preservation planning efforts: the statewide plan and the management plan for the Hudson River Valley National Heritage Area. Both planning processes are based on national standards. The statewide plan focuses on a broad array of historic resources, addresses social, economic, legal, governmental, environmental issues, and coordinates with other planning efforts, such as land use, housing, transportation and recreation. The Heritage Area plan focuses more specifically on resource site management and interpretation. The processes involve many stakeholders, public agencies, and local organizations so that a wide array of planning and conservation issues are considered.

Resource Category 7: Recreation Resources

rural and urban parks, shorelines, fishing and hunting, trails, and tourism sites

Definition

According to the National Park Service, “Recreational resources are all natural and cultural features which stimulate, encourage, or provide for the physical, mental, and cultural well-being of the individual.”

Inventory

A detailed inventory of local recreational resources was conducted as part of New York’s Statewide Comprehensive Outdoor Recreation Plan (SCORP) in 2003. That inventory identified at least 254 recreational sites throughout the county. The SCORP shows that greatest need in Ulster County is for swimming facilities.

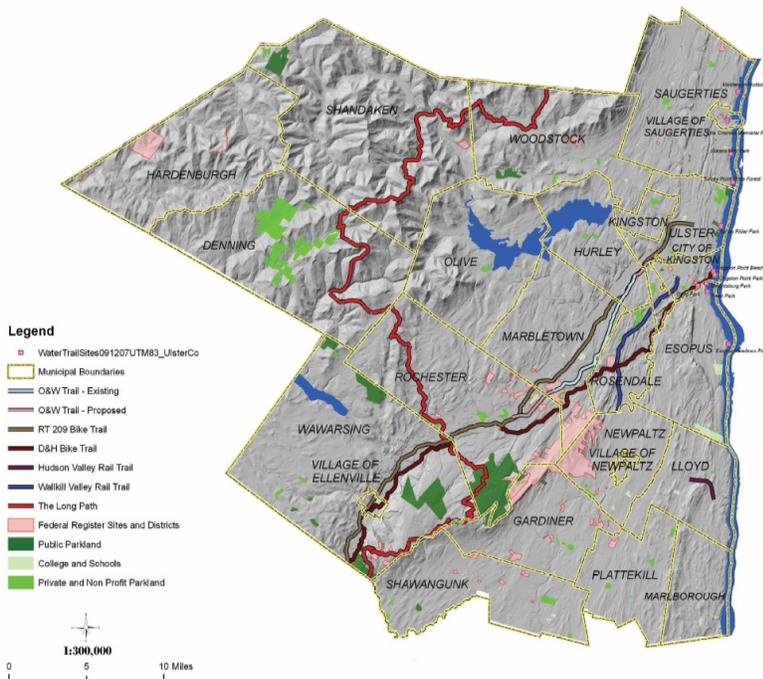
The availability of regional recreational resources coincides with the protected open space areas in

the Catskills and on the Shawangunk Ridge. Most are owned and managed by the State. Other major contributors to the regional system are New York City where access is allowed to its watershed lands as well as several nonprofits including the Mohonk Preserve, the Nature Conservancy, and Scenic Hudson.

The County operates and maintains two parks: Ulster Landing Park with access to the Hudson River and the New Paltz Park with a swimming pool and lands utilized for special events,

Goal:

Meet the recreational needs - active and passive - of all Ulster County’s residents and ensure that the county remains a leading provider of regional recreational open space.



Map 7: Recreational Resources

See the Map Book for full-sized version of this map.



“Wilson Park” by Staats Fasoldt, Rosendale.

including the Ulster County Fair. Although the county has many surface waters and demand for swimming is high, public access for swimming is limited: swimming facilities include those mentioned above, Lake Minnewaska in New Paltz, Kenneth Wilson State Park in Woodstock, and the beach at Kingston Point in the City of Kingston. In addition, five municipalities operate local pools, parks and facilities, which may have restricted access. Local municipalities also offer active recreational opportunities that include ball

fields, basketball courts, and trails. Several rail trails developed by local governments also provide regional recreational opportunities.

Management Issues

A key management issue is to link the recreational resources together and to link neighborhoods to recreational resources. Major investments in facilities need to be specific as to function and location. As an example, access to swimming facilities is high in the Kingston area with public beaches and a pool, whereas it is very poor in the Rondout Valley.

Major capital investments should also be utilized year round. Additional research into the barriers associated with the use of school facilities during off season is needed. Similarly, it is important that local recreational facilities be able to remain open to all county residents. Since many utilize federal and state funding, they must be open to the general public and ADA accessibility is an important



Moriello Park, New Paltz

consideration. Recreational uses are also dynamic; trends should elicit a facility response. Examples include the rise of soccer as a team sport as well as the popularity of skateboarding and BMX cycling. The inventory at the local level needs to be more sophisticated with reports on condition becoming the norm for these facilities. Finally, as a key component of our quality of life, we need to provide a more integrated management plan for our park system.

Public Parks and Facilities

Ulster County's major public parks and facilities include: Belleayre Mountain/Pine Hill Lake Day Use Area, Kenneth Wilson Campground, Minnewaska State Park Preserve, Ulster County Pool, Ulster Landing Park, and Woodland Valley Campground. Although locally-owned, the City of Kingston's Dietz Stadium and the substantial recreational facilities in the Town and Village of Saugerties serve as regional facilities. Other municipalities maintain parks, pools and other public recreation facilities. School districts also own substantial recreational facilities that enjoy only limited public access.

Bicycle and Pedestrian Trails and Paths

Trails provide important transportation links and tourism destinations. Two major rail trails, one in the Wallkill Valley and the other in the Esopus/Rondout Valley, terminate in Kingston. The Town of Lloyd also maintains a rail trail that connects the hamlet of Highland to outlying areas. Substantial trail systems also exist within the Catskill Forest Preserve, and on the Shawangunk Ridge. The latter consists of a unique mix of public and nonprofit ownership.



Ulster Landing Park, with 103 acres and over 3,000 feet of frontage on the Hudson River, is one of two County-owned parks. The other, with over 115 acres, contains the New Paltz Park, Pool, and County Fairgrounds.

Box 6: What is a trail?

A trail is “a linear corridor, on land or water, which provides access for recreation and transportation and related outdoor education and sport activities. A trail may link two or more points or be a looped system with the same start and end point. It may be single or shared use; non-motorized and/or motorized; single season or year round; narrow or wide; urban and/or rural; and comprised of various types of surfaces. It may be a stand-alone entity or part of a broader corridor such as a greenway. The term trail has evolved to include routes on existing transportation systems that link points of a specific theme usually of a historical, cultural or scenic nature. These types of trails are commonly referred to as heritage trails or corridors.”

Ulster County Transportation Plan

The Ulster County Transportation Council (UCTC) recently developed and adopted a Year 2030 Long Range Transportation Plan as part of its overall multi-modal transportation planning program. During the development of the plan, the need to better connect local and regional on- and off-road trail systems was identified. In response to this identified need, the UCTC

Box 7: The Ulster County Transportation Council

The Ulster County Transportation Council (UCTC), established in 2003, is the designated Metropolitan Planning Organization (MPO) for Ulster County. MPOs receive support from the federal government in order to foster collaborative and cooperative transportation planning and decision making in urbanized areas.

Ulster and Delaware Railroad Corridor Rail-With-Trail Feasibility Study

UCTC's 2006 feasibility study examined use of the Catskill Mountain Railroad from the Kingston Point Park adjacent to the Hudson River to the Belleayre Mountain Ski Resort. The Study breaks the corridor into segments with recommendations as to how each segment can accommodate a rail-with-trail system. It concludes that significant portions of the right-of-way offer rail-with-trail opportunities and that areas east of Phoenicia are easily accomplished while the Ashokan Reservoir portion cannot accommodate both. The UCTC Transportation Improvement Program (TIP) contains approximately \$3 million in funding for the first phase of development.



Non-Motorized Transportation Plan

In 2007, UCTC's Non-Motorized Transportation Advisory Committee initiated an 18-month study to assess the existing conditions of bicycle and pedestrian facilities countywide. The study effort includes an assessment of current conditions and identifies potential improvements for implementation. In addition, conceptual improvement designs will be prepared for high priority sites. The Committee's mission is to develop and maintain a countywide bicycle and pedestrian plan, advocate bicycle and pedestrian safety, help work out complex technical and institutional issues, advocate the benefits of bike/pedestrian facilities, help closely coordinate the timely implementation of bike/pedestrian improvements with local municipalities, NYSDOT and the public, and recommend policies and project priorities to the UCTC.

The Ulster County Planning Board, the host agency of UCTC, can coordinate trails, and byways with other open space issues using these and future transportation plans and funding.

For more information on UCTC, visit the website at: <http://www.co.ulster.ny.us/planning/tran.html>



established a countywide bicycle and pedestrian advisory committee to help improve and expand local and regional trail connections. (For more on the UCTC's trail-related activities, see Box 7 above.)

“Highland Rail Trail” by Marlene Wiedenbaum, New Paltz,

Recreational Rivers

New York State Environmental Conservation Law, Title 27 of Article 15 addresses Wild, Scenic or Recreational River Systems and access thereto. (See water resources section.) The Shawangunk Kill is designated under this statute from the Orange County line to its confluence with the Wallkill. Recreation opportunities are also provided by a water trail under development along the Hudson and by numerous public access points for fishing and boating along the county's streams and rivers. It is also important to note the world class trout streams in Ulster County including the Esopus, as well as the "tubing industry" that has arisen in Shandaken.



Fishing on opening day of trout season

Cultural and Heritage Tourism

As discussed in the previous section, Ulster County has a rich cultural heritage. While historic and cultural resources have intrinsic values in their own right, they may also be extremely valuable contributors to recreation and tourism. Heritage tourism (sometimes referred to as cultural tourism) is an important component of today's tourism economy. The National Trust for Historic Preservation defines it as "travel to historic and cultural attractions, sites, and regions to learn about the past, and the present, in an enjoyable way."

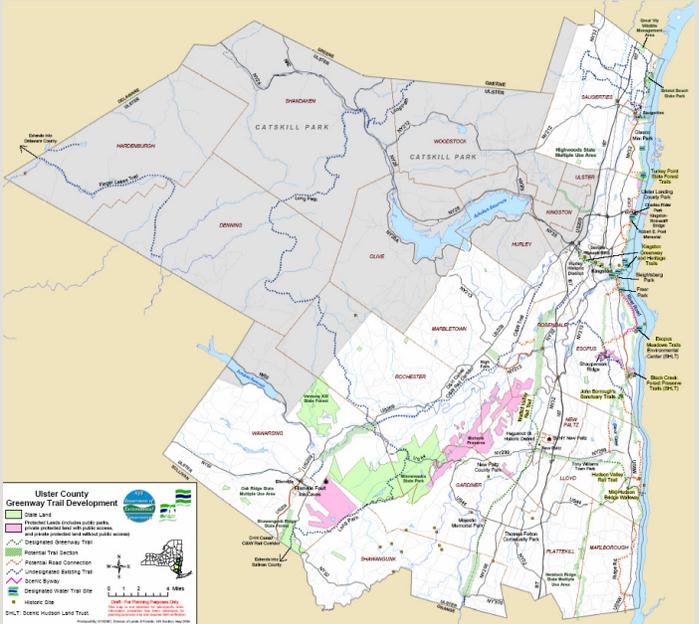
The Hudson River Valley Greenway

The Hudson River Valley Greenway was founded in 1991 to "preserve, enhance and develop the world-renowned scenic, natural, historic, cultural and recreational resources of the Hudson River Valley." The Greenway's activities recognize the importance of regional cooperation – while respecting Home Rule – and the balance between economic development and conservation. Key among its programs are grants and technical assistance intended to recognize, preserve, and promote the natural and cultural resources of the Hudson River Valley and to create greater access to trails, calling for the development of an interconnected "Greenway Trail" that would extend from the southern tip of Manhattan to Saratoga and Rensselaer counties.

Box 8: Hudson River Valley Greenway Trail Vision

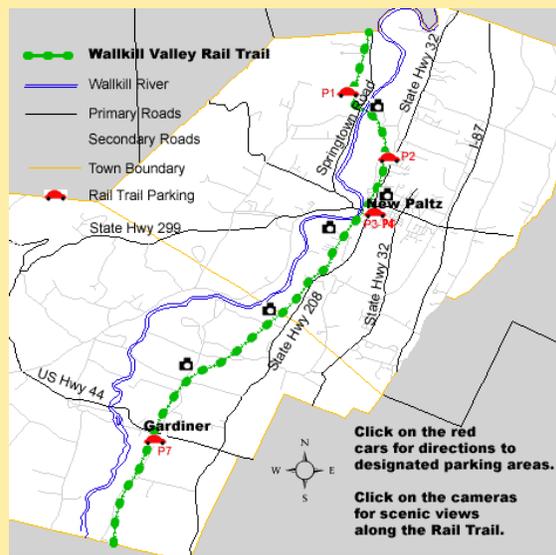
The goal of the Greenway’s Trail Vision is to create an interconnected network that connects communities and residential areas with open spaces and their many natural, recreational and heritage resources.

The Greenway’s trail planning approach is community-driven. It involves partnerships with local governments, business, community organizations, schools, and private landowners. The Greenway does not own any trails nor can the Greenway use eminent domain to acquire land for trails. However, the Greenway can provide insurance coverage if a private landowner agrees to sign a public access agreement with the Greenway. The Greenway also supports and encourages volunteer trail stewardship efforts to assist local government and non-profit groups in trail management responsibilities. As stated, the Hudson River Valley Greenway Trail System is a combination of various trail types, creating a unique network of multi-use land and water trails. The three main types are: *Riverside Trails*, which run along or near the Hudson River; *Countryside Corridors*, which run on rail trails, utility easements, and shared roadways; and *Connector Trails*, which link the River and Countryside trails.



An extensive network of existing and proposed trails is discussed in the Draft Greenway Trail Vision Plan (2004) and is listed in Appendix A.7, Recreational Resources Data. Visit the Greenway at: www.hudsongreenway.state.ny.us.

Box 9: Success Story – The Walkkill Valley Rail Trail



The Walkkill Valley Rail Trail is noted by the State’s Hudson River Valley Trail Vision as an example of a very successful local initiative that “contributes to the spiritual and economic vitality of the communities in which it lies. Maintenance and promotion are provided almost exclusively by volunteers from more than 200 members of the Walkkill Valley Rail Trail Association.”

George Danskin, Former President
Walkkill Valley Rail Trail Association

For more information, see: www.gorailtrail.org.