

Many communities have effectively used “clustering” techniques to design land subdivisions to accommodate limited development while preserving important open spaces. Unfortunately, the Shawangunk region lacks genuine examples of effective use of this technique. The following model regulation is offered for adoption by municipalities in this region.

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## **Subdivision Regulations**

### **Section XX - Conservation Design Subdivision**

**XX(a) Application** - Pursuant to Section 281 of New York Town Law, a conservation design subdivision may be considered either by request of an applicant or as a requirement of the Planning Board.

**XX(b) Submittal of Sketch Plat** - At the earliest possible date, an applicant shall submit two alternative sketch plats. The first shall present a plat consistent with the minimum standards of applicable zoning. The second shall be known as a conservation design plat, shall meet the supplementary conditions of this section, and shall be used by the applicant to present an estimation of the number of building plots or dwelling units that could be practically created. Upon receipt of the alternative plans the Planning Board shall: (i) determine if modification of specific provisions of applicable zoning is consistent with the recommendations of the Town comprehensive plan, and (ii) evaluate and confirm the number of building plots or dwelling units that could be practically

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created. Within two (2) months of receipt of the alternative plans the Planning Board shall notify the applicant on the applicability of an Open Space Plan, on the maximum number of building plots or dwelling units allowed, and on specific provisions of the regulation which may be considered for modification. No aspect of this notification shall relieve the applicant from the necessity of obtaining other relevant approvals.

**XX(c) Calculation of Density** - In calculating the maximum number of building plots or dwelling units the Planning Board shall review the submitted alternative plans and shall consider the minimum requirements of applicable zoning as well as the requirements of the County departments of Health and Public Works, the limitations of soils, topography, wetlands, surface waters, flood hazard areas, and other known environmental constraints. Under no circumstances shall the permitted number of building plots or dwelling units exceed the number which would be permitted, in the Planning Board's judgment, under the minimum requirements of the underlying zoning district.

**XX(d) Minimum Open Space** - Any conservation design plat shall show a minimum of fifty percent (50%) of the total parcel as contiguous, permanently dedicated open space pursuant to the relevant zoning requirements for open space dedication.<sup>1</sup> Streets, roads, and impervious surfaces other than recreational

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1. [See "Model Shawangunk Ridge Overlay District" Section 3(f)(i), pp. 40-41.]

## APPENDIX B

A critical element of the Shawangunk Ridge is the forest that covers the majority of the ridge's flanks and upper slopes. That forest is integral to the visual appeal of the ridge, to protection of sensitive natural habitats known to include areas of national and global significance, and as a protective buffer to water sources.

Active cutting in the forest, notably for hardwood lumber and cordwood, is an important aspect of a sustainable regional economy, yet such cutting should be managed to insure that scenic, natural and water resources are not harmed. Concerns may also be raised that cutting and ground disturbance intended to support development through site- and road-clearing often haphazardly occur prior to development review and approval by the municipality.

The attached model timber harvesting law provides municipal officials with a tool to review and manage such potentially harmful timber-harvesting practices while continuing to allow, without review, smaller-scale harvesting usually associated with resident activity. This model law has been developed from a review of existing municipal regulations in New York and New England.<sup>1</sup>

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1. Carol E. Youell, "Municipal Regulation of Timber Harvesting – The Connecticut Experience," paper presented at the New England Society of American Foresters 64th Annual Meeting, 1984; Lloyd C. Irland, "Regulation of Timber Harvesting: A State Policy Perspective," presented at the Symposium on Regulation of Timbering Harvesting in the Northeast, Connecticut Forest and Park Association, May 4, 1983; "Pros and Cons of Local Logging Ordinances," *Cooperative Extension in New York State Conservation Circular*, Vol. 20, No. 3 (Spring 1982); New York State Forest Practice Board, "Recommended Model Timber Harvesting Ordinance."

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LOCAL LAW \_\_\_\_\_ 19 \_\_\_\_  
TIMBER HARVESTING

Be It Enacted By The Town Board Of  
The Town of \_\_\_\_\_ As Follows:

**(1) Purpose** - The purpose of this Law is to protect the health, safety and welfare of the residents of the Town of \_\_\_\_\_ by protecting the natural and scenic environment as affected by timber harvesting. The Town recognizes that the timber resource is a renewable resource of significant value and may be harvested. The Town also recognizes that haphazard timber harvesting can cause: aesthetic damage to the land and publicly important views; damage to soils and waters from soil erosion and stormwater; inappropriate uses of land from poorly planned, pre-development site clearing and road construction.

**(2) Permitted Uses** - Harvests of less than fifteen (15) cords or less than 10,000 board feet per landowner per year provided no clearcutting of every tree within a single contiguous area greater than 20,000 square feet; Christmas tree culture; clearing for farm purposes within agricultural districts established pursuant to New York State Law.

**(3) Permit Required by Zoning Enforcement Officer** - Harvests representing 16 to 100 cords or 10,000 to 25,000 board feet per landowner per year. The landowner shall be required to submit a property map showing abutting owners and locations of water courses and wetlands, to submit a written description in plain language of the harvest operation and to notify abutting owners

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prior to harvest initiation. Application fee shall be \$15.00.

**(4) Site Plan Approval Required from Planning Board -** Harvests exceeding 100 cords or 25,000 board feet per landowner per year. The landowner shall be required to meet all requirements of Section (3) of this Law. In addition, the landowner shall submit a timber-harvesting site plan showing layout of operation including skid trails and landings as well as a sedimentation and erosion control plan consistent with current applicable best management practices of the New York State Department of Environmental Conservation and the State Forest Practice Board. Application fee shall be \$50.00.

**(5) Conditions of Approval -** Where a permit or site plan is required prior to the initiation of harvesting, the Town may require on-site inspection, flagging of property boundaries adjacent to harvest areas, flagging of streams and wetlands, and notification of completion of work.

**(6) Performance Bond -** Prior to the commencement of any timber harvesting, a performance bond may be required guaranteeing that the applicable best management practices cited above will be followed. Such bond shall not exceed 100% of the estimated value of the timber to be harvested. Any bond must be of acceptable surety and shall be deposited with the Town Clerk.



Because the Shawangunk Ridge is both a major topographic obstacle separating eastern from central regions of New York State and a feature offering high, open elevations, the rapidly growing telecommunications industry has regularly sought to site towers and antennae along the ridge top. The following model regulation<sup>1</sup> serves to provide rational criteria for reviewing new or enhanced telecommunication facility proposals.

The following model language can be approved as a local law and inserted as an amendment within the existing zoning ordinance under the appropriate section(s) dealing with special or conditional uses. Certain editing may be required to accommodate the existing written format of municipal regulations.

Please note that the intention of these regulations is to address only commercial uses. Residential accessory uses (e.g., television antennae, satellite dishes, ham radio, citizens band radio) are not affected. Specifically, exceptions to these regulations are (1) new uses which are accessory to residential uses, and (2) approved uses existing prior to the effective date of these regulations.

Existing regulatory language relevant to “television and radio towers” and similar uses should be deleted. Each community must also decide within which zones such towers will be allowed as a special use.

Additionally, town or village boards should consider formally defining “the construction of telecommunications towers” as a Type 1 action under the New York State Environmental Quality Review Act (SEQR), thereby assuring opportunity for municipal environmental review.

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1. This model regulation was originally written in 1990 by David Church and Luther Propst, working for The World Wildlife Fund, as a commission for Friends of The Shawangunks (Accord, NY).

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**SECTION XXX: TELECOMMUNICATIONS TOWERS**

**(1) Definitions:**

**(1)(a) Telecommunications Tower** - A structure on which transmitting and/or receiving antenna(e) is located.

**(1)(b) Antenna** - A system of electrical conductors that transmits or receives radio frequency waves. Such waves shall include but not be limited to radionavigation, radio, television, and microwave communications. The frequency of these waves generally ranges from 10 hertz to 300,000 megahertz.

**(1)(c) Accessory Facility** - An accessory facility serves the principle use, is subordinate in area, extent and purpose to the principle use, and is located on the same lot as the principle use. Examples of such facilities include transmission equipment and storage sheds. *[Note: definition may require editing to relate to accessory structures regulated elsewhere in each town's law.]*

**(1)(d) Special Use (a.k.a. Conditional Use)** - A use which is deemed allowable within a given zoning district, but which is potentially incompatible with other uses and, therefore, is subject to special standards and conditions set forth for such use subject to approval by the Planning Board (in some communities the Zoning Board or Town Board). *[Note: this definition is included if needed. It should already exist in zoning, and if so, can be deleted here.]*

**(2) Purpose:**

The purpose of these supplemental regulations is to promote the health, safety and general welfare of the residents of the Town, to provide standards for the safe provision of

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telecommunications consistent with applicable Federal and State regulations, and to protect the natural features and aesthetic character of the Town with special attention to the Shawangunk Ridge.

**(3) Application of Special Use Regulations:**

**(3)(a)** No transmission tower shall hereafter be used, erected, moved, reconstructed, changed or altered unless in conformity with these regulations. No existing structure shall be modified to serve as a transmission tower unless in conformity with these regulations.

**(3)(b)** These regulations shall apply to all property within the following zones: \_\_\_\_\_ (see Table \_\_\_\_\_)

*[Note: Include a cross reference to the Table of Permitted Uses or its equivalent.]*

**(3)(c)** Exceptions to these regulations are limited to (i) new uses which are accessory to residential uses, so long as the height of any such use does not exceed the elevation of the surrounding and neighboring treeline, and (ii) approved uses existing prior to the effective date of these regulations.

**(3)(d)** Where these regulations conflict with other town laws and regulations, the more restrictive shall apply, except for tower height restrictions which are governed by these special use standards.

**(4) Special Use Standards:**

**(4)(a) Site Plan**

**(4)(a)(i)** An applicant shall be required to submit a site plan as described in Section(s) \_\_\_\_\_ *[cross reference to appropriate section(s) describing site plan requirements and procedures]*. The site plan shall show all existing and proposed structures and improvements including

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roads and shall include grading plans for new facilities and roads. The site plan shall also include documentation on the proposed intent and capacity of use as well as a justification for the height of any tower or antennae and justification for any clearing required.

**(4)(a)(ii)** Additionally, the Planning Board shall require that the site plan include a completed Visual Environmental Assessment Form (Visual EAF), available from the Planning Board and a landscaping plan addressing other standards listed within this section with particular attention to visibility from key viewpoints within and outside of the municipality as identified in the Visual EAF. The Planning Board may require submittal of a more detailed visual analysis based on the results of the Visual EAF as well as a Tree Conservation Plan in addressing this section and Section (4)(e) below. *[Note: a Visual EAF is attached; see pp. 55-56.]*

**(4)(b) Shared Use**

**(4)(b)(i)** At all times, shared use of existing towers shall be preferred to the construction of new towers. An applicant shall be required to present an adequate report inventorying existing towers within reasonable distance of the proposed site and outlining opportunities for shared use of existing facilities as an alternative to the proposed use.

**(4)(b)(ii)** An applicant intending to share use of an existing tower shall be required to document intent from an existing tower owner to share use. The applicant shall pay all reasonable fees and costs of adapting an existing facility to a new shared use. Those costs include but are not limited to structural reinforcement, preventing transmission or receiver interference, additional site screening, and other changes

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including real property acquisition of lease required to accommodate shared use. Costs associated with this subsection shall be considered unreasonable if they exceed the cost of the proposed new use at a new and separate location.

**(4)(b)(iii)** In the case of new towers, the applicant shall be required to submit a report demonstrating good faith efforts to secure shared use from existing towers as well as documenting capacity for future shared use of the proposed tower. Written requests and responses for shared use shall be provided.

**(4)(c) Setbacks** - Towers and antennae shall comply with all existing setbacks within the affected zone. Additional setbacks may be required by the Planning Board to contain on-site substantially all ice-fall or debris from tower failure and/or to preserve privacy of adjoining residential and public property. Setbacks shall apply to all tower parts including guy wire anchors, and to any accessory facilities.

**(4)(d) Visibility**

**(4)(d)(i)** All towers and accessory facilities shall be sited to have the least practical adverse visual effect on the environment.

**(4)(d)(ii)** Towers shall not be artificially lighted except to assure human safety as required by the Federal Aviation Administration (FAA). Towers shall be a galvanized finish or painted gray above the surrounding treeline and painted gray, green or black below the surrounding treeline unless other standards are required by the FAA. In all cases, guyed towers shall be preferable to free-standing structures. Towers should be designed and sited so as to avoid, whenever possible, application of FAA lighting and painting requirements.

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(4)(d)(iii) Accessory facilities shall maximize use of building materials, colors and textures designed to blend with the natural surroundings.

(4)(e) **Existing Vegetation** - Existing on-site vegetation shall be preserved to the maximum extent possible, and no cutting of trees exceeding four (4) inches in diameter (measured at a height of four (4) feet off the ground) shall take place prior to approval of the special permit use. Clearcutting of all trees in a single contiguous area exceeding 20,000 square feet shall be prohibited.

(4)(f) **Screening** - Deciduous or evergreen tree plantings may be required to screen portions of the tower from nearby residential property as well as from public sites known to include important views or vistas. Where the site abuts residential or public property, including streets, the following vegetative screening shall be required: For all towers, at least one row of native evergreen shrubs or trees capable of forming a continuous hedge at least ten feet in height within two years of planting shall be provided to effectively screen the tower base and accessory facilities. In the case of poor soil conditions, planting may be required on soil berms to assure plant survival. Plant height in these cases shall include the height of any berm.

(4)(g) **Access and Parking** - A road and parking will be provided to assure adequate emergency and service access. Maximum use of existing roads, public or private, shall be made. Road construction shall be consistent with standards for private roads [*Note: If these standards do not exist they can be provided*] and shall at all times minimize ground disturbance and vegetation cutting to within the toe of fill, the top of cuts, or no more than ten feet beyond the edge of

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## VISUAL EAF ADDENDUM

(To be completed by Lead Agency)

### VISIBILITY

1. Is the project potentially visible from:	Check distance as appropriate in miles Project is from each resource				
	0- <sup>1</sup> / <sub>4</sub>	<sup>1</sup> / <sub>4</sub> - <sup>1</sup> / <sub>2</sub>	<sup>1</sup> / <sub>2</sub> -3	3-5	5+
•A parcel of land which is dedicated to and available to the public for the use, enjoyment and appreciation of natural or man-made scenic qualities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•An overlook or parcel of land dedicated to public observation, enjoyment and appreciation of natural or man-made scenic qualities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•A site or structure on or eligible for inclusion in the National or State Register of Historic Places.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•State Parks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•The State Forest Preserve.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•National Wildlife Refuges and state game refuges.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•National Natural Landmarks and other outstanding natural features.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•National Park System.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•Rivers designated as National or State Wild, Scenic or Recreational.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•Any transportation corridor of high exposure, such as part of the Interstate System, or Amtrak.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•A governmentally established or designated interstate or inter-county foot trail, or one proposed for establishment or designation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•A site, area, lake, reservoir or highway designated or eligible for designation as scenic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•Municipal park, or open space.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•County road.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
•Local road.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Is the visibility of the project seasonal (i.e., screened by summer foliage but visible during other seasons)? <span style="float: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No</span>					
3. Are any of the resources checked in question 1 used by the public during the time of the year during which the project will be visible? <span style="float: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No</span>					

**DESCRIPTION OF EXISTING VISUAL ENVIRONMENT**

4. From each item checked in question 1, check those which most generally describe the surrounding environment.

	Within	
	$\frac{1}{4}$ mi.*	1 mi.*
Essentially undeveloped	<input type="checkbox"/>	<input type="checkbox"/>
Forested	<input type="checkbox"/>	<input type="checkbox"/>
Agricultural	<input type="checkbox"/>	<input type="checkbox"/>
Suburban residential	<input type="checkbox"/>	<input type="checkbox"/>
Industrial	<input type="checkbox"/>	<input type="checkbox"/>
Commercial	<input type="checkbox"/>	<input type="checkbox"/>
Urban	<input type="checkbox"/>	<input type="checkbox"/>
River, Lake	<input type="checkbox"/>	<input type="checkbox"/>
Cliffs, overlooks	<input type="checkbox"/>	<input type="checkbox"/>
Designated aesthetic resource	<input type="checkbox"/>	<input type="checkbox"/>
Flat	<input type="checkbox"/>	<input type="checkbox"/>
Hilly Mountainous	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

5. Are there visually similar projects within

$\frac{1}{2}$ mile*	<input type="checkbox"/> Yes	<input type="checkbox"/> No
1 mile*	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2 miles*	<input type="checkbox"/> Yes	<input type="checkbox"/> No
3 miles*	<input type="checkbox"/> Yes	<input type="checkbox"/> No

\*Distances from project site are provided for assistance. Substitute other distances as appropriate.

**EXPOSURE**

6. The annual number of viewers likely to observe the proposed project is \_\_\_\_.

NOTE: When user data is unavailable or unknown, use best estimate.

NOTE: add attachments as needed.

**CONTEXT**

7. The situation or activity in which the viewers are engaged while viewing the proposed action is

Activity	Frequency			
	Daily	Weekly	Holidays/ Weekends	Seasonal
Travel to and from work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Involved in recreational activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Routine travel by residents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At a residence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At worksite	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

TOWN OF SHAWANGUNK, ULSTER COUNTY, NEW YORK  
CRITICAL ENVIRONMENTAL AREA: SHAWANGUNK RIDGE

**PURPOSE**

In order to assist in the protection of important community resources, the Town of Shawangunk has designated the Shawangunk Ridge as a Critical Environmental Area (CEA) as provided under the New York State Environmental Quality Review Act (NYCRR 617.4).<sup>1</sup> The effective date of this designation was \_\_\_\_\_, 19\_\_\_. If you are initiating an action which is subject to review under the State Environmental Quality Review Act and includes property which is within or substantially contiguous to the Shawangunk Ridge as defined below, you will be asked to document the effects that action might have on the area by completing the Long Form Environmental Assessment Form (Long Form EAF) available at the town municipal building.

The following report provides general background on the critical environmental area which should be used in evaluating actions subject to State Environmental Quality Review Act (SEQR).

**LOCATION AND BOUNDARY DESCRIPTION**

The Shawangunk Ridge is the dominant topographic feature found in the western portion of the Town of Shawangunk. The northeast/southwest trending ridge covers nearly all of the extreme western area of the town.

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1. New York Code of Rules and Regulations, Part 617, defines the rules and regulations of the State Environmental Quality Review Act (also known as SEQR).

2. Composite map made from United States Geological Survey (USGS) 15 minute quadrangles "Napanoch," "Ellenville" and "Wurtsboro." [Ed. note: Not included in this guidebook.]

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Under the critical environmental area (CEA) designation, the Shawangunk Ridge is specifically defined to include all lands within the town which are shown on the attached map.<sup>2</sup> This boundary is defined based on research and mapping found within the College at New Paltz, Institute for Development, Planning and Land Use Studies (ID-Plus) report titled *The Shawangunk Mountains: A Critical Environmental Region*. That report defines the critical environmental area using a combination of natural indicators, most specifically soil type, slope and wildlife habitat.

Generally, the critical environmental area includes all lands within the town west and north of the line described here. Beginning at the Gardiner/Shawangunk Town line at Decker Road, the boundary line follows Decker Road south to Jansen Road, then west/southwest along Mountain Road, Redders Road, and then Oregon Trail to its intersection with the Verkeerder Kill at Registro Road. Leaving Oregon Trail, the eastern boundary of the CEA continues down along the center line of the Verkeerder Kill to a point approximately 500 [feet] northwest of Sinsabaugh Road. That point is the confluence with the first major tributary of the Verkeerder Kill. From that point the CEA boundary turns west following up the centerline of the above-mentioned tributary back toward Oregon Trail. The boundary then continues south/southwest along Oregon Trail then across Route 52 along Weed Road to the Shawangunk/Mamakating Town line.

#### **OWNERSHIP**

The Shawangunk Ridge CEA in the Town of Shawangunk is almost entirely divided into individual, privately owned tax parcels. To the extreme west of the town at the upper slopes and top of the ridge, large public land holdings are held by the Village

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of Ellenville as part of its water supply area; Ice Caves Mountain, Inc., who as operators of Ice Caves Mountain lease portions of the Ellenville land; and by the State of New York as part of Minnewaska State Park. Additionally, the State of New York holds an approximately 100-acre "forest preserve" property on the east side of Oregon trail about 1.5 miles northeast of Walker Valley.

**SIGNIFICANCE**

**"a benefit or threat to human health" (NYCRR 617.4(h)(1)(i))<sup>3</sup>**

The ridge forms the headwaters for a watershed covering a large and developing region. As headwaters, the ridge is a priceless resource. At the ridge top contiguous with the western bounds of the Town of Shawangunk is Lake Maratanza, the public water supply for the Village of Ellenville. Several tributaries of the Shawangunk Kill, the majority of which are classified "A" (drinkable) by the New York State Department of Environmental Conservation (NYSDEC), flow off the eastern flank of the ridge. Orange County has recognized the quality of this water by looking to the Shawangunk Kill to support some regional water supply need. Numerous springs exist in the area including those off Indian Springs Road, the latter now being developed for a bottled water works. Finally, all individuals and families residing in the area rely on the bedrock aquifer found within the fractured rock as a source of water.

**"a natural setting" (NYCRR 617.4(h)(1)(ii))**

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3. NYCRR, Part 617 (also known as SEQR).

4. Peter Fairweather and George A. Schnell, *The Shawangunk Mountains: A Critical Environmental Region* (New Paltz: The College at New Paltz, Institute for Development, Planning and Land Use Studies, 1987), p. iv.

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The Shawangunk Ridge is considered "one of only three major wilderness areas found within 100 miles of New York City."<sup>4</sup> Within that wilderness is a range of important resources which together contribute to the unique and fragile natural setting of the ridge.

Resources of particular interest within or contiguous to the Town of Shawangunk CEA include: (1) a complex of pristine, perennial streams tributary to the Shawangunk Kill, including Beaver Brook, Verkeerder Kill and Coxing Kill. Many of these drainages include documented trout populations and/or trout spawning. Additionally, these streams support the Shawangunk Kill, a "recreational river" under New York State's Wild, Scenic and Recreational Rivers Program; (2) a spectacular waterfall at Verkeerder Kill Falls; (3) a series of ice caves within the fractured and jointed conglomerate bedrock; (4) dramatic views from various points along the ridge; (5) Lake Maratanza, one of a series of "sky lakes" situated along the ridge top; and (6) a series of unique wildlife habitats including "the only extensive high-altitude pitch pine barrens, and the only bedrock dwarf pine plains in the world."<sup>5</sup>

Significant wildlife habitat types of the Northern Shawangunks including the Town of Shawangunk area have been categorized by Kiviat (1988:32-39) and are listed below. All of these habitats exist somewhere within the designated Critical Environmental Area. They are:

- Cool, clear nutrient-poor waters (lakes, streams and waterfalls)
- Wetlands
- Ice caves

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5. Eric Kiviat, *The Northern Shawangunks, An Ecological Survey* (New Paltz: Mohonk Preserve, Inc., 1988), p. xiii.

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- Cliff-and-talus
  - Slabrock
  - Ravines
  - Pitch pine barrens and dwarf pitch pine plains
  - Virgin forests
  - Hawk migration route
  - Miscellaneous geologic features (primarily at bedrock contacts).

Biological communities and species found within these habitats are significant and in many cases highly vulnerable to disturbance. Appended to this report are lists of Endangered, Threatened, Special Concern, and Regionally Rare animals and plants as inventoried by Kiviat (1988) from available research.<sup>6</sup>

**"social, cultural, historic, archaeological, recreational, or educational values" NYCRR 617.4(h)(1)(iii)**

The Shawangunk Ridge is recognized as a significant community resource satisfying all of the above listed values. Of particular importance to the Town of Shawangunk is the recreational value of the ridge. Formally, that portion of the ridge includes Ice Caves Mountain, a heavily visited recreational attraction which includes opportunities for hiking, biking, cross-country skiing, snow-mobiling, and picnicking, as well as exploring the numerous and unique ice caves. Ice Caves Mountain is a National Natural Landmark because of the caves, the unique habitats and the spectacular views seen from all points on the ridge.

The ridge includes an important system of recreational trails

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6. [Ed. note: Not included in this guidebook.]

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including portions of the Long Path, a trail system now being developed as a continuous link from New York City to the Catskill Mountains.

The ridge is also known to have a potential for yielding archaeological resources. Although the area in Shawangunk has not been specifically studied, the similarity of terrain here and with that of other areas in the region where archaeological resources have been found suggests that prehistoric sites, particularly rockshelters, may exist along the eastern flanks of the ridge.

**"an inherent ecological, geological or hydrological sensitivity to change which may be adversely affected by any change"  
(NYCRR 617.4(h)(1)(iv))**

Several factors contribute to make much of the ridge Critical Environmental Area sensitive to change. As discussed above, documented unique habitats and the presence of known endangered, threatened, or regionally rare species combine to give the higher elevations of the ridge an overall inherent ecological sensitivity. Fairweather and Schnell (1987:4) have concluded that "ecosystems found on the Ridge tend to be in relatively early stages of ecological succession and are, therefore, unusually vulnerable to environmental and human disturbances." They continue (1987:6), "Because there is no region with soil and vegetation like the Northern Shawangunks, there is no substitute for the preservation of the Northern Shawangunks."

Geologically, the severe slopes and generally thin glacial soils place constraints on the extent and types of development

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7. Lawrence A. Tornes, "Soil Survey of Ulster County, New York" (Washington, DC: United States Department of Agriculture, Soil Conservation Service, n.d.).

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which can occur. As mapped by the United States Department of Agriculture, Soil Conservation Service, many of the soils found along and near the ridge consistently have severe limitations for developments which might include either septic systems [or] below-grade excavation.<sup>7</sup>

Hydrologically, the ridge is a highly complex and important source of water. As the highest topographic feature in the region, it is the headwaters of the water supply for a large and rapidly growing population. As mentioned previously, the perennial streams flowing off the face of the ridge and into the Shawangunk Kill/Wallkill Valley are of very high quality. A significant portion of this watershed within the Town of Shawangunk has been proposed to help supply Orange County's Dwaarkill Reservoir.

Finally, the complex faulting and jointing of the bedrock forming the ridge creates a topography highly vulnerable to ground- and surface-water pollution. This situation is aggravated by the current lack of extensive geologic research in the region and, therefore, a poor understanding of the specific characteristics of the bedrock hydrology.<sup>8</sup>

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8. Katherine Beinkafner, Ph.D., consulting geologist, New Paltz, NY, 1989, personal communication; Russell H. Waines, Ph.D., Department of Geological Sciences, State University of New York College at New Paltz, 1989, personal communication. See also Russell H. Waines, ed., "New York State Geological Association, 59th Annual Meeting, Field Trip Guidebook" (New Paltz: State University of New York, 1987).

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**DAVID CHURCH**, Executive Director of the New York Planning Federation, was formerly Director of Planning at The Catskill Center for Conservation and Development. An experienced community and environmental planner, Church is a member of the American Institute of Certified Planners as well as the Town of Shawangunk Planning Board.

**JOHN MYERS** is Trail Lands Consultant to the New York-New Jersey Trail Conference, where his work has included leadership in the creation of the Long Path trail system over the Shawangunk Ridge. Formerly with the Trust for Public Land, Myers continues to actively work with land owners on conservation and trail projects.

**TODD RICHARDSON** is a landscape architect in Biddeford, ME, and partner in Community Vision Inc., a non-profit consulting group specializing in community planning and design projects. An adjunct professor at Radcliff College and the University of Massachusetts, he is a member of the American Society of Landscape Architects.

**THE CATSKILL CENTER FOR CONSERVATION AND DEVELOPMENT, INC.**, headquartered in Arkville (Delaware County), is the sole regional advocate for the environmental and economic health of the Catskill Mountain region of New York State. Founded in 1969, the Catskill Center uses education, advocacy, model projects and legal action to protect the Catskills' natural and cultural assets.

**THE NEW YORK-NEW JERSEY TRAIL CONFERENCE** is a federation of hiking and outdoor clubs and individual members dedicated to the maintenance and protection of more than 1,100 miles of hiking trails in New York and New Jersey. Its headquarters are in New York City.





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features shall not be considered open space. Recreational features such as but not limited to playgrounds, ballfields, swimming pools, and tennis courts shall constitute no more than five percent (5%) of the required open space.

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any pavement. Road grades shall closely follow natural contours to assure minimal visual disturbance and reduce soil erosion potential. Public road standards may be waived in meeting the objectives of this subsection.

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