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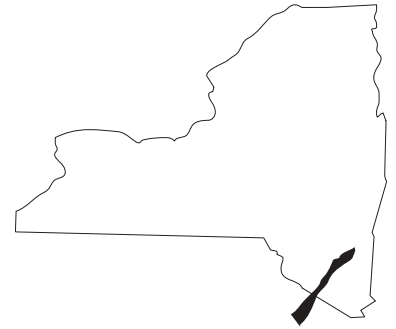
THE SHAWANGUNK RIDGE AS A REGION-WIDE DISTRICT

What makes the Shawangunk Ridge unique and significant?

The 50-mile-long Shawangunk Ridge stretches in a northeast-southwest direction from Rosendale to Port Jervis, defining the southeastern edge of the Catskill region of New York State. South of Port Jervis the ridgeline continues, forming the Kittatinny Mountains of New Jersey before extending across the Delaware River at the Delaware Water Gap; in Pennsylvania this same ridgeline becomes part of the complex Appalachian ridge and valley system.

Formed by a fold in the earth's crust about the same time the Appalachian and Taconic Mountains were formed (300 to 400 million years ago), most of the exposed bedrock at the Shawangunk ridgeline is hard quartz conglomerate (a type of sandstone), with shale and limestone veins beneath. The mineral composition of the ridge is responsible for both its spectacular scenic value as well as its unique ecology. The erosion-resistant character of the conglomerate has resulted in the striking line of the ridgetop, including the gray and white cliffs found along sections north of New York State Route 52.

The exposed ridgeline of the northern Shawangunks offers a fairly acidic and relatively infertile soil, while the soil in the crags and ravines can be extremely



Northern Shawangunk Ridge, cross section

rich and nearly pH neutral. As a result, plants and animals adapted to the ridge environment live within a very small, delicately balanced ecological niche. The southern Shawangunks are ecologically more subtle and less understood, yet they harbor important wilderness habitats which are now beginning to be studied.

Several research studies have documented the wealth of natural and cultural resources found on and near the Shawangunk Ridge.¹ The list below gives an overview of some of these great riches.

PARKS AND PRESERVES

- Mohonk Preserve
- Minnewaska State Park
- Ice Caves and Ellenville Tract
- Bear Hill Preserve
- Roosa Gap Forest Preserve
- Wurtsboro Ridge Forest Preserve
- Basha Kill Wildlife Management Area
- Nature Conservancy Neversink Preserve
- High Point State Park (New Jersey)

RECREATION RESOURCES

- Hiking
- Hunting
- Hang gliding
- Bird watching
- Nature walking
- Swimming
- Picnicking
- Fishing
- Rock climbing
- Cross-country skiing
- Bicycling
- Camping
- Scuba diving
- Small boating

1. Especially valuable are: Bradley Snyder, *The Shawangunk Mountains: A History of Nature and Man* (New Paltz: Mohonk Preserve, 1981); Erik Kiviat, *The Northern Shawangunks and the Lake Minnewaska Area: Ecological Significance* (Annandale: Hudsonia, 1984); Erik Kiviat, *The Northern Shawangunks: An Ecological Survey* (New Paltz: Mohonk Preserve, 1988); and Peter Fairweather and George Schnell, *The Shawangunk Mountains: A Critical Environmental Area* (New Paltz: State University of New York College at New Paltz, 1987).

NATURAL FEATURES

- Waterfalls
- Unbroken wilderness areas
- Mountaintop “sky” lakes
- Nationally significant ice caves
- World-famous cliffs and outcroppings
- Headwaters of numerous pristine mountain streams
- Caves
- High-elevation wetlands
- Talus fields

BIOLOGICAL HABITATS

- Globally significant dwarf pine forests
- Numerous rare plant habitats
- Rare pitch pine forests
- Substantially unbroken forest

SIGNIFICANT FLORA AND FAUNA

- Golden and bald eagles
- Cooper’s and red-shouldered hawks
- Peregrine falcon
- Eastern woodrat, fisher
- Hoary, Indiana and small-footed bats
- Timber rattlesnake
- Numerous rare plants, including broom crowberry, trifold rush, sundews, several gentians, and dwarf pitch pines

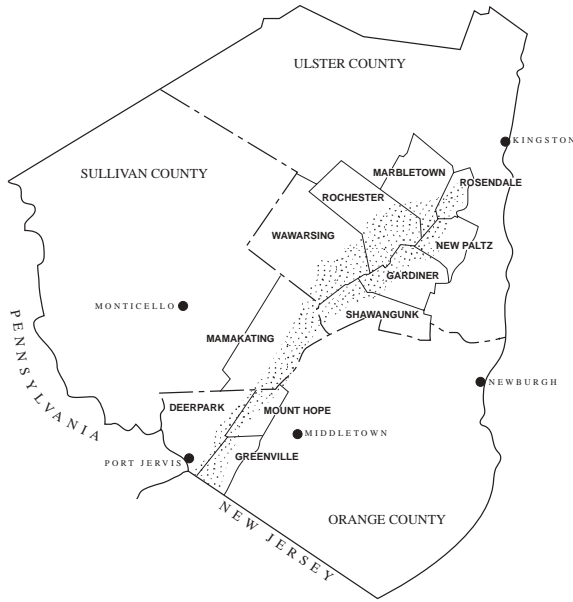
VIEWSHED RESOURCES

- Visible from most towns in the surrounding Neversink, Wallkill, Basha Kill and Rondout valleys
- From the ridgetop, 50-mile panoramic views

ECONOMIC RESOURCES

- Important tourist destination
 - Attractive housing market
 - Great scenic and recreational appeal
 - Timber and cordwood
 - Watershed for public drinking water supplies
-

What New York towns are considered “ridge” towns?



There are 11 “ridge” towns in three counties. They include:

ORANGE COUNTY

- Deerpark
- Greenville
- Mt. Hope

SULLIVAN COUNTY

- Mamakating

ULSTER COUNTY

- Shawangunk
- Wawarsing
- Gardiner
- Rochester
- New Paltz
- Marletown
- Rosendale

What conflicting trends are occurring along the ridge?

Because the Shawangunk Ridge has so much to offer to so many people, uses sometimes conflict. For example, several major trends now occurring include:

DEMANDS FOR NEW HOUSING

As population grows in the 11 ridge towns, there is more pressure to expand subdivisions up onto the ridge. Development pressure may increase with the expansion of Stewart Airport to the east near Newburgh and the continuing northward growth of the New York metropolitan area. People will continue to seek out property where relatively cheap rural house sites with prominent views are accessible to nearby job markets.

INCREASED RECREATIONAL USAGE

As more people discover the beauty of the Shawangunks, there is more demand for recreational opportunities along the ridge. This can conflict with housing demands, as areas that were once open for hunting, hiking and other public uses become closed because of private development.

DISAPPEARING UNIQUE NATURAL AREAS

Certain portions of the ridge, especially on the highest slopes and ridgetop, contain sensitive wildlife and natural areas. Once disrupted, these may never be restored. Guiding development away from such areas has been advocated as the only solution.

Why is subdivision of land in ridge and mountain areas such a challenge?

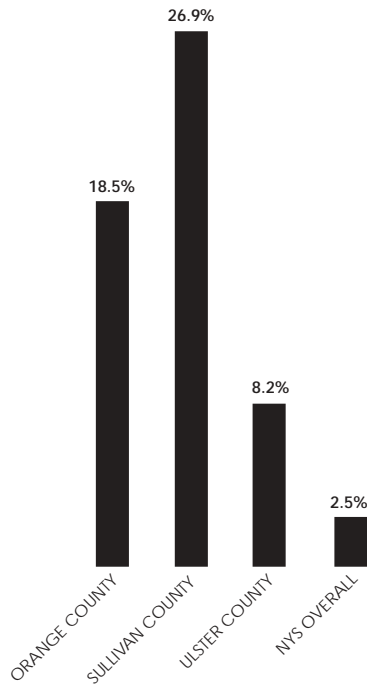
The potential for serious disturbance of the mountain environment is much greater than in other types of environments because:

- Ground disturbance on steep slopes can present erosion problems.
- Surface runoff can contaminate headwater mountain streams that supply drinking water downstream and recharge valley groundwater sources.
- Thin soils can present septic problems.
- Excessive or misplaced housing can disrupt wildlife corridors and critical habitats.
- Greater elevation makes houses, roads and other improvements highly visible from the valley and surrounding towns.

Why does conventional zoning fail to protect many significant environmental resources?

The original, early 20th century concept of zoning regulation was to make living conditions safer by dividing a municipality into different areas, locating, for example, factories and industries in one area and housing in another. Built on this concept of separation of uses, zoning evolved into a tool for planning the direction of a town's future expansion to best suit its transportation, health and safety needs. More recently, protecting important environmental resources has also become a major issue.

Many suburban and rural towns have attempted to minimize the impact of development in sensitive areas by lowering the density and increasing the minimum lot size from, for example, one acre to three acres. While the intention of increasing lot size is good, the outcome of this approach is often unsuccessful:



Population change of ridge towns, total by county, 1980-1990

land is often carved up into small parcels with little concern paid to maintaining contiguous blocks of open space or wildlife habitats. There may be a reduction in the number of houses, but there is no corresponding reduction in the loss of agricultural, forest and recreational land use. Since there usually are no design guidelines for siting of these houses, there is little control over the eventual visual appearance of the subdivision or the town.

Conventional large-lot subdivisions may also impose a high cost on local government to provide for needed services and infrastructure, which is rarely made up by tax revenues from such subdivisions.²

Are there options for ridge areas?

In recent years, a number of options have emerged allowing municipalities to go well beyond the original zoning goal of simple separation of land uses.³ For upland ridge and mountain areas of New York State these options include:

MOUNTAIN OR RIDGE ZONING

Here the actual zoning district is delineated by the ridge itself. Allowable uses, and site plan and subdivision standards are then written in the context of a topographic district. For instance, an RR (Residential Ridge) or MR (Mountain

2. The growing list of studies examining the costs of alternative land uses includes: *Density Related Public Costs* (Washington, DC: American Farmland Trust, n.d.); Christopher Bucknall, *The Real Cost of Development* (Poughkeepsie: Scenic Hudson, 1990); Darryl F. Caputo, *Open Space Pays: The Socioeconomics of Open Space Preservation* (Morristown: New Jersey Conservation Foundation, 1979); Cornell Cooperative Extension of Dutchess County and American Farmland Trust, *Cost of Community Services Study: Towns of Beekman and Northeast* (Millbrook, 1989); Tom Fox, *Urban Open Space, An Investment that Pays* (New York: Neighborhood Open Space Coalition, 1990); *Economic Impacts of Protecting Rivers, Trails and Greenway Corridors* (Washington, DC: National Park Service, 1990); Holly L. Thomas, *The Economic Benefits of Land Conservation* (Poughkeepsie: Dutchess County Planning Department, 1991). Valuable workbooks include: Robert W. Burchell, et. al., *The New Practitioner's Guide to Fiscal Impact Analysis* (New Brunswick, NJ: Center for Urban Policy Research, Rutgers, 1985); *The Tax Base and The Tax Bill* (Montpelier, VT: Vermont League of Cities and the Vermont Natural Resources Council, 1990).

3. A fuller discussion of these tools and others is available in numerous existing texts. See in particular: James A. Coon and Sheldon W. Damsky, *All You Ever Wanted to Know About Zoning* (Albany: New York Planning Federation, 1989), or "Tools and Strategies: Protecting the Landscape and Shaping Growth," *The Open Space Imperative #3* (New York: Regional Plan Association, 1990).

Residential) district can be mapped and appropriate uses and use densities defined by using one or a combination of tax lot lines, roads, or slope and soil maps which closely approximate the feature of interest.⁴

CRITICAL ENVIRONMENTAL AREA DESIGNATION

Under the State Environmental Quality Review Act (SEQR), a municipality may designate a specific geographic area within its boundaries as a critical environmental area (CEA). A CEA designation essentially requires that for a greater variety of actions within the designated area a reviewing agency must take a hard look at environmental impact before making a decision. For example, Appendix D includes the report used by the Town of Shawangunk Planning Board in reviewing proposals within what is currently the only CEA along the Shawangunk Ridge.⁵

LAND OR EASEMENT ACQUISITION

Municipalities and other public agencies, sometimes in partnership with nonprofit conservation organizations, have organized programs to directly purchase lands or conservation easements on lands.

TRANSFER OF DEVELOPMENT RIGHTS (TDR)

As part of a zoning regulation or local law, municipalities can require the transfer of development rights from “sending areas,” where conservation is desired, to “receiving areas” where denser development can be managed. Specifically allowed in New York State under Chapter 40 of the Laws of 1989, TDR maintains a property owner’s rights to develop, yet seeks to have use of some of those rights transferred to more suitable locations.⁶

4. Many municipalities use “ridge” or “mountain” in the name of a zoning district. However, to date such zones do little more than increase minimum lot sizes over adjoining zones.

5. See *Critical Environmental Area Designation, A Handbook for Local Government* (Millbrook: Dutchess County Environmental Management Council, 1988). Also, for a direct discussion of the merits of CEA designation for the Shawangunk Ridge, see Fairweather and Schnell, *op. cit.*

6. TDR programs have been implemented at the county or regional level in several states, notably in the New Jersey pinelands. In New York, although a few municipalities now allow TDR, no municipality has yet to authorize a transfer. See “Making TDR Work,” *Journal of the American Planning Association*, Spring 1986.

What is an “overlay district”?

An “overlay district” is a special zone that is drawn on a map outlining a significant resource. The resource could be wetlands, a shoreline or a mountain ridge. This district is “overlaid” on the existing zoning districts of the town. The overlay district then supplements the zoning regulations of the underlying districts.

This approach allows a town to maintain current zoning codes while addressing the special needs of particularly sensitive areas.

Floodplains are a good example of overlay districts where any housing or construction must meet certain extra standards in order to be approved. This is done to protect lives and property and ensure the natural functioning of the floodplain. Overlay districts have also been used along coastlines to assure houses are safely set back and constructed to withstand severe storms. Overlay districts are currently used in many cities and towns across the country for a variety of other purposes, including protection of agricultural resources, historic properties, aquifers, wetlands and scenic views.

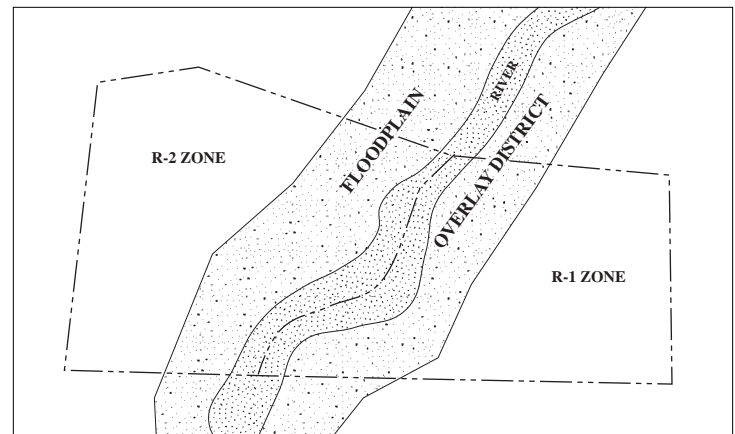
Some of the major advantages of using overlay districts include:

FLEXIBILITY OF DESIGN

An overlay district can be mapped and written to incorporate whatever features are most important to a town. Boundaries can be easily defined using tax lot lines, roads, and existing slope or soils maps which closely approximate the feature of interest. The district can be designed to address specific needs in one town that may not occur in surrounding communities.

BROAD RANGE OF ISSUES COVERED

An overlay district can address all of a town’s concerns regarding any proposed land-use change inside the district. Anything that might impact the



Floodplain overlay district

quality of the proposed mapped feature can be addressed, including road requirements, frontage, lot size, lot shape, setbacks, tree cutting, vegetation buffers, siting of houses, lighting and open-space natural areas.

EASE OF ADOPTION

An overlay district can easily be implemented by passing a town law appending it to the existing zoning regulations. Substantial rewriting of underlying zoning and subdivision regulations is not required. An overlay district also can easily be modified in the future should the town discover it wishes to add or modify items.

SELF-RULE

Using an overlay district, a municipality continues to protect its own resources without the imposition of authority from outside agencies. The decision-making process, therefore, is kept at the local level where stewardship can remain a point of community pride. Officials and involved citizens retain the opportunity to exercise self-determination and self-responsibility for their town's future.

REGIONAL CONTEXT

Many geographic features, like the Shawangunk Ridge, extend across several municipalities. Adoption of similar overlay districts by adjoining towns would permit consistent region-wide planning for such a feature, rather than piecemeal protection.

What are the benefits of using ridge overlay districts?

The real power and effectiveness of overlay districts lies in the fact that not just one, but all the parties involved in the land-development review process can benefit. This includes the town, the property owner or developer and the public.

BENEFITS TO THE TOWN

There are no additional costs to the town to review development applications within an overlay district. While the standards and requirements to the

developer are different than they are in other, non-overlaid zoning districts, the public-hearing procedure to obtain approvals is the same.

Since the guidelines and expectations for the overlay district are clearly defined in advance, major battles at planning board meetings between the town, a developer and the public may be minimized or eliminated.

The town has much greater control over preserving scenic, recreational and wildlife resources, while still permitting appropriate development.

If the majority of the 11 Shawangunk Ridge towns were to adopt ridge overlay districts similar to the one proposed in this guidebook, a significant step would be taken toward long-term, cooperative protection of the Shawangunk Ridge. The Shawangunks have recreational opportunities unlike anywhere else in the world. Long-term protection of the ridge will repay itself to the local towns many times over in avoidance of costly debate on individual projects, reduction of environmental damage and generation of future tourism revenue.

BENEFITS TO THE PROPERTY OWNER OR DEVELOPER

When building in an overlay district, a developer will have a clear understanding of the town's expectations and realistic development possibilities at the beginning of the approval process, before major commitments or expenditures are made.

Since measures to protect the environment are built into the overlay district site plan from the beginning, the SEQR review process can be more effectively focused. This can lead to a quicker and less-costly approval process.

Through cooperation early in the process among the developer, town, the public and other interested parties, the chances of long, embroiled legal battles are minimized, saving time and money.

The overall infrastructure costs (roads, sidewalks, curbs, lighting) potentially can be lower when the developer follows guidelines set forth in the overlay district.

BENEFITS TO THE PUBLIC

The most significant and environmentally endangered sections of the ridge can be permanently maintained as natural areas and protected for present and

future enjoyment.

Invaluable wildlife and recreation corridors can be protected along the length of the ridge.

The need for state and federal funds to acquire and manage endangered land may be complemented or reduced.

Well-designed housing can be created that will preserve the visual beauty of the ridge. By siting new housing lower on the ridge (closer to existing roads) and using natural colors for roofs and siding, visual impact of development can be kept minimal. In this way, the unbroken “sweep” of the ridgeline, now enjoyed from the valleys on both sides of the ridge, can be maintained.

What places have successfully implemented overlay districts?

Many municipalities across the country have successfully implemented overlay districts to achieve the twin goals of protecting important natural and cultural resources while allowing the creation of well-designed subdivisions and housing. These include:

- Concord, MA (Wetlands district)
- Black Hawk County, IA (Agricultural district)
- Lubbock, TX (Historic district)
- Charleston, SC (Scenic highway)
- Woodstock, NY (Scenic and gateway district)
- Denver, CO (Mountain view regulation)
- Washington, NY (Agriculture and aquifer protection)
- Falmouth, MA (Wildlife corridor bylaw)

How does an overlay district affect required environmental review?

Many towns have created natural resource inventories listing all the unique and endangered elements within the town. Citizens often assist in identifying important local resources that are not widely known. By deciding what the significant natural resources are in the town and mapping them in advance, the town can

easily determine if a proposed development will impact any of these areas.

The role of environmental review, as defined in SEQRA, is to identify whether a proposed development will have any adverse impact on the environment. For instance, when a proposed subdivision follows overlay district guidelines by siting houses in less-critical locations, leaving critical areas undisturbed, the SEQR process has fewer issues to resolve.

If, however, housing is proposed in a unique or fragile area, then environmental impacts must be closely examined. Fairweather and Schnell⁷ have suggested four important elements to trigger the evaluation of proposed new developments on the Shawangunk Ridge:

ELEVATION

Because of the higher ridge elevations, various microclimates exist which include species unique to the area.

SLOPE

Steeper slopes result in fragile habitat for surface vegetation, which can result in severe environmental impact if disturbed.

SOIL

Mountain regions typically have much shallower soils to bedrock, with corresponding unique plant species adapted to the harsh terrain.

HABITATS

Numerous plant and animal species inhabit mountain areas and may not survive when ridge corridors are disrupted.

Effective application of overlay districts in the ridge towns can help assure the environmental protection that SEQR was designed to encourage. If a developer addresses the important issues early in the subdivision plan, the SEQR process can proceed more effectively, since important parts of the planning work—incorporating environmental protection—have already been done.

7. *The Shawangunk Mountains: A Critical Environmental Area, op. cit.*
