

Chapter 4: Priority Conservation Network: Hubs and Corridors

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Introduction

This plan recognizes that an appropriate balance between conservation and development can be achieved –one that conserves the town’s important water resources, agricultural lands, and wildlife habitats while allowing for future development and change that respects the capacity of the land. The town’s conservation network is the starting framework for achieving such a balance.

Gardiner’s conservation network is an interconnected system of large conservation “hubs” surrounded by a matrix of living landscapes. Conservation hubs are the network’s anchors and provide large blocks of wildlife habitat and unfragmented farmlands. Conservation corridors provide for movement between the hubs. The living landscapes are the background matrix of developed and undeveloped lands, which provide “stepping stones” and smaller scale connectivity for wildlife and for people.

The town’s conservation network includes various resources of conservation. It includes permanently conserved lands, such as the Minnewaska State Park on the Shawangunk Ridge, and other smaller parcels protected by conservation organizations such as the Wallkill Valley Land Trust. It also includes working landscapes such as farmland and forests that provide conservation benefits. Some of these working landscapes may be permanently protected through conservation easements; others may not be permanently conserved but still add value to the conservation network through the stewardship of the landowners. Other lands that provide conservation benefits might include residential landscapes, such as conservation subdivisions.

How the Conservation Network was Identified

The identification of Gardiner’s priority conservation network was conducted using a geographic information system (GIS) database. This database included the inventory data discussed in Chapter 2 of this plan. Open space priority area rating criteria (“rating criteria”) were developed to analyze the GIS data (Appendix C). Rather than rating parcels, the process was based on the town’s resources - these resources often cross parcel boundaries (and even town boundaries). Thus, the result is not a set of parcels that are priority, but rather areas that follow resource patterns.

The rating criteria are based on three inputs: natural systems (including aquifers, water resources and wildlife habitats) working landscapes and cultural and recreational resources (following the resource inventory in Chapter 2) and lands within the entire town were rated. An extensive set of data went into each of the three inputs. The rating criteria were developed using the best available science and resource management assumptions.

The priority conservation network described in this chapter is an interpretation of the rating results. Areas that were identified as the highest priority (the darkest blue or purple on the Priority Conservation Network map) were those that had the highest combined score, most often areas where there were overlapping resources such as excellent agricultural soils, aquifer recharge areas, and important wildlife habitat. The results were interpreted, working with people knowledgeable of Gardiner’s resources, into the resulting priority conservation network discussed in this chapter.

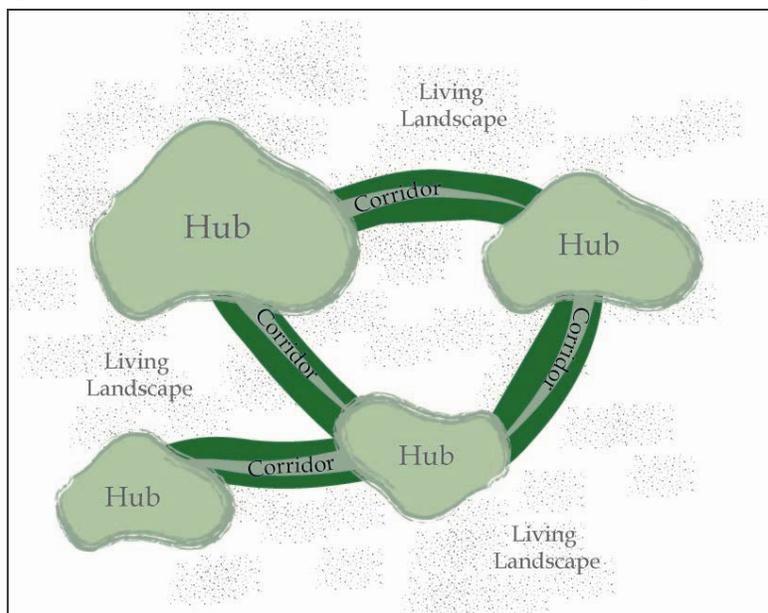
The priority conservation network was reviewed by members of Gardiner’s open space committee, planning board, and town board and presented in a public session. Additionally, the natural systems rating system and criteria and their results were reviewed by a panel of resource experts, ecologists and scientists. The group also helped to determine appropriate conservation corridors connecting the hubs.

More detail on the rating criteria is provided in Appendix C.

Conservation Network Components

The Priority Conservation Network Map illustrates conservation hubs, corridors and living landscapes. The **hubs** are the darkest areas on the map – dark blue and purple - and are outlined with a purple dashed line. The **corridors** are green dashed lines that connect conservation hubs along streams and other linear resources. The **living landscapes** are the areas in-between - light blue or white in color.

Conservation **hubs** are large, unfragmented areas of forest, grassland, meadow, wetland, and active farms that provide benefits of aquifer recharge, among others. Conservation hubs include a diversity of habitat types necessary to support functioning natural systems. For example, the Wallkill River South “hub” includes not only the river corridor and floodplain, but also the associated forest and upland habitat, and a



Conservation Network Components: Hubs are the major landscape anchors; corridors connect hubs together along streams, mountain passes and other habitat linkages; living landscapes help to maintain the integrity of hubs and corridors through landowner stewardship and conservation design.

surrounding farmland buffer. Conservation “hubs” also include the town’s core farming areas, which are important community and economic resources, and contribute to the scenic quality and rural character of the town.

The role of conservation hubs varies at different scales. For example, the Route 208 farmland hubs are part of the Hudson River Valley farmland core that extends throughout New York. They also provide significant aquifer recharge benefits for Gardiner. The Shawangunk Ridge hub in Gardiner is part of a much larger regional conservation hub that is known for its exceptional diversity of wildlife. Other hubs in the town might not provide for the same extent of diversity as the Shawangunk Ridge but are still important locally because they provide habitat for rare species or protect a unique natural community.

As the anchors of the conservation network, lands within conservation hubs should be conserved to the extent possible for the benefits they provide to the town’s economy, community and ecosystem. These lands should be considered the focal point for the efforts of the town’s land conservation program, and appropriate resources should be secured to ensure that lands within these hubs can be conserved, if the landowner chooses to do so. The economic benefits of conservation of these lands should be made competitive with the benefits of development.

Conservation “hubs” are connected by **corridors** for movement of wildlife and water, and for seed and pollen dispersal. Wildlife linkages help to connect fragmented open space areas and are sometimes the only path that can be safely traveled. These linkages also offer opportunities for community connections, for example a pathway along the Wallkill River or a series of kayak and canoe access points along the Shawangunk and Wallkill Rivers (a blueway trail).

Corridors can be conserved through a combination of protective measures such as enhanced stream and wetland buffers as well as through acquisition and conservation of important lands. Buffer zones are needed to protect these vulnerable areas from degradation from grading and residential development.

Both landscape hubs and wildlife corridors sit within a background matrix of developed and undeveloped **living landscapes** including agricultural lands, residential “homesteads” and other types of development. Living landscapes help to maintain the primary conservation resources and goals when they are designed with conservation in mind. For example, a living landscape such as a new residential development may be designed to provide an adequate buffer of an existing landscape hub or corridor. Living landscapes such as farms, or even residential homes, may also be designed to provide “stepping stones” or smaller habitat patches for wildlife travel or plant dispersal between larger hubs or corridors.

Living landscapes exist throughout the town already, through the careful stewardship of generations of landowners. In the future, living landscape can be achieved through

conservation design and through partnerships with landowners that help to maintain working farmlands and biodiversity.

Reading the Priority Conservation Network Map

The Priority Conservation Network Map illustrates conservation hubs, corridors and living landscapes. The **hubs** are the darkest areas on the map – dark blue and purple - and are outlined with a purple dashed line. The **corridors** are green dashed lines that connect conservation hubs along streams and other linear resources. The **living landscapes** are the areas in-between - light blue or white in color.

The Priority Conservation Network Map can be used as a guide for conservation and development efforts in the town. In terms of conservation efforts, it can be used to help identify priority areas and parcels for the land conservation program.

Conservation of lands within each of the hubs would be conducted on a case-by-case basis, working with willing landowners to achieve common goals. The conservation priorities are not meant to restrict landowners, but rather to identify community and resource values that can serve as the framework for conservation efforts.

It is important to note that the Priority Conservation Network Map illustrates areas that are most important from a conservation standpoint. The areas that are not identified as a priority for conservation (those that are light blue or white) may mistakenly be interpreted as the best areas for development. This is not the case. For example, through its comprehensive planning process, the town has made compact development and intensive growth of its hamlets a priority. The hamlets are identified as conservation features because they include important historic resources, water resources or other conservation features. This intent of the Priority Conservation Network Map is not to limit the growth of the hamlets, but rather to reiterate that the growth should be accommodated in a way that respects the town's important resources. Likewise, if development were spread out in all of the areas that are not identified as priority for conservation (the white and light blue areas), the town's goal of compact development would not be met. A separate process is recommended to refine the desired "development areas" in the town (similar to what this plan has done to identify conservation areas) and plan for these areas in conjunction with planning for conservation areas (see recommendation for build out/GEIS in Chapter 5).

A Guide to Gardiner's Conservation Network

Landscape Conservation “Hubs”

Large, unfragmented areas of exceptional diversity and productivity for wildlife and humans (farmlands and important biodiversity areas)

- Shawangunk Ridge
- Shawangunk Kill South
- Shawangunk Kill/Wall Kill Confluence
- Galeville Grasslands
- Wallkill North
- Rt. 208 North Farmlands
- Plattekill Gorge
- Rt. 208 South Farmlands



A snapshot from the Shawangunk Kill South hub.

Corridors

Connections between conservation hubs



The Wallkill River corridor.

- River to Ridge Corridor
- Palmaghatt Kill Corridor
- Mara Kill Corridor
- Wallkill River Corridor
- Shawangunk Kill Corridor
- Route 208 Wetland Corridor

Living Landscapes

Developed and undeveloped lands that serve as supportive connective tissue of the conservation network

- Located throughout town



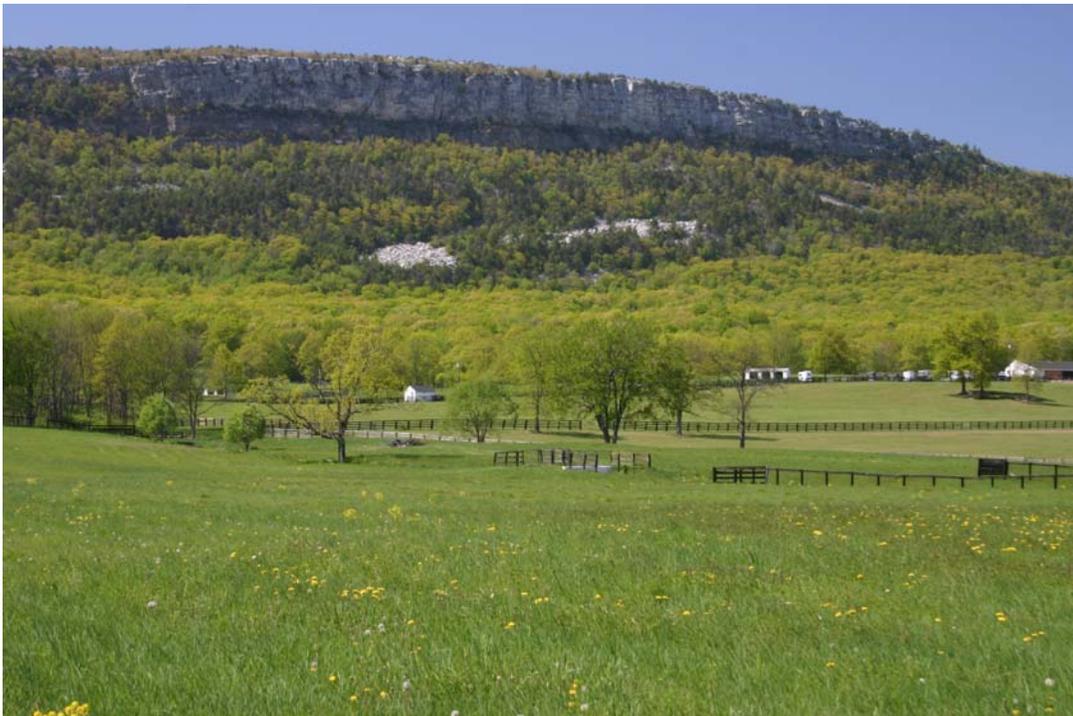
A rural roadside home.

Conservation Hubs

This section provides a short description of each of the eight landscape conservation hubs illustrated on the Conservation Network Map on the following page (they are numbered to correspond to the map). The resources associated with each of these hubs are discussed in more detail in Chapter 3 of this plan. Together, these conservation hubs total approximately 13,000 acres (or 45% of Gardiner’s land area). Approximately 4,800 (or 37%) of those 13,000 acres are currently permanently protected.

I. Shawangunk Ridge

The Shawangunk Ridge hub is the town and region’s largest landscape hub. In Gardiner, this hub includes approximately 7,600 acres of ridge land west of the “break in slope.” Approximately 60% of this conservation hub (or 4,500 acres) is already protected as the Minnewaska State Park, the Awosting Reserve and the Mohonk Preserve. The major gap in conservation of the ridge is between the Mohonk Preserve and Minnewaska State Park, and mostly includes long parcels that begin at or near the break-in-slope and continue up to the ridge top.



The Shawangunk Ridge hub includes not only the ridge itself, but the edges of the ridge which provide help to buffer the important natural communities of the ridge.

The Shawangunk Ridge hub also includes a long band of unprotected cliff and talus habitat, which is important for protection of rare species and several endangered plants,

as well as its role in aquifer recharge. A recent publication of the Green Assets Program of the Shawangunk Ridge Biodiversity Partnership notes that 66% of the cliff and talus community of the Shawangunk Ridge occurs in the Town of Gardiner.

Conservation of this large hub of unfragmented forest is critical to maintaining the ecological health of the ridge, as well as the scenic and recreational assets that are so highly-valued by the community.

2. Shawangunk Kill South

The Shawangunk Kill South hub is the second-largest conservation hub in Gardiner, and includes approximately 2,300 acres of land adjacent to the scenic, ecologically-important southern stretch of the Shawangunk Kill. This area received the highest score in the priority rating system because of its important natural, agricultural, cultural and historical benefits. Significant agricultural resources in the Shawangunk Kill South hub include Watchtower Farm,



The southern stretch of the Shawangunk Kill is an ecologically-significant area that provides excellent habitat diversity.



The area where the Shawangunk Kill and Walkill River meet contains significant habitat and is also an important area of cultural significance.

Brykill Farm, Whitecliff Vineyard, and Majestic View Farm. It includes the scenic Route 7/Brunswyck Road and its viewshed of Shawangunks. It also includes cultural resources such as the wine trail, historic buildings and landscapes listed by the State Historic Preservation Office, and a stretch of the Shawangunk Kill that is classified by the State DEC as a Recreational River. This area is ecologically significant and includes important natural communities such as the confined river and floodplain forest, as well as an endangered plant and excellent habitat diversity along the Shawangunk Kill and

adjacent grasslands. This conservation hub is discussed in more detail at the end of this chapter.

3. Shawangunk Kill/Wall Kill Confluence

The meeting of the Shawangunk Kill and Wallkill waters has historically been an important location for settlement, as evidenced by the Tuthilltown and Gardiner hamlets. The confluence of these two rivers also offers ecological benefits, including a portion of the Shawangunk Kill confined river natural community, as well as a major floodplain and aquifer recharge area. This 500-acre hub also offers the opportunity for community benefits by connecting the town's existing population centers and Majestic Park to future open space lands.

4. Galeville Grasslands

The 600-acre Galeville Grasslands hub includes a few large patches of unfragmented grasslands along the southern border of Gardiner with the Town of Shawangunk. This area could become part of the larger Shawangunk Grasslands National Wildlife Reserve hub to the south. The grasslands are important habitat for a diversity of bird species, including several which are threatened or endangered. In fact, the National Wildlife Refuge has been designated as an Important Bird Area for its significance. This area also overlaps with the historically-significant working farmlands of Brykill Farm, which is also located in the Shawangunk Kill South Hub.



Connecting these grasslands along to the Shawangunk Grasslands National Wildlife Refuge would help to expand habitat for a diversity of bird species, many of which are threatened or endangered.

5. Walkkill North

This northern hub of approximately 400 acres on the Wallkill provides important floodplain and aquifer recharge benefits, and includes several larger areas of unfragmented forest immediately adjacent to the river. This area also provides an opportunity to link together existing open space land and town-owned land to form a greenway along the Wallkill, and in close proximity to the town's major settlement area.

6. 208 North

Phillies Bridge Farm is already permanently protected through a conservation easement held by the Wallkill Valley Land Trust. In addition to its community agricultural ties, this scenic working farm also offers substantial wildlife benefits, including wet meadow habitat which is important for the state-endangered and federally threatened Bog Turtle.

This area is surrounded by orchards and working farmlands of Dressel Farm, which is one of the town's largest working farms. The rail-trail traverses this conservation hub, and offers opportunities for community connections within the landscape. This 975-acre hub offers substantial conservation benefits to balance the rapidly growing Route 208 corridor.



Orchards in blossom at Dressel Farm are set against the background of the Shawangunk Ridge.

7. Plattekill Gorge

The Plattekill Gorge is a cool ravine habitat with steep slopes surrounded by hemlock forest. This is a unique habitat in Gardiner which may potentially house rare plant species (further study of this area is desired). The Plattekill Gorge extends beyond Gardiner into the adjacent Town of New Paltz. In addition to the unique habitat of the gorge, the 300-acre Plattekill Gorge conservation hub also includes several historic buildings (LeFevre House, Kettleboro School, Jenkins-DuBois Farm, and Locust Lawn Estate), the hamlet of Jenkinstown, and adjacent conserved lands owned by the Huguenot Historical Society.

8. 208 South Farmland

The 600-acre 208 South Farmland conservation hub includes a large unfragmented core of working landscapes including Tantillo, Wright and Four Winds Farms. This area also houses a large and fairly well-connected expanse of upland meadow, which is important bird habitat. Wet and calcareous wet meadows, which are of conservation importance because they support rare species, are also dispersed throughout this conservation hub.

Conservation Corridors

1. River to Ridge Corridor

This short (less than 1-mile) corridor provides a wildlife connection between the Shawangunk Ridge and the Shawangunk Kill along an unfragmented forest area. This area includes Majestic View Farm and several minor tributaries.

2. Palmaghatt Kill/Klyne Kill Corridor

This important stream corridor connects the forested lands of the Shawangunk Ridge near Awosting Reserve to the Shawangunk Kill South conservation hub, along the Palmaghatt Kill and Kleine Kill Corridors. This 3-mile corridor also connects to Tillson Lake and the hamlet of Rutsonville. A buffer width of 330 feet or more is recommended to protect the natural function of this corridor.

3. Mara Kill Corridor

This 4-mile wildlife corridor connects the Shawangunk Kill to the Ridge via the Mara Kill and Trapps Pass area. It includes Heddons Lake and Just Resting Farm, as well as several large and significant wetland complexes and steep topography along the base of the ridge. A buffer width of 330 feet or more is recommended to protect the natural function of this corridor.

4. Wallkill River Corridor

The Wallkill River corridor is one of the region's primary wildlife connections, providing habitat connectivity through much of the valley. In many areas of the region, the valley has already been extensively fragmented, and this river corridor serves as the only safe passage for wildlife. In Gardiner, this corridor extends for approximately 7 linear miles. A conservation buffer width of 535 feet or more is recommended to provide for wildlife protection and maintain water quality.

5. Shawangunk Kill Corridor

The 5-mile Shawangunk Kill corridor is one of the town's most important wildlife resources, as it provides habitat for a diversity of wildlife, including rare and endangered species. This corridor is surrounded by a "core" of important farms and farmlands, which give way to scenic views of the Shawangunk Ridge. The Shawangunk Kill is also designated by the State DEC as a Recreational River. Similar to the Wallkill River, a conservation buffer of 535 feet or more is recommended to protect the river's water quality as well as its integrity as a wildlife corridor. For more information on the many resources associated with the Shawangunk Kill, see the detailed discussion of the Shawangunk Kill South conservation hub at the end of this chapter.

6. Route 208 Wetland Corridor

The 5-mile Route 208 Wetland Corridor is a series of important wetlands and water features that extend along the Route 208 corridor from the town's north to south border. This corridor includes at least two known kettle shrub pools, as well as several other important wetland communities. These wetland areas should be buffered (including adjacent upland habitat) and connected together to form a connective corridor of wetland habitat. Minimum recommended buffer distances for wetlands range from 300 to 500 feet, depending upon wetland type and overall wildlife conservation goals.

What Do Biodiversity Conservation Opportunities Look Like?

A Checklist of Biodiversity Opportunities to Look For:

- Does the land include ecologically important communities (is it mapped as a conservation target)?
- Does the land contribute to a large unfragmented block of forest? (Is it contiguous with already protected land)?
- Does the land contribute to a “stepping stone forest” or corridor? (Is it part of a medium-sized, unfragmented patch?)
- Is the land a smaller but ecologically important patch?
- Does the land provide a buffer to a sensitive resource?

Source: *Green Assets: Planning for People and Nature Along the Shawangunk Mountains*, A Project of the Shawangunk Ridge Biodiversity Partnership

Priority Conservation Hub: Shawangunk Kill South

The Shawangunk Kill South conservation hub received the highest score of all of the town's landscapes, based on the rating criteria established for the open space plan. The reasons for this score are evident if you have ever visited this landscape. Not only is it one of the town's most significant biodiversity "hot spots," but it is also home to a critical mass of farmlands which bolster the local and regional economy. Scenic views of the ridge, important historic resources, and an agritourism corridor also help to establish this hub as a top priority for the town's open space conservation program. Below are some of the potential benefits of conserving this priority hub.

The Economic Benefits of Conservation:

- **Farmland production:** this area includes the town's largest "core" of working farmlands in the agricultural district (Brykill, Watchtower, Whitecliff, Majestic View Farm)
- **Agritourism:** the wine trail is an existing regional agritourism resource; there are opportunities for future expansion of agritourism (e.g. the organic beef belt)
- **Recreation:** this area could become a future "gateway" to the Awosting Reserve, drawing recreational tourism from the region and beyond to explore the town's hamlets and commercial areas as part of the "Gunks" experience
- **Scenic Resources:** protection of the scenic quality of this area is critical to the town's economic base in tourism and residential homes



The Shawangunk Kill South hub contains a diversity of open space resources, including this horse farm which helps to keep land open and contributes to the scenic quality of the area.

Community Benefits of Conservation:

- **Scenic Resources:** protection of views from the scenic roadway (Rt. 7/Brunswick Road) and scenic viewshed of ridge
- **Historic Resources:** conservation of the town's rural heritage (Brykill and Van Vleck House)
- **Opportunities for public access** (a fishing area or a nature pathway is a desirable asset for the community to experience the natural environment)

- Water quantity/quality (protection of floodplain and aquifer recharge areas helps to maintain water quality and reduces flooding)
- Recreation: the Awoosting Reserve offers future recreational opportunities to connect with this area; the Shawangunk Kill has been designated as a Recreational River under the New York State Wild, Scenic, and Recreational Rivers Act of 1982, and offers opportunities for passive recreational activities

Ecological Benefits of Conservation

- Endangered species: protection of endangered plant species habitat along the river corridor
- Natural community: conservation of several large patches of floodplain forest natural community (important wildlife corridor and also helps to reduce flooding and downstream sedimentation)
- Habitat diversity: protection of habitat diversity along Shawangunk Kill (high fish and mollusk diversity)
- Major regional wildlife corridors: Shawangunk Kill and Klyne Kill provide wildlife connectivity throughout the region
- Grassland habitat and wildlife corridor: important wildlife habitat (diversity of bird species); Important Bird Area (IBA) and connection to Shawangunk Grasslands NWR



This stretch of the Shawangunk Kill contains some of the highest fish and mollusk diversity in the region.

Conservation Goals

There are approximately 13,000 acres of lands within the priority conservation network, of which approximately 4,500 acres are currently protected. Almost all of this acreage is along the Shawangunk Ridge. The plan proposes a five year-goal to conserve approximately 1,500 acres (or 300 acres/year). At least one-half of this 1,500 acres should be within the valley (non-ridge). Land in the foothills and valley should be prioritized because they are under more development pressure, provide water resource protection, and contain most of the town's agricultural lands.

Initially, the land conservation program will be financed through the town's open space bond. A Purchase of Development Rights (PDR) program will be developed and conservation projects will be conducted in partnership with willing landowners, land trusts and other conservation organizations. Funding is expected to be leveraged by assistance from land trusts, state and federal grants, and landowner donations or bargain sales. As the land conservation program evolves, additional tools and financing mechanisms may be developed to diversify options for landowners and broaden the financing spectrum.

The table on the following page provides a summary of the major resource values and five-year conservation acreage goals for each conservation hub discussed in this chapter.

Table 4: A Summary of Gardiner’s Conservation Hubs

Conservation Hub	Major Conservation Value	Major Resource(s) for Conservation/ Opportunities	Total Land (acres)	Existing Protected Land (acres)	5-Year Conservation Milestone (acres)
Shawangunk Ridge	Wildlife corridor, biodiversity, scenic views, water resources	Unfragmented forest land (especially adjacent to existing protected lands), cliff and talus slopes	7,500	4,500	500
Shawangunk Kill South	Agricultural productivity, wildlife corridor, water resources, scenic views	Shawangunk Kill ecosystem; floodplain forest and confined river natural communities; active farmlands	2,300	---	400
Shawangunk Kill/Walkkill Confluence	Wildlife habitat and corridor, water resources, community centers	Confined river natural community, Gardiner and Tuthilltown hamlets, trail and recreational connections	520	---	100
Galeville Grasslands	Wildlife habitat and corridor, scenic views	Unfragmented grassland habitat and connections to the Shawangunk Grasslands NWR	600	---	50
Walkkill North	Aquifer recharge, wildlife corridor, recreation	Walkkill River corridor, unfragmented forest, trail connections	400	23	50
208 North	Agricultural productivity; water resource protection, wildlife habitat, scenic resources	Active farmlands and open lands; wet meadow and other important habitats	960	65	200
Plattekill Gorge	Wildlife habitat and historic resources	Cool ravine, hemlock forest, historic buildings associated with Locust Lawn and the Hamlet of Jenkinstown	330	---	50
208 South Farmland	Agricultural productivity, water resources, wildlife habitat, scenic resources	Scenic viewsheds, scenic roads, historic hamlets, historic buildings, homes, and landscapes	620	--	150
Total			13,230	4,588	1,500

Conclusion

This chapter has provided the framework for a conservation network in Gardiner which is based on community values as well as sound natural resource goals. Conservation of significant acreage within this 13,000-acre open space network would go along way towards meeting the community's desired goals of protecting Gardiner's open space resources. Conservation will most likely be achieved through a combination of tools. Recommendations for achieving this network in a spirit of partnership with landowners are provided in Chapter 5.