



Open Space

Broome County's natural beauty and abundant natural resources are consistently identified as among the area's biggest strengths. This point is continually highlighted in community planning initiatives from municipal comprehensive plans to regional waterfront and economic development planning. Public outreach during this planning process reinforced this idea with 84% of survey respondents identifying "protecting open space" as a major or minor opportunity and 88% of respondents identifying our "rivers and riverfronts" as a major or minor opportunity. In addition, this sentiment was reiterated consistently throughout the stakeholder meeting process.

Open Space is defined as:

Land that is not intensively developed for residential, commercial, industrial or institutional use, characterized by natural scenic beauty of whose natural condition or present state of use, if retained, would enhance the present or potential value of surrounding development or would maintain or enhance the conservation of natural or scenic resources.



Open spaces range from natural spaces such as forests, lakes and wetlands, to designed spaces such as parks, to working landscapes such as farms. These areas contribute not only environmental benefits such as water quality protection and wildlife habitat, they also contribute social and economic benefits, helping support the economy and making the County an attractive and healthy place to live.

Despite these values, decision makers are often forced to balance the abstract value of open space resources with more immediate pressures of tax revenues, development costs, and infrastructure spending. However, open space areas and working landscapes typically create less of a demand on community services, making them overall revenue contributors, and in the long term, can be an investment and an engine for economic development and growth. Identifying significant open spaces allows municipal agencies and others interested in open space preservation to inform planning efforts and direct development appropriately.



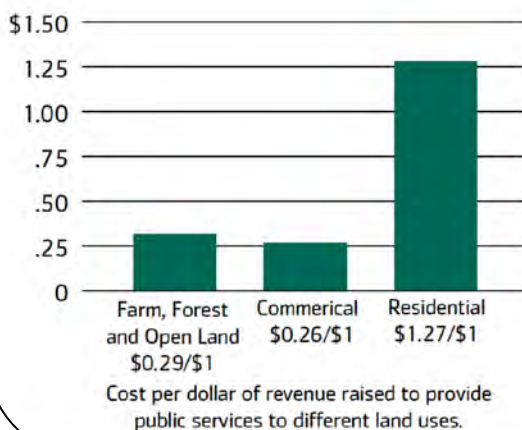
Due to an overall trend of population decline in the region, associated with limited growth, it might appear that there is no need for open space preservation and protection. However, as is discussed in the land use section, outmigration from the urban core to the more suburban and rural areas could place development pressure on these resources. Also, despite the appearance of lush rolling hills which suggest plentiful resources, the community is faced with several issues that may suggest that they aren't being managed to achieve their full benefits, including flooding, water quality issues, stressed public infrastructure and blight.

Benefits of Open Space:

- **Attract Investment** - A high quality of life attracts tax-paying businesses and residents.
- **Revitalize Urban Areas and Villages** - Stimulate growth and promote revitalization.
- **Promote public health** – Make recreational opportunities accessible to all demographics.
- **Tourism** – Supporting outdoor recreation and attracting tourists.
- **Prevent Flood Damage** – Natural resource protection offers a cost-effective alternative to expensive flood-control measures.
- **Protect the Rural Economy** - Safeguard the future of farming and rural communities.
- **Promote Sustainable Development** - Helps prevent costs of unplanned development and provides transportation alternatives.
- **Safeguard the Environment** – Protect drinking water, clean the air, and achieve other environmental goals.

New York State Cost of Community Services

From the American Farmland Trust, 2011



Furthermore, connectivity and linkages between open space areas or between open space and major activity centers, such as schools, community centers, and business districts, are essential to maximize their benefits. These connections include linear greenbelts, trails, wildlife corridors, waterway systems, and urban/rural boundary separators.

While many of the land use decisions that impact open space are made at the municipal level, there are several reasons why open space planning at the county level is important. Broome County owns and operates parks and other lands that constitute open space. The County can

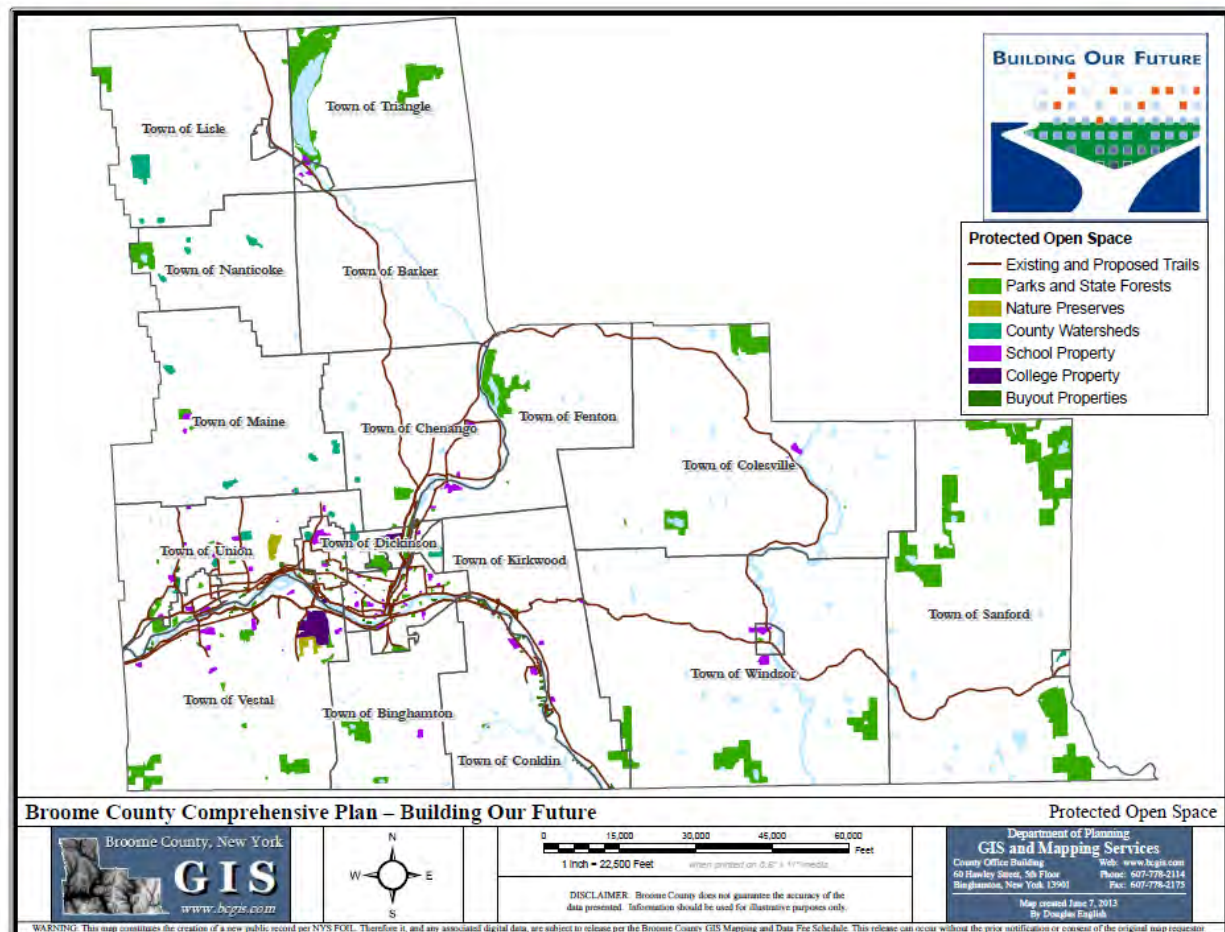


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strategically plan for new recreational facilities or enhancements to existing facilities with the goal of preserving their natural resource value. In addition, County projects, programs and policies can integrate the goals established for open space preservation.

Just as we plan for our grey infrastructure including roads, sewers, utilities and others, so should we plan for our “green infrastructure” in recognition of the community services they provide, including flood mitigation, alternative transportation corridors, and recreational amenities. Green Infrastructure planning at the County level allows for development of a system that considers these regional implications. This requires a strategic landscape approach to open space conservation, whereby local communities, landowners and organizations work together to identify, design and conserve their local land network, to maintain their healthy ecological functioning.

Furthermore, we can look at “green infrastructure” at the site specific scale which incorporates natural features, such as green roofs, bioretention areas, rain gardens, stormwater planters, and a host of other features. These serve to manage stormwater flow, and have secondary benefits associated with aesthetics, temperature regulation, community





gathering spaces, and wildlife habitats. While this section focuses mostly on green infrastructure as defined at a larger countywide scale, these features can be an integral part of reducing the impervious areas within urban and village centers, more cohesively integrating them into the open space network.

Protected Open Space

In order to plan for open spaces, it is essential to identify what resources are already protected, providing a base for expansion of the system. Protected open space is defined as property where development is limited or prohibited by some legal mechanism due to recreational, educational, historical, or ecological significance. These include public parks, conservation areas, flood management areas, and recreation areas owned by a public agency such as a local, county or state government, including athletic fields and playgrounds owned by public schools.

Private open space may be protected if owned by a conservation group such as a non-profit land trust, or other similar entity. Conservation easements on private property, as well as subdivision laws requiring open space also afford some level of protection. Broome County contains some of these pocket size areas, but they are not well documented and therefore are not listed in this document.

Private recreational facilities, such as golf courses, campgrounds or hunting clubs can be considered open space, but are not limited from future development. Similarly, lands associated with public facilities, such as airports or municipal buildings, may be open space for now but are not protected. Documenting these temporarily protected open spaces can help to identify them as a priority for permanent protection in the future if there is an identified resource value.

Conservation laws at the state and federal level also provide specific protection for

Federal Lands	Municipality	Acreage
Parks		
Whitney Point MUA	Whitney Point/ Triangle	2833
State Lands		
Parks		
Chenango Valley	Fenton	1028
Oquaga Creek	Sanford	1148
TOTAL		2176
Forests		
Beaver Dam	Lisle	239
Beaver Flow	Colesville	726
Beaver Pond	Sanford	785
Cascade Valley	Windsor	534
Cat Hollow State	Sanford	761
Hawkins Pond	Windsor	536
Marsh Pond	Sanford	896
Melody Hill	Sanford	1395
Nanticoke Lake	Lisle	331
Skyline Drive	Kirkwood	531
Tracy Creek	Vestal	432
Triangle	Triangle	654
Whittaker Swamp	Sanford	805
TOTAL		8625



types of land that may be privately or publicly owned. This includes wetlands, river banks and wildlife management areas for example. These lands that offer some level of protection are addressed under other parts of this chapter or the Water Resources chapter.

The categories of protected open space are outlined further below. When living and traveling throughout the county, it is easy to make note of the vast wealth of natural resources that exists here. However, despite the recognition of their importance, only about 4.5% of County land resources are protected from development. Therefore, there is no guarantee that these highly valued resources, and the connections between them, will be maintained into the future without the appropriate planning.

Whitney Point Multiple Use Area

The largest contiguous protected open space area in Broome County is the Whitney Point Multiple Use Area. This area has been recognized as important by Federal, State and County governments, all of which have a stake in some portion of the property. The area extends north into Cortland County and is a total of 4645 acres, 2833 acres of which are in Broome.

This area contains the only federally owned open space in the County, the Whitney Point Reservoir, which is a US Army Corps of Engineers (ACE) flood control structure. Located on the Otselic River, it provides flood damage reduction for the valley along the Tioughnioga, Chenango, and Susquehanna Rivers. The reservoir and the associated open space areas are operated and managed by New York State. However, the County Parks Department runs the recreational facilities located at Dorchester Park, on the east side of the lake.

While the area is primarily operated for flood control, is also used for upland wildlife management activities such as timber harvest and the construction and maintenance of small marshes and nesting structures. In addition the land provides opportunities for hunting, fishing and boating.

State Land

The table on the previous page lists the state owned protected areas within Broome County. These include State Parks and State Forests. State Parks serve to provide regional open space and recreational value. They generally serve a large population and provide recreational opportunities that may not be

County Lands	Municipality	Acreage
Parks		
Aqua Terra	Binghamton	459.27
BAGSAI	Dickinson	31.93
Dorchester Park	Triangle	70.43
Finch Hollow	Maine	19.59
Greenwood	Nanticoke	447.38
Grippen	Endicott	18.71
Hawkins Pond	Windsor	325.66
Nathaniel Cole	Colesville	367.47
Otsiningo Park	Dickinson	149.66
Round Top	Endicott	30.04
TOTAL		1920.14



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County Lands	Municipality	Acreage
Watersheds		
NYS Route 26	Nanticoke	53.4
Mount Hunger Rd	Nanticoke	10.67
Roat Drive	Nanticoke	19.58
Howland Hill Rd	Nanticoke	22.76
Tiona Road	Maine	2.45
Caldwell Hill Road	Lisle	24.07
Caldwell Hill Road	Lisle	10.17
Laurelton Road	Union	11.91
Glenwood Road	Binghamton (City)	4.32
Second Street	Deposit	0.38
Wittman Road	Dickinson	84.04
Oakdale Road Rear	Johnson City	37.36
Pine Street	Deposit	17.47
East Maine Road	Union	18.44
Utica Street	Union	30.46
Bailey Hollow Road	Maine	46.75
Upper Stella Ireland	Maine	57.58
Airport Road	Maine	30.86
Oakdale Road Row	Maine	18.44
Avery Road	Maine	49.76
Dimmock Hill Road	Chenango	15.37
Airport Road	Dickinson	76.61
Struble Road	Union	64.54
TOTAL		707.39

accommodated in smaller local parks such as camping or cross-country skiing. New York State owns and operates two State Parks in Broome County totaling 2176 acres, Chenango Valley State Park in the Town of Fenton and Oquaga Creek State Park in the Town of Sanford.

The County contains 8630 acres of State Forest lands that typically include Reforestation Areas, Multiple-Use Areas, Unique Areas and State Nature and Historic Preserves. These lands are protected primarily for their natural resource value but are open to the public to provide passive recreation opportunities such as recreational trails, camping, and hunting. Management is guided by DEC's Strategic Plan for State Forest Management and by individual unit management plans.

County Land

Broome County has 1920 acres of park lands with the primary goal of providing high quality facilities with a wide range of activities, including swimming, camping and trail activities. Most of the parks are maintained for active

recreation purposes, but there are two parks, Aqua Terra and Hawkins Pond that are considered as natural areas for passive recreation such as hiking. Broome Community College, which is County owned also has associated open space areas and athletic fields.

In addition, Broome County operates and maintains 24 Watersheds constructed for flood control, totaling 707 acres. These are listed above. The County Watersheds are also used for recreation by the general public for hiking, sporting events and other activities. Their use for flood control is discussed in further detail in the Water Resources Chapter.

Municipal Lands



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The majority of municipally owned open spaces consist of municipal parks that range from large parks with athletic fields, playgrounds and trails to small parks or courtyards with a few trees and benches. These parks enhance neighborhoods, provide aesthetic benefits and ensure access to outdoor recreational opportunities. They are especially important in urban areas with high density residential development that affords little greenspace on individual lots. In Broome County these parks total 1794 acres. Other types of protected open space under municipal ownership include community gardens that provide the opportunities for urban gardening, and recreational areas associated with schools.

Some local municipalities also have acquired open space through the flood buy-out process. These are lands that were substantially damaged due to flooding and transferred to public ownership for the purpose of flood mitigation under the Federal Emergency Management Agency process and are restricted for any future development. These lands total 111 acres county-wide. The flood buyout process presents an opportunity for expanding upon the open space network, while contributing to local flood mitigation efforts. Goals for improving the flood mitigation potential of these lands should be a prime consideration for the open space network.

Private Conservation Lands

Broome County is also home to a couple of significant properties that have been purchased by conservation groups for their preservation. The Binghamton University Nature Preserve is a significant natural area. The University owns and manages the 182 acre preserve on the University grounds. However, the Binghamton University Foundation has also acquired additional acreage adjacent to the University property for a total of 443 acres. The property consists of a beaver pond, state and federal wetlands, nature trails and various types of wildlife habitat. The preserve is used for education, research, recreation and aesthetic purposes.

The IBM Glen is a 205 acre property in the Town of Union. The property was once owned by IBM as a recreational amenity for its employees at the IBM Country Club. Upon its closing, local conservation groups worked with the company who donated the property for



**Binghamton University Nature Preserve and
Foundation Lands – 443 acres**

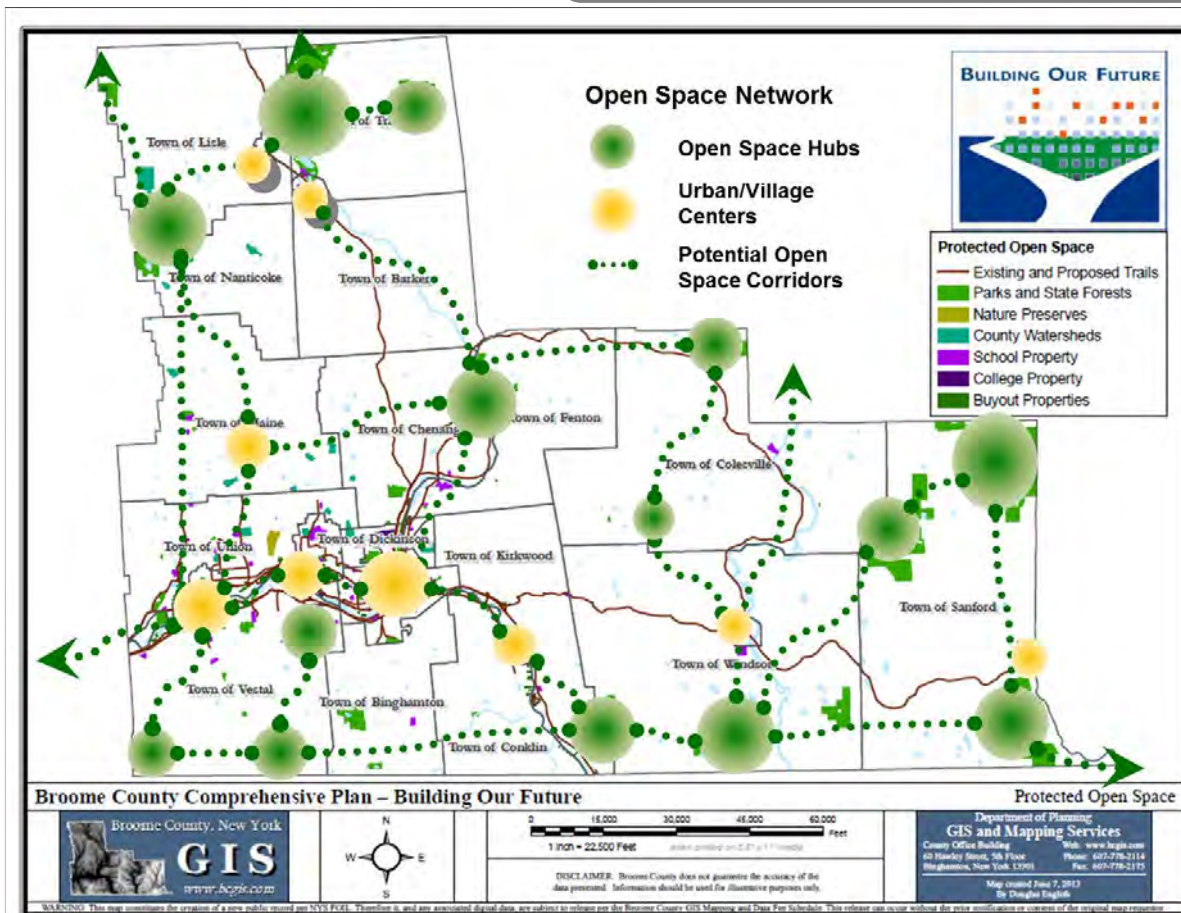
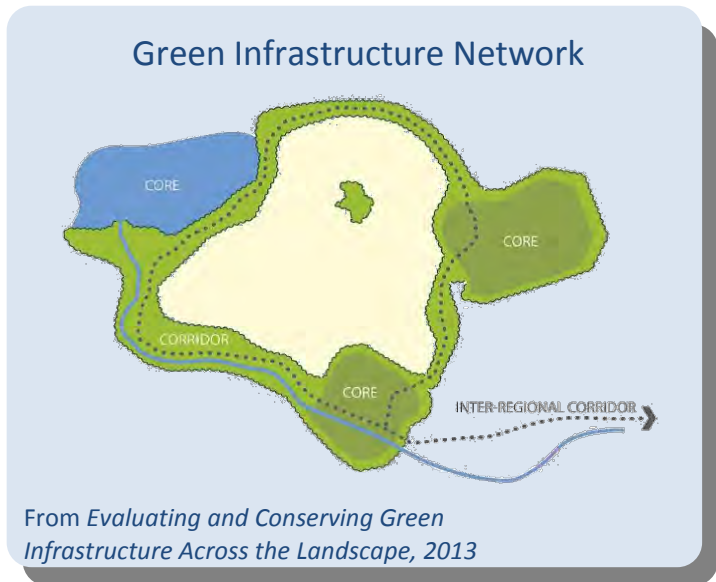


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preservation. Now it is under the ownership of the Chenango Land Trust and managed by the Waterman Conservation Center, two local nonprofits with properties throughout the Southern Tier region. In addition to its historic value, it is a locally unique natural area with significant mature tree communities and a cascading gorge.

Green Corridors

As mentioned previously, connections and linkages between open space areas or between open space and major activity centers are an integral part of the open space network. These connections, or corridors, include linear greenways, trails, wildlife corridors, waterway systems, and urban/rural boundary separators.





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This idea has been formalized in several areas through the “emerald necklace” concept by which core open space “gems” are connected to each other and prime activity areas by green corridors. One community nearby that has employed this concept into their open space planning is Tompkins County. There, the Emerald Necklace consists of a network of open spaces that is composed of protected lands within State Forests and Parks, a Wildlife Management Area, a National Forest, land trust nature preserves, and local university properties, totaling more than 50,000 acres. This system is notable due to the fact that it doesn’t solely rely on acquisition for its expansion. It has been enhanced by partnerships and agreements with private landowners.

In Broome County, as listed in the protected open space section, we have a significant number of core open space areas. Under existing initiatives, the river systems and their tributaries serve as a natural foundation as open space corridors. They are defining features throughout the County and open space preservation associated with these features plays a prominent role in the maintenance of community health, public safety and quality of life. Therefore, several planning efforts center around the extensive water systems with the goal of planning for revitalization of riverfront areas in a manner that maintains aesthetics and water quality for the economic and quality of life benefits to the local communities.

A major initiative is the Two Rivers Greenway. In 1999 the Binghamton Metropolitan Transportation Study (BMTS) proposed a contiguous regional multi-use trail system extending from the Greater Binghamton Urban Area to the Village of Owego in Tioga County. Since then BMTS and NYSDOT have been working with local municipalities to develop trail segments with the goal of eventually creating a contiguous system. While the goal of the Two Rivers Greenway is primarily transportation oriented, it provides secondary services such as recreation, wetland protection and flood mitigation. Recently BMTS developed Signage Plan and Design Guide with the goals of increase usage of the trail system, establishing a cultural and historical identity and marketing trail adjacent tourism resources.

In addition, the Broome County Intermunicipal Waterfront Public Access Plan was recently developed. It outlines future development along Broome County riverfronts including an inventory of waterfront resources and amenities, and identifies projects for encouraging the revitalization of the riverfronts. This includes trail expansion projects, installation of boat launches, historic preservation projects and others. Municipalities have begun implementing these projects such as extension of the Chugnut trail in Endicott and the installation of a boat launch in the Town of Chenango.

The State, County and local municipalities continue to implement projects under these plans as funds are available. As the initiatives move forward they provide additional opportunities



for increasing connectivity in the open space network. However, the County does have parks and other facilities located outside the boundaries established by existing plans. Therefore, identification of additional lands and their value as open space hubs and linkages will contribute to a more complete and contiguous system, as well as establish regional connections with neighboring counties.

Open Space Resources

Having documented our protected open space, we are able to assess our needs as they relate to preserving unprotected resources or creating connectivity to maximize the benefits of open space infrastructure. Through documentation of these areas, we can make development decisions that preserve their natural, social or economic value.

Goals as they relate to open space planning include preservation of valuable lands, enhancing and developing recreational opportunities, conserving habitats, increasing access to natural resource lands and water, protecting air and water quality, maintaining and enhancing natural resource-based industries, including forestry and agriculture, discouraging

Open Space Resource Categories Defined

Recreational resources – Lands where the primary function is active or passive recreational opportunities. *Examples: Parks, boat launches, fishing areas, trails, private recreation lands (golfing, hunting, camping)*

Water resources – Lands where the primary function is the preservation of water quality. *Floodplains, flood mitigation areas, wetlands, stream buffers and lakefronts*

Ecological Communities – Lands that support native species and ecosystems to maintain local biological diversity. *State Natural Heritage areas, critical environmental areas, properties listed as Unique Natural Areas*

Geologically significant areas – Features that define the landscape's character. *Notable summits, steep slopes, glens, waterfalls or other unique water features, scenic vistas, landscapes and byways*

Historic and Cultural Resources - Historic and cultural assets supported by natural features that enhance their value and establish context in the landscape of the community. *National Register properties, community gathering spaces, archeologically significant areas.*

Working landscapes – Lands where the primary function is economic support for the landowner through natural resource-based commodities that provide secondary natural resource values. *Ag districts, prime soils, forest management areas, 480a tax exempt lands, urban gardens/trees*

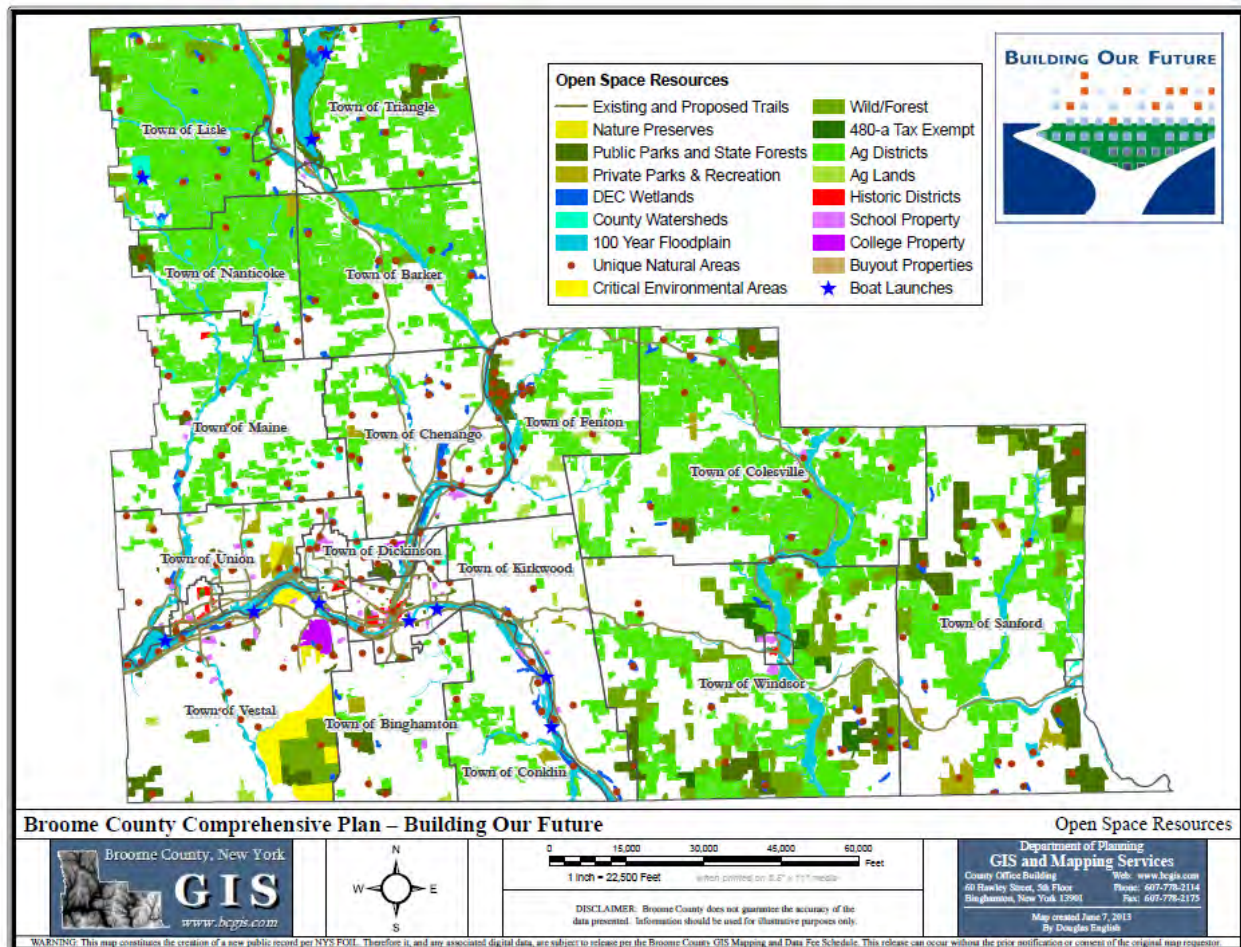


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incompatible uses, and reducing inappropriate conversion of undeveloped land.

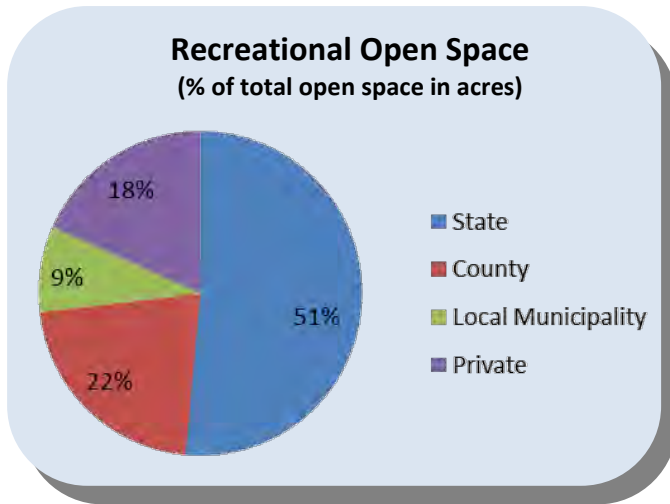
The open space categories essential to achieving these goals are defined on the previous page. By documenting areas that have value in these key categories, we are able to identify lands best suited for protection under open space initiatives, fill gaps that have been identified in the open space network, and identify opportunities for protection as resources are available. While these categories have been defined based on the resources' primary functions, it is important to remember that they may have value across several categories. Through a multi-objective planning approach that recognizes value under multiple natural resource categories, as well as economic and social values, we can maximize resources and coordinate efforts, thus gaining longer-lasting, broader support for common objectives.

The rest of this chapter will review each of these key categories and the open space management issues associated with them. When these categories are defined and illustrated through mapping, it is clear that there are significant opportunities for further establishing an open space network that meets the varied goals of the community.





Recreation

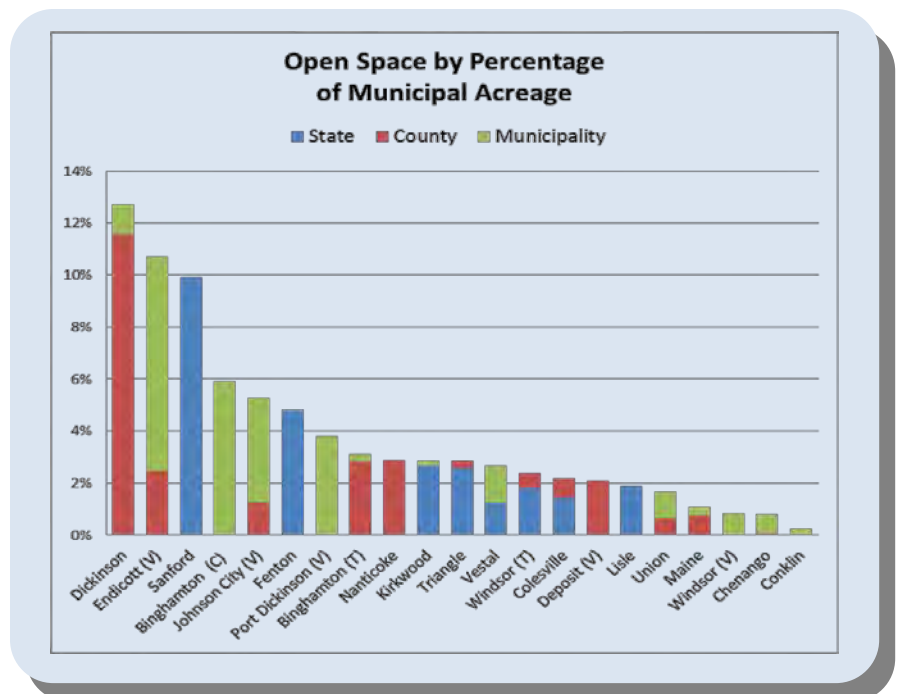


Recreational open space is a significant portion of protected open space lands due to its high value in the community for quality of life. When considering recreational open space lands in Broome County it is clear that all levels of government have played an important role with different goals for servicing the community.

Considering that almost 75% of the lands are either State or County owned, it is clear that these entities have played a major role in open space preservation throughout the county.

Due to the regional goals associated with State and County park systems, these lands tend to serve a larger population. They also may include passive recreation areas that have been acquired for natural resource management, but provide recreation as a secondary function, such as the State Forests and the Broome County Watersheds, mentioned earlier. Local municipalities tend to have a number of small park facilities for active recreation purposes. The trail systems constructed as segments of the Two Rivers Greenway are typically municipally owned and managed, unless located in an existing County park. However, these are not reflected in the data.

While it may appear that municipally owned open space doesn't make up a large portion of the recreational open space resources as a whole compared to the County and State resources, it is important to note that many of the municipal parks are located in urban areas that lack large tracts of contiguous open space, intended to serve a smaller service area. When evaluated based on a percentage of total municipal acreage, urbanized areas such





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as Endicott, Binghamton, Johnson City, Port Dickinson, and others are actually relatively significant.

It is also notable that 18% of the recreational open space lands are private properties including campgrounds, hunting clubs, golf courses and athletic centers. It is clear that these are a significant portion of open space resources. Communities should make efforts to support their role in the community and to integrate them into open space planning activities and initiatives when feasible.

New York State laws protecting against alienation of parkland, the taking or use of parkland for non-park purposes, helps to prevent the loss of existing parkland. Therefore, planning as it relates to recreational resources should focus on the expansion or improvement of existing facilities with the goal of incorporating objectives under other key categories, ensuring access to park services for all demographics, and expanding upon the variety of services offered to meet changing public needs, along with the maintenance of existing facilities so they can continue to be utilized. Having a plan in place establishing the present and future goals of the parks and recreation system can help to identify these opportunities and establish a framework for tracking progress toward these goals.

In addition to the parks and recreation lands listed above there are a variety of public owned fishing sites and boat launches that serve to provide recreational access to water resources. Each year DEC releases fish to public streams, rivers, lakes and ponds across the state to enhance recreational fishing and to restore native species. Thirteen of these sites are located in Broome. Public Fishing Rights (PFRs) are permanent easements along the stream or riverbank purchased by the NYSDEC from willing landowners giving anglers the right to fish and walk there. PFRs are permanent, applying to all future owners of the property, and are for fishing only, no other uses. There are two of these areas in Broome County, on Oquaga and Fly Creeks in Sanford and Deposit, and on Nanticoke Creek near the Town of Maine.

The NYS DEC and DOT along with waterfront municipalities, have worked to provide access sites to the rivers for boating and fishing purposes. Boat launches can be either hard surface ramps providing access via trailer or car top, or hand carry boat access. These can be found in the County-wide Local Waterfront Revitalization Plan which proposes the enhancement of some sites and augmentation with additional accesses. When integrated into open space planning, actions that expand upon these resources, or improve access should be taken into consideration.

Water Resources



This category is discussed in detail in the Water Resources chapter but an overview as they pertain to open space management is provided here. As discussed, flooding has historically been a significant threat to property in Broome County. In addition, stormwater management and water quality improvements are significant management goals. From an open space planning perspective, the management of open space to mitigate the impacts of flooding and maintain water quality is a high priority. These lands include floodplains, wetlands, stream buffers and lakefronts.

Floodplains and Flood Control Structures

One of the main tools to mitigate damage associated with flooding and protect water quality is the acquisition of greenspace. This not only directly removes residents and businesses from the path of flooding, but also increases storage capacity to help restore natural flow. The publicly owned flood control lands were discussed previously under the Protected Open Space section of this chapter and include the federally owned Whitney Point Dam and associated lands, the 19 flood control structures referred to as the County Watersheds, and flood-prone properties acquired through the FEMA buyout process. These are located throughout the County and provide significant storage during storm events, slowing the flow downstream. Open space planning should focus on the expansion, addition or improvement of these existing flood mitigation properties. The requirement that these properties remain “forever green” also provides opportunities for enhancing their use as recreational assets or biodiversity value.

Wetlands

Wetlands are a valuable resource for their role in trapping and slowly releasing water, providing flood control and natural filtration of pollutants. The US Army Corps of Engineers protects wetlands that are larger than 1 acre, about 13,600 acres on the National Wetlands Inventory in Broome, 9900 when not including the surface area of the rivers. New York State protects all wetlands at least 12.4 acres in size, a total of about 2,190 acres in Broome County. A permit must be obtained for any activity proposed in or adjacent to a state or federal wetland. This leaves smaller wetlands vulnerable that may have natural resource value. Land use decisions that direct development in a manner that preserves the integrity of wetlands and their buffers can be tools in integrating private properties into the open space network.

Stream Buffers and Lakefronts

Vegetated buffers along stream corridors and lakefronts help protect their ecological value and provide recreational opportunities. In addition, they reduce the volume and velocity of runoff and floodwater, and minimize adverse conditions during periods of low flow. In general, a minimum base width of at least 100 feet is recommended to provide adequate stream protection. In Broome, about 17 mi² are encompassed in the zone within 100 feet of



major streams. However, only about 18% of that is open space (excluding agriculture) according to the most recently available land cover data.

In addition to these water resource benefits, open spaces related to water resource protection provide unique wildlife habitats and scenic beauty, making them an asset to the community from a recreational and aesthetic standpoint. Therefore, efforts to improve the maintenance and restoration of stream buffers and wetland areas can be a large component at establishing connections in the open space system while at the same time enhancing the community's water resources.

Ecological Communities

Biodiversity, or biological diversity, is the existence of a wide range and variety of organisms in a specific landscape. Biodiversity is not only linked to the number of plant and animal species present at any given time, but it is also reliant on diversity in the ecosystems that provide habitats. Oftentimes, the impacts associated with a lack of biodiversity aren't obvious and therefore aren't a priority from a municipal perspective. However, biodiversity is extremely important when the goal is to develop diverse, resilient landscapes. Lands that are lacking in diverse ecological communities become vulnerable to disease, susceptible to invasive species and subject to overall decline.

When considered in the context of the costs associated with these factors, including damages to agricultural crops and woodlots, and the cost of mitigating disease and invasive species impacts in parks and other municipal infrastructure, it becomes clear that communities have a vested interest in maintaining their ecologically communities. This is not to mention services such as erosion prevention, aquifer protection and the formation of prime soil that are a bit more difficult to quantify. Development sited without consideration of the natural systems that provide ecological services may interfere with the continuation of these natural processes.

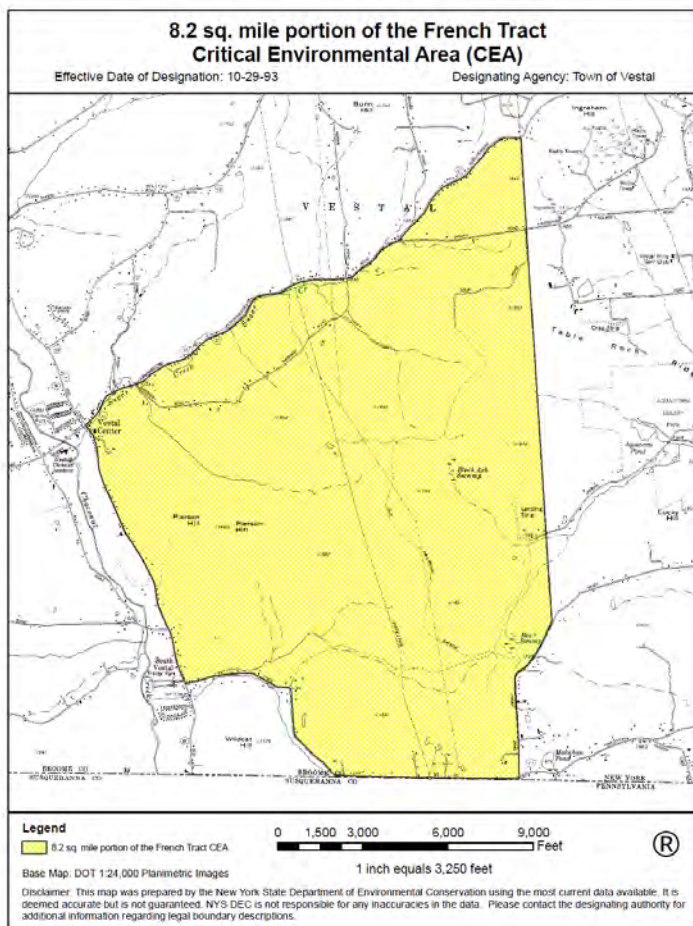
Key biodiversity areas encompass several of the other resources described in this chapter including water resources, farms and forests. The land needed for ecological communities to thrive, as well as intact, interconnected habitats are the primary means to ensure the continuation of critical ecological communities and to ensure that they can continue to provide services efficiently. This entails knowing where the key habitat is and what is needed to allow the habitat to persist, providing protection and corridors for ecological communities. There are a variety of resources at the local and state level that provide this information and can help local communities to plan for healthy ecological communities.

New York State's Natural Heritage Program facilitates conservation of rare animals, rare plants, and natural ecosystems, and supports the stewardship of rare plants, animals, and



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significant natural communities, as well as reducing the threat of invasive species. The program is housed within NYSDEC's Division of Fish, Wildlife, & Marine Resources and maintains New York's most comprehensive database on the status and location of rare species and natural communities. The information is used by public agencies, the environmental conservation community, developers, and others to aid in land-use decisions. Proposed development located within areas that have been identified under the Natural Heritage Program is required to mitigate any potential impacts through the State Environmental Quality Review (SEQR) process. Communities can incorporate this information into their open space planning, making it easier to determine potential impacts and reduce delays that may be associated with this process.



Another tool that local agencies can utilize is the designation of **Critical Environmental Areas (CEAs)**. To be designated as a CEA, an area must have an exceptional or unique character with respect to certain criteria, which include value as a natural setting or open space and inherent ecological, geological or hydrological sensitivity to change. Similar to the natural heritage areas, impacts to CEA lands are subject to mitigation through the SEQR process. There are two of these areas located in Broome, both in the Town of Vestal. One is designated as having value for well recharge, but the other which is known as the French Tract was designated in part due to its ecological significance. Designation of additional areas of significant natural resource value may be a way of affording them some level of protection as part of the open space network, without outright acquisition of the properties.

At a local level, through a partnership between faculty at Binghamton University and the Broome County Environmental Management Council, a **Unique Natural Areas Inventory** has been developed County-wide. While the State keeps track of rare and endangered species that are of interest to them on a state-wide level, there may be natural communities that are not of interest to them, but are rare or significant from a local perspective. This database



includes these significant natural communities that have been noted due to identification in the field or submission by local residents that have recognized their value. Currently this information is not publicly available, but it is housed in the County’s Planning Department for reference as needed.

Geologically Significant Areas

There are a variety of features throughout the County that make up the unique landscape that the community values and tells the story of the natural history that has shaped how it looks today. These distinctive features often may not be of significant value at the state or federal levels. Therefore, local level recognition and actions are essential to maintain their natural and cultural values to the community.

Steep Slopes and Ridgelines

The rolling hills of Broome County are a major component to the scenic landscape that is an asset to the community and significant summits are attractive destinations for hikers and other types of outdoor enthusiasts. These areas are typically not attractive for development due to the plentiful steep slopes. Disturbance of steep slopes for development can be costly including increased property damage, public safety hazards and water quality issues due to erosion and sedimentation, mudslides, or localized flooding. Maintaining and repairing stressed infrastructure, demand for emergency services and expansion of municipal infrastructure are all additional costs that may result from developing in steep areas. In addition, development on steep slopes, significant summits and ridgelines may impact the beauty of our landscapes and scenic vistas by fragmenting the view of the natural landscape from key vantage points.

Despite these costs there is some development pressure on these areas as

Significant Summit	Municipality	Elevation (ft)
Baker Hill	Vestal	1585
Beaman Hill	Triangle	1424
Bolles Hill	Vestal	1755
Bornt Hill	Union	1549
Brady Hill	Binghamton (T)	1788
Bunn Hill	Vestal	1745
Deyo Hill	Johnson City	1450
Grippen Hill	Vestal	1503
Hardy Hill	Maine	1391
Hunt Hill	Fenton	1670
Ingraham Hill	Vestal	1824
Lucky Hill	Binghamton (T)	1804
Mount Prospect	Binghamton (C)	1424
Page Pond Hill	Sanford	2008
Pierce Hill	Vestal	1385
Pierson Hill	Vestal	1644
Pigeon Hill	Fenton	1358
Pollard Hill	Maine	1512
Roundtop Hill	Vestal	1234
Slawson Hill	Sanford	2087
Tarbell Hill	Sanford	1903
West Hill	Vestal	1460
Wildcat Hill	Vestal	1575



a result of the floodplain discouraging development closer to rivers and streams. Therefore, it is important to document these significant areas in an effort to direct development to minimize the impacts. There are a variety of methods including design guidelines through overlay districts or other zoning mechanisms, establishment of critical environmental areas, utilization of planned unit development districts, and preservation through acquisition or conservation easements. From an open space planning perspective, preservation of these areas provides an opportunity for expansion of the open space network for recreation or ecosystem services, while protecting against the potential impacts of development there.

Special Geological Features

There are a couple of geological features in the County worth noting for their significance in the natural history of our region. One of these is Round Top Hill, whose summit is located in Vestal Hills Memorial Park Cemetery. When the current landscape was formed during glaciation, Round Top Hill sat 1,340 feet above sea level and became what geologists call a “floating mountain” that appeared to drift on the surface. At Chenango Valley State Park Lily and Chenango lakes are significant geological features. These were formed when two large glacial chunks were left behind as the glacier retreated. When these thawed, they left “kettle lakes”, unique in Broome County. Further glacial activity resulted in the hill separating the two lakes forming the unique geological landscape that exists today.

While these features are currently undeveloped due to existing land uses, they serve as examples of the types of sites that may not be incorporated into existing planning processes for their geological significance. Efforts to identify and promote these and other significant areas would help to raise awareness of their importance to our natural history.

Scenic Viewsheds and Byways

The County-wide LWRP, discussed earlier in this chapter, has identified several areas that are significant viewsheds and scenic areas within the LWRP boundary. According to the plan, many areas along the roadways in Broome County that offer great vistas and scenic overlooks take advantage of these areas and offer visitors and residents the opportunity to experience the beautiful scenery and geography of the area. For this context, scenic overlooks are specific to roadside pull-offs, with or without formal parking. They may be associated with trailheads, parks, or other features and offer no amenities other than informational or interpretive signage. They are typically for the enjoyment of the road traveler and help to promote the area. The recommended sites can be found in the LWRP document. Those identified focus on scenic overlooks in relation to the rivers, and therefore identification of scenic areas outside of the boundary established in that plan warrants further exploration.

State Scenic Byways, an initiative of the NYS DOT, are transportation corridors that are of particular statewide interest, representative of a region’s scenic, recreational, cultural,



natural, historic or archaeological significance. Its purpose is to create themed corridors across the state with the intent of fostering economic growth and resource conservation. Currently none of the three byways in the state run through Broome County.

Several of the County's rural routes that serve as gateways between Broome and other Counties have potential as scenic corridors. These include Routes 11, 12 and 79. The Route 17 corridor has also garnered some support for recognition as a scenic byway, however, at this stage that process hasn't moved forward. While none of these are currently designated as byways, open space opportunities along these corridors should be taken into consideration in recognition of their potential for such designation in the future.

Historic and Cultural Resources

When you evaluate your natural assets it is important to consider how they link to or support your historic and cultural assets. Placement of these properties within a natural setting makes them more attractive and inviting to residents and visitors. Furthermore, even if a property is officially recognized as being significant, such as on the National Register of Historic Places, it may not acknowledge the significance of a property's place within the landscape and context of the community. For example, the Binghamton Zoo at Ross Park is recognized for its cultural and historic significance in the community. However, beyond the property of the zoo itself, the surrounding parkland has provided a community gathering space throughout its history. Recognition of this service and integration into the parks system has maintained its function and the associated history. By integrating it into the open space network and establishing open space linkages, we can meet the multiple objectives of historic preservation and natural resource conservation, as well as enhancing visibility and access to the community.

There are eight nationally recognized historic districts in Broome County and 92 sites that are listed on the National Register of Historic Places, as well as several properties that are culturally or archeologically significant. The Susquehanna Heritage Area Management Plan does a full review of these resources and provides recommendations for their management. These are discussed further in the Cultural and Historic Resources Chapter, but consideration of their integration into the open space network is notable and worthy of further exploration.



Working Landscapes

Working landscapes are those in which an individual landowner provides for their own economic well-being through agricultural or other natural resource-based commodities, while at the same time enhancing their community's environmental, economic and social well-being through secondary benefits they provide. These primarily include farmlands and managed forest ranging from large, contiguous acreage devoted to a specific use, to smaller farms or niche markets, as well as urban gardens and street trees to some extent.

Working landscapes provide economic benefits by contributing to local economies directly through sales, job creation, and support services and often supply lucrative secondary markets such as food or wood processing and agri-tourism. While statewide agriculture and food sectors account for a small percentage of total output, evidence suggests that compared with other industries, farm and food related businesses make relatively large proportions of their business expenditures in-state. Therefore, efforts to enhance production in these sectors produce relatively large secondary benefits for industries linked to farm and food production. Similarly, efforts to support businesses related to local wood processing, or the use of wood waste or pellets, among others, increase the profitability and therefore the productive use of the county's forests.

Indirect benefits of farms and forests include maintaining scenic, cultural and historic landscapes, enhancing local heritage, and providing recreational opportunities, such as hunting, fishing, and horseback riding, all of which support economic interest. They also provide environmental benefits such as wildlife habitat, flood control, wetland protection, and air quality protection. Since farms and forests play dual roles in the community as businesses and providing community services, efforts to create a supportive business environment and keep these lands in productive use help to ensure that goals are met on both fronts to the benefit of both the farmers and the community at large. Long-term productive land use is highly dependent on effective stewardship and conservation through sustainable land management.



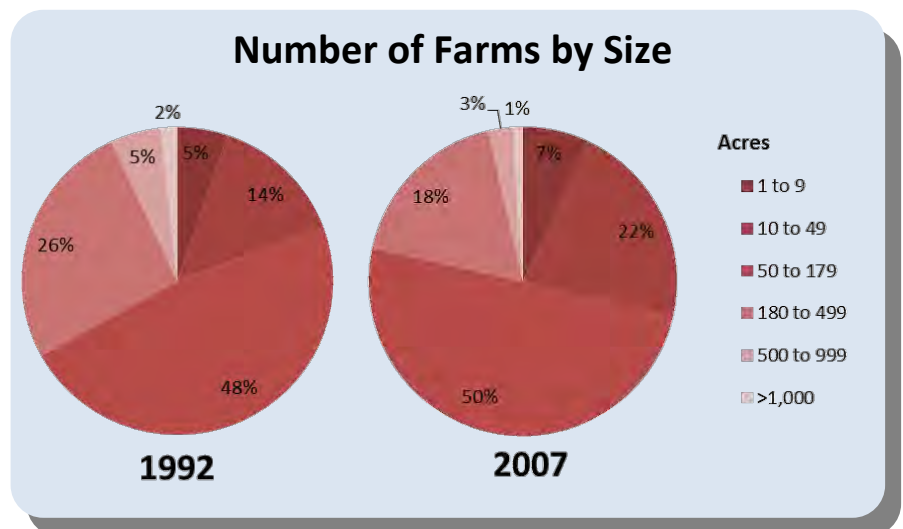


	1992	1997	2002	2007	Change	% Change
Land in farms (acres)	97,869	85,804	98,276	86,613	-11,256	-11.5%
Avg. farm size (acres)	189	168	167	149	-40	-21.2%
Number of Farms	517	511	588	580	63	12.2%

This view highlights the significance of working landscapes in meeting our economic development and environmental management goals, and challenges the perspective that new development is the most desirable use of agricultural or forested lands land, especially in rural communities and those transitioning from rural to suburban land uses. However, across New York State, there have been continual decreases in farm acreage, with over half being lost over the past 50-60 years.

When looking at the most recent Ag Census data, Broome County exhibits similar trends. Since 1992 the total land in farms has dropped by almost 12% and the average farm size has dropped by over 20%. At the same time, the number of farms has increased by about 12%. This suggests a trend to smaller more numerous farms throughout the County. This is further illustrated when you look at the change in the total percentage of large farms since the early nineties. According to the 1992 census, 33% of farms were 179 acres or larger. As of 2007 this number dropped to 22%. While this may have impacts such as a diversification in the farming economy, from an open space planning perspective this can be problematic in that the active farmlands become increasingly fragmented. It is important to recognize that the preservation of the natural setting surrounding farm and forest land is a key part of maintaining their viability. Encroachment of other land uses as farmland becomes fragmented may result in impacts such as limiting expansion potential and erosion of the rural and natural character that supports successful farms.

While the issue of farmland conversion to residential, commercial or industrial land should not be ignored, there is little comprehensive data to suggest that it is totally linked to development of residential, commercial or industrial uses. Instead, much of the land appears to have remained vacant and reverted to natural forest cover when cropping and pasture operations were





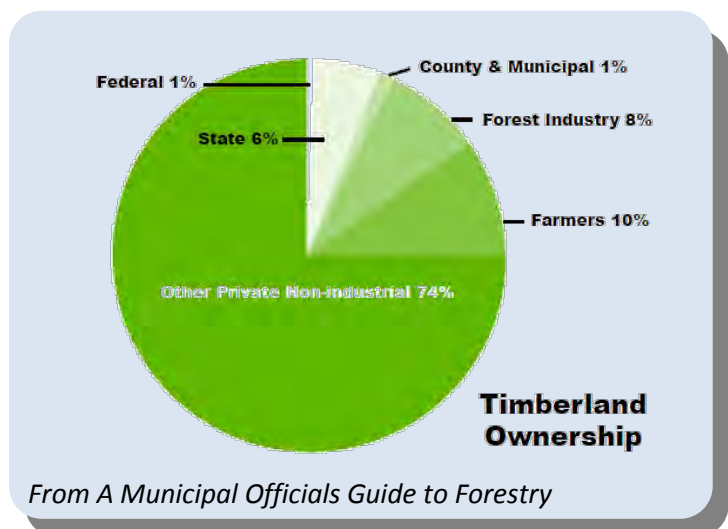
abandoned, as discussed in the land use chapter. This conversion of farmland to managed forests can serve as a secondary source of income to subsidize primary agricultural uses. In addition, from an open space planning perspective, the integration of managed forests into the framework of the farming landscape is a key component for maintaining the connectivity of the rural landscape.

Farmland and Forest Protection

Despite the cost of community service benefits of working landscapes, some officials still tend to treat any new construction as a net gain for the community. However, with increased interest in local farm products as a result of “buy local” programs and campaigns and the “locavore” movement, support for local agriculture is on the increase nationwide. This is advantageous since supporting local agri-business and maintaining the profitability of agricultural lands is one of the main actions to keep farms in productive use, rather than being sold out of economic necessity. Forest lands tend to meet similar challenges that threaten to make forest management less viable economically. Therefore, it is important that these efforts treat forests and wood products in a similar manner that recognizes their economic and environmental value to the community.

When it comes to farmland protection, a significant consideration is the preservation of soils that are suitable for cultivation. According to the most recent Broome County Agriculture and Economic Development Plan, the county’s natural resource base for agricultural is reasonably good, with more good to excellent soils than many areas of the Northeast. These soils encompass almost 10% of County land. According to recent land use data, almost 37,000 acres or close to 9% of lands in the county are identified as agricultural lands. Farmland protection programs focus on evaluating the status of agricultural productivity on these soils and making sure they are retained to ensure long-term viability.

The federal Forest Service defines forestland as “timberland or land that is fertile enough to produce wood as a crop and is not withdrawn from timber harvesting by statute or regulation”. While the State Forests are a significant component of managed forest lands, with 8625 acres in 13 sustainably managed forests in Broome, the majority of timberland in New York, about 90%, is privately owned by business concerns, farmers or family forest owners. According to the most





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recently available land use data, about 24,000 acres (6% of the County's land area), are classified as wild or forested. However, there is also a significant portion of County lands, about 147,000 or 35%, that are identified as vacant. A significant portion of this land is likely wild or forested and may account for some of the lands that have converted from agricultural use to forest lands, as discussed earlier.

When integrating forest lands into the green infrastructure or open space network, it is not only important to consider the total acreage of forested lands, but also the preservation of contiguous forest tracts. Similar to farmlands, forest fragmentation is usually preceded by parcelization, when forest land is broken into smaller ownerships. Though it may stay in forest use for a time, forested areas are becoming increasingly popular for second home or retirement. Properties that are smaller than 25 acres are difficult to manage for timber values, and also lose value for other public purposes, such as recreation and biological diversity. Yet the average size of privately-owned woodlots is steadily declining. Loss of forest land base jeopardizes local forest-related businesses that cannot afford to transport timber from more distant locations to be processed. Fragmented forest patches also become increasingly more vulnerable to the impacts of invasive species that threaten the lifespan of the trees and the quality of the wood.

Actions that support the profitability of agriculture and forestry industries and make it advantageous to keep the land productive use are key tools in open space management related to working landscapes. Private land stewardship, with the support of science, financial incentives, and technical and regulatory assistance can be an effective means when it comes to these lands.

Local leaders who would appear to be most interested in maintaining the rural character of their communities may take existing agricultural and forest protections for granted leading them to make little investment in cultivating community support for their industry. Through fostering partnerships with public agencies, private land owners and managers can be recognized and fairly compensated for the public benefits they provide. It is important to note that even though these tools are helpful on an individual parcel basis, it is essential that they are considered in a broader context in order to maximize the long-term benefits they are intended to provide.

Agricultural Districts are developed to keep farmland in active agricultural production and also serve to provide protection against laws that unreasonably restrict farm operations. The program is based on a combination of landowner incentives and protections designed to forestall the conversion of farmland to non-agricultural uses, including preferential real property tax treatment and protections against overly restrictive local laws, government funded acquisition or construction projects, and private nuisance suits involving agricultural practices. The County is responsible for designating the land to be included in these districts.



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Currently there are 152,449 acres of land listed within Broome's 3 Ag Districts, or 33% of the total area of the County, highlighting the importance of these lands in the community's economic and natural landscapes. These are very popular with farmers and provide the benefits of supporting a favorable operating environment and stabilizing large blocks of land to keep farming viable. However, they do not prevent conversion of land to nonfarm uses and tend to be more reactive than proactive. Efforts to integrate the principles of the Ag Districts into local plans and policies, including planning for the open space network, will help to ensure that the program is functioning to achieve the goals of farmland preservation and support of the farming economy.

The State's **Farmland Protection Program** provides funding sources for the purchase of development rights (PDR) on viable farmland and the development of local agricultural and farmland protection plans. Through the PDR program farmers can "cash out" of their farms without taking land out of the state's agricultural land base by selling their development rights through program. However, limitations in funding can cover only a very small proportion of the farmland that is at risk, so additional, meaningful incentives must be created and promoted. Farmland protection plans should identify the location of farmland proposed to be protected, the value of that land to the local economy, the value of that land as open space, consequences of possible conversion, and the level of conversion pressure on the land. Any farmland protection board, including Broome County's, is eligible for farmland protection planning funds. Broome County's most recent plan dates back to 2001. Due to the rapidly changing agricultural landscape discussed earlier in this section, regular updates of the plan are essential to meet farmland protection goals.

New York's **Agricultural Environmental Management (AEM)** program is a statewide, locally run program of voluntary pollution prevention that helps identify and correct environmental risks to watersheds and promotes public understanding and support for agricultural/environmental initiatives. Participation in the program provides effective and confidential environmental risk assessments. Farmers and ranchers participating in AEM may receive cost sharing for implementing recommended best management practices (BMPs) that correct identified environmental risks.

When it comes to privately owned forests the primary incentive to encourage the long-term ownership of woodland is the **NY Forest Tax Program** (also known as the 480-a tax incentive). This program supports forest land retention and sustainable management by allowing forest land to be taxed at a lower forest use value rather than its potential development value. Similar to the farm tax program, this tax incentive helps make it affordable for forest land owners to keep their land in forest use. A 10-year commitment and management plan are required to receive the tax break and a minimum of 50 acres of forest land must be involved. Forest land that is part of a farm ownership that is taxed at use value may also receive reduced tax assessments. Despite the approximately 171,000 acres of lands



identified as forest or vacant land earlier in this section, only 1328 acres are listed in the real property system as receiving the benefits from this program. Therefore, work to identify and assist landowners further in managing their land should be a priority for management of the County's forest resources.

Urban Tree Management and Urban Agriculture

Smaller scale urban tree management and urban garden initiatives may not have the obvious regional impact on an individual level as some of the rural forest management and agricultural areas. However, from a local and cumulative standpoint, they are significant in the context of urban neighborhoods that have significant impervious surfaces and limited open space resources, similar to the function of municipally owned parklands.

In addition to the obvious aesthetic benefits, street trees provide benefits in an urban setting by absorbing pollutants, keeping cities cooler, providing stormwater management and providing wildlife habitat. Furthermore, the presence of street trees has been shown to increase property values and help property owners to save money by relieving energy bills. Without comprehensive data to quantify the benefits of a community's street trees, urban tree management tends to happen on a case by case basis that may not consider these cumulative benefits. Therefore, local street tree programs that establish goals for the local community are essential to maintain their benefits and guide investments in this part of the green infrastructure. Locally, the City of Binghamton's Shade Tree Commission does some of this work in a partnership between the City and its residents.

Community gardens are the concept of converting underutilized urban property into garden plots that are managed and operated by community members for their own use. Benefits include improving aesthetics, fostering community pride, stimulating development and reducing food costs. A local non-profit, Volunteers Improving Neighborhood Environments (VINES) has been working to integrate these sites throughout the urban area in the City of Binghamton, with seven sites currently operating or in development.

One of the major issues that came up during public outreach for this plan was the negative impact of vacant or blighted properties. Considering the population decline that has been seen in Broome's urban neighborhoods, this provides significant opportunities for the further establishment of urban gardens and trees. Furthermore, there are opportunities where raised beds can be used for gardens on properties with poor soils or on rooftops or vacant lots. Local programs similar to those listed above can be a valuable tool for blight reduction in our urban and village centers. Support of local projects such as this, along with the community street tree programs can be an important investment in revitalizing these urban neighborhoods, improving quality of life and making them attractive for additional private investment.