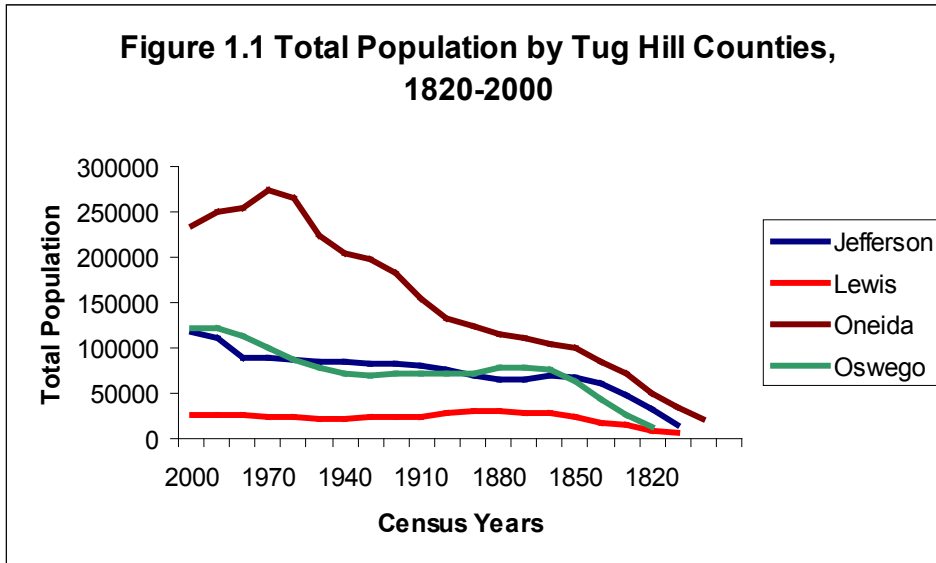


## Chapter 1: History and Demographics



Data Sources:

1940-1960 Census of Population 1950, Volume 1, Characteristics of the Population, Part 34 New York, US Department of Commerce, Bureau of the Census, HA 201 1960 P82+ V.1 Pt. 34

Citation: U.S. Bureau of the Census. U.S. Census of the Population: 1960. Vol. I, Characteristics of the Population. Part 34, New York. U.S. Government Printing Office, Washington, D.C., 1963

Imputed by Heather Marciniac

Data from 1800s through 1980

Adroit, John L. compiled and edited by Adroit, "Population Abstract of the United States" Volume 1, Tables . Androit Associates, Virginia (1983) p. 544 Cornell Call Number: OLIN REF HA 215 P83+ 1983 v. 1

**Figure 1.2 New York State: Top 10 Producing County Awards**

- Jefferson, Lewis, and Oneida are in the top 10 for milk production.
- Oswego and Lewis Counties are in the top 10 producers of onions.
- Jefferson is in the top 10 for beef cows.
- Oneida is in the top 10 for corn and oat production.
- Oswego is one of the top 10 growers of potatoes.
- Lewis is one of the top 10 producers of maple syrup.
- Jefferson is the number one honey producer.

Source: Tug Hill Commission. Tug Hill Tomorrow, Inc. (2004) Tug Hill Economy: Agriculture.

## Chapter 2: Natural Resources

Table 2.1: Landcover and percent of land type protected

Cover type	% of Tug Hill	Total Protected Acres*	% of Land Type Protected	% of Total	Protected Lands**
Spruce-fir	1.49%	3724	18.55%		1.61%
Evergreen wetland	0.83%	3206	28.86%		1.39%
Evergreen plantation	0.08%	759	69.35%		0.33%
Sugar maple mesic	22.09%	73681	24.82%		31.93%
Successional hardwoods	11.51%	18469	11.94%		8.00%
Deciduous wetland	1.80%	4902	20.30%		2.12%
Evergreen-northern hardwood	25.37%	96808	28.39%		41.96%
Mixed wetland	1.33%	4226	23.60%		1.83%
Successional shrub	1.46%	1501	7.64%		0.65%
Shrub swamp	0.24%	1132	35.21%		0.49%
Old field/pasture	5.94%	2255	2.82%		0.98%
Emergent marsh/open fen/wet meadow	0.29%	334	8.61%		0.14%
Cropland	18.07%	3663	1.51%		1.59%
Open water	8.02%	12661	11.75%		5.49%
Roads	0.49%	149	2.27%		0.06%
Urban	0.05%	17	2.36%		0.01%
Unknown	0.91%	2495	20.33%		1.08%
Golf course/park/lawn	<b>0.02%</b>	<b>0</b>	<b>0.00%</b>		<b>0.00%</b>
<b>Total</b>	<b>100.00%</b>	<b>229982</b>			<b>100.00%</b>

Sugar maple-mesic, successional hardwoods, deciduous wetland, and evergreen-northern hardwood are the landcovers with the greatest species richness, signaling their importance as conservation areas. While sugar maple-mesic and evergreen-northern hardwood comprise 32% and 42%, respectively, of total protected areas in Tug Hill, the percent of each land cover type protected may indicate the need for a more targeted strategy of protecting these and other high-biodiversity areas, including successional hardwoods and deciduous wetlands.

Note: \*Total protected acres calculation is calculated at 230,731; however, for the purposes of spatial comparison, only the protected parcels for which we had accurate shapefiles could be included in the analysis of protected acres by cover type, so total protected

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## Chapter 2: Natural Resources

Table 2.2: Species Richness by Land Cover Type

<b>Land Cover Type</b>	<b>Species Richness</b>	<b>Count Value</b>	<b>% Total</b>	<b>Cumulative Total</b>
Sugar maple mesic	162	1373669	22.09%	22.09%
Evergreen-northern hardwood	148	1577834	25.37%	47.46%
Deciduous wetland	143	111701	1.80%	49.26%
Successional hardwoods	143	715607	11.51%	60.77%
Mixed wetland	125	82854	1.33%	62.10%
Successional shrub	125	90872	1.46%	63.56%
Evergreen wetland	125	51405	0.83%	64.39%
Emergent marsh/open fen/wet meadow	114	17919	0.29%	64.68%
Old field/pasture	112	369578	5.94%	70.62%
Urban	104	3269	0.05%	70.67%
Roads	104	30444	0.49%	71.16%
Shrub swamp	103	14880	0.24%	71.40%
Golf course/park/lawn	99	1502	0.02%	71.43%
Cropland	97	1123681	18.07%	89.50%
Spruce-fir	92	92891	1.49%	90.99%
Evergreen plantation	80	5065	0.08%	91.07%
Open water	68	498404	8.02%	99.09%
Unknown		56780	0.91%	100.00%
<b>Total</b>		<b>6218355</b>	<b>100.00%</b>	<b>100.00%</b>

## Chapter 2: Natural Resources

**Table 2.3: Species listed as rare or threatened (combined) for the five major ecological units of Tug Hill, Sugar Maple Forest, Open Water, and Medium Fen, Rich Graminoid Fen, Rich Shrub Fen Wetlands**

Forest- Sugar maple Mesic	Wetland- Medium Fen	Wetland- Rich Graminoid Fen	Wetland- Rich Shrub Fen	Open Water- Oligotrophic Lake
Indiana Bat	Northern Bog Aster	Creeping Juniper	Northern Bog Aster	Mottled Darner
Striped Coralroot	Northern Harrier	Northern Bog Aster	Bog Turtle	Spatterdock Darner
Bald Eagle	Bog Turtle	Bog Turtle	Swamp Birch	Hill's Pondweed
Northern Clustered Sedge	Blanding's Turtle	Spreading Globeflower	Spreading Globeflower	Spotted Pondweed
Kentucky Warbler	Spreading Globeflower	Mead's Sedge	Mead's Sedge	Ogden's Pondweed
Timber Rattlesnake	Mead's Sedge	Dragon's Mouth Orchid	Dragon's Mouth Orchid	Riverbank Quillwort
West Virginia White	Dragon's Mouth Orchid	Slender Marsh	Sartwell's Sedge	
Northern Wild Comfrey	Pod Grass	Bluegrass	Schweinitz' Sedge	
Green Gentian	Livid Sedge	Sartwell's Sedge	Brown Bog Sedge	
Big Shellbark Hickory	Creeping Sedge	Livid Sedge	Creeping Sedge	
Woodland Agrimony		Schweinitz' Sedge	Northern Bog Sedge	
James' Sedge		Brown Bog Sedge		
Puttyroot		Hair-like Sedge		
Hooker's Orchid		Elk Sedge		
Nodding Pogonia				
Woodland Bluegrass				
Blunt-lobe Grape Fern				

Source: Edinger, G.J, et al., 2002: DRAFT Ecological Communities of New York State. Department of Environment and Conservation (DEC).

## Chapter 2: Natural Resources

**Table 2.4: Soil Type Descriptions**

Soil Type A/ Well Drained Soils	Well drained soils have high infiltration* rates even when very wet. These soils are deep and well-drained sands or gravels. Because of the high rate of water transition they have low runoff potential, which has implications for farming practices and conservation easements.
Soil Type B/ Moderately Drained Soils	Moderately drained soils have medium infiltration rates while saturated. These soils are moderately deep with well drained soils of fine to medium coarse textures. The water transmission rate is moderate, so they have a slightly higher runoff potential.
Soil Type C/ Poorly Drained Soils	Poorly drained soils have slow infiltration rates when saturated. These soils impede downward movement of water or have fine textures with a slow infiltration rate. The rate of water transmission is much lower than the previous two groups.
Soil Type D/ Very Poorly Drained Soils	Very poorly drained soils have very slow infiltration rates when wet. These soils are usually clayey and have high swelling potential, or have a high permanent water table, or have a claypan or clay layer at or near the surface. The soils can also be shallow over almost impervious materials. Of the soil groups these have the highest runoff potential and the lowest rate of water transmission.

\*Infiltration rate is the rate at which water enters the soil at the surface and is controlled by surface conditions. Transmission rate is the rate at which water moves in the soil and is controlled by properties of the soil layers.

**Table 2.5: Agricultural Assessment Exemptions in the Tug Hill Region**

County	Acres	Parcels	% Acres
Jefferson	7,496	101	4.1
Lewis	41,459	629	10.4
Oneida	27,863	378	6.1
Oswego	8,536	127	2.8
Totals	85,354	1,235	6.4

**Table 2.6: Forestry Assessment Exemptions in the Tug Hill Region**

County	Acres	Parcels	% Acres
Jefferson	n/a	n/a	n/a
Lewis	4,795	21	1.2
Oneida	1,523	13	0.3
Oswego	2,676	13	0.9
Totals	8,993	47	0.7

## Chapter 2: Natural Resources

**Table 2.7: Top 30 Private Land Owners**

<b>Land Owner</b>	<b>Acres</b>
GMO Forestry Fund 3 LP	30,102.94
Gutchess Timberlands, Inc.	18,810.43
Zeager Partnership LTD	5,898.92
Cortland Wood Products	4,807.70
Harden Furniture Inc.	4,424.59
Marks Farms Partnership	3,095.91
Porterdale Farms LLC	2,911.35
Erie Blvd Hydropower LP	2,753.66
Harden, Frank S.	2,621.16
Tug Hill LLC	2,160.70
Montaosa Club	2,156.38
Webb, Patricia A.	1,846.99
Douglaston Manor Inc.	1,730.65
Gallo, Marjorie	1,671.14
Yankee Forest LLC	1,636.03
B&B Family Limited Partnership	1,563.18
Niagara Mohawk Power Corporation	1,559.08
Harden Furniture Inc.	1,558.92
Kalnins, Ringolds	1,504.17
Club Wm Colvin	1,391.98
Ridgeview Farm LLC	1,322.91
Murcrest Farms LLC	1,261.78
Waligory, John Jr.	1,211.82
Beach Creek Hunting Club	1,191.22
Cotton & Hanlon Inc.	1,158.85
Carbone, Dominick D.	1,150.25
Buff, Joseph F.	1,097.88
King, Ronald G.	1,094.81
Senerchia, Jay V.	1,036.96
Yancey Combining	1,032.74
<b>Total Acreage</b>	<b>105,765.10</b>

**Table 2.8: Organizations Owning 300+ Acres**

<b>Organization</b>	<b>Acres</b>
Montaosa Club	2,156.38
Trustees Mas Hall Asy	1,450.34
Club Wm Colvin	1,391.98
Boy Scouts Of America	1,218.28
Beach Creek Hunting Club	1,191.22
Popple Ridge Club Inc.	910.09
Black River Environ. Imp. Area	845.40
Baldy Creek Rod & Gun Club	786.43
Otto-Mills Fish & Game Club	734.08
Club 6 Point	659.94
Chatham Hunt Club	640.64
Leaky Tent II Hunting Club Inc.	598.32
Fall Brook Fish & Game Club	571.66
Tug Hill Ski Area Inc.	564.12
Foothills Girl Scouts	511.57
Mad River Lodge	463.70
High Braes Refuge Inc.	461.21
Bear Creek Lodge Inc.	441.17
Trenton Fish and Game Club	426.42
Tamarack Club	410.65
Great Lakes Salmon Hatchery	409.35
Stillbrook Fish & Game Club	374.40
Sandy Creek Beagle Club	365.54
Central NY Presbyterian Church	318.93
Fish Creek Game Club	311.90

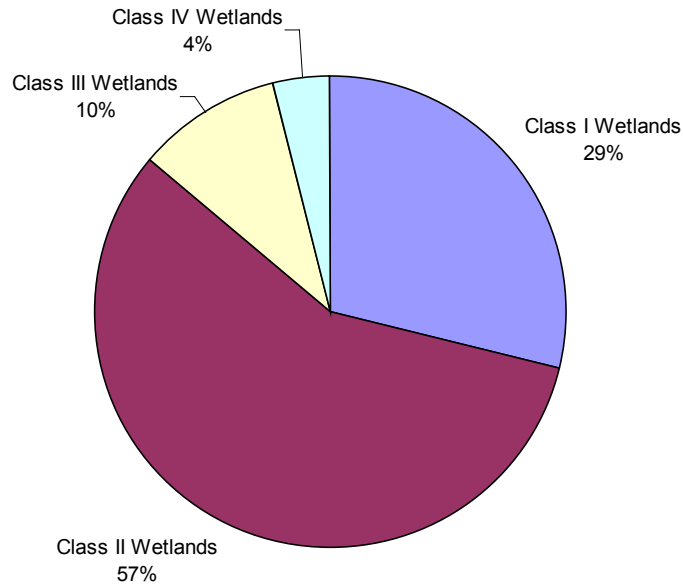
## Chapter 2: Natural Resources

**Table 2.9: Point Source Industrial Pollution/ Toxic Releases**

Facility	Chemical Name
AMF Bowling Products	Nitric Acid
Fibermark DSI	Benzo Perylene, Polycyclic Aromatic Compounds
Great Lakes Cheese of NY, Inc.	Nitric Acid, Nitrate Compounds
Griffith Oil Co. Inc.	Toluene, Benzene, Cumene
International Wire Group - Camden Wire Facility	Lead
International Wire Group - Omega Wire Facility	Copper
International Wire Group - OWI Facility	Benzo Perylene
Kraft Foods N.A. Inc.	Methanol, Toluene
LCO Destiny - LLC DBA Timeless Frames	Toluene
Oneida Ltd. Knife Plant	Ammonia, Nickel, Chromium
Stature Electric Inc. Owosso Corp.	Toluene

Source: Environmental Protection Agency, Toxic Release Inventory for 2004, Released November 2006

**Figure 2.1: Wetland areas of Tug Hill as identified by NY State classification**



**Figure 2.2: Watershed areas of Tug Hill; percentage of area**

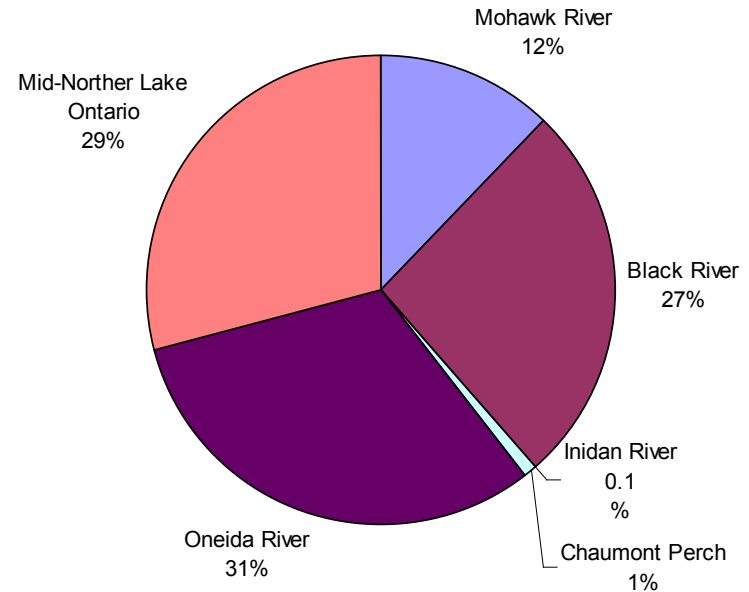


Figure 2.3: Soil Drainage

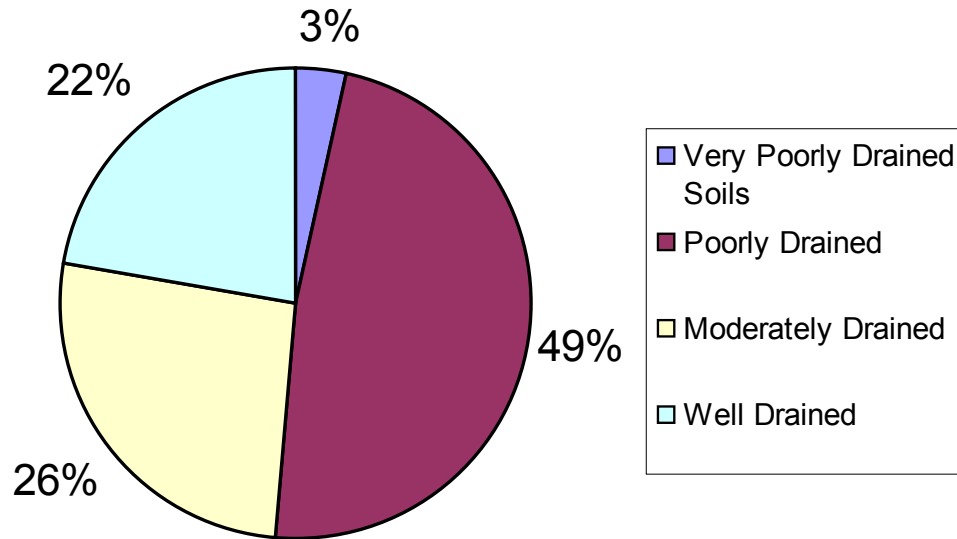
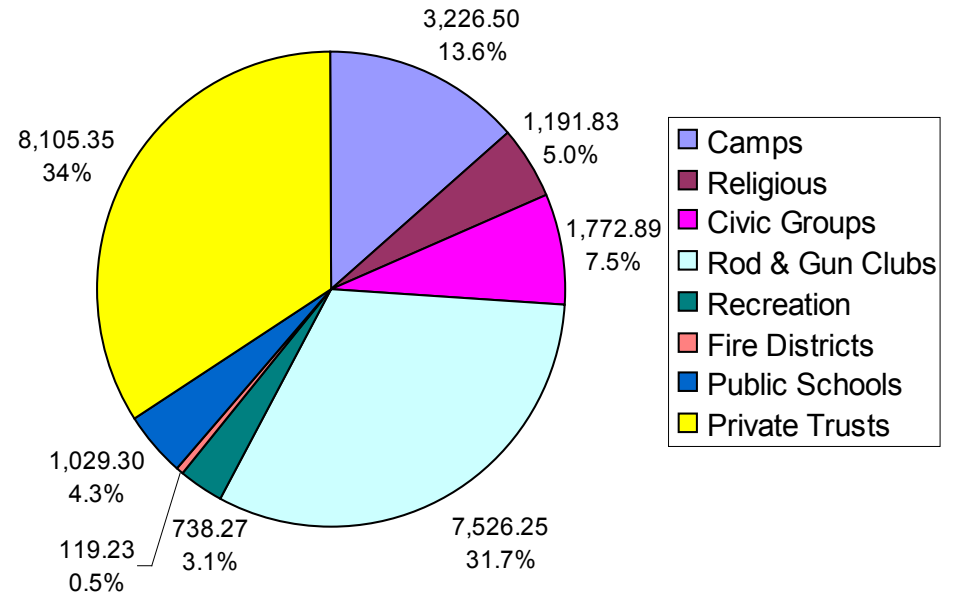


Figure 2.6: Land Holdings of "Gray" Landowners in Acres





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## Chapter 2: Natural Resources

### Land-cover description, with predicted flora, animal, amphibian, reptile and bird species for each land-cover type in Tug Hill

#### CROPLAND (FARMLANDS)

Description: Cultivated lands or grazed areas, fallow fields

Flora: Field edges and uncultivated spaces often occupied by non-native species, including queen-anne's lace and common mullein; hedgerows include mixed tree species from forest and successional habitats

Mammals: Woodchuck, Meadow jumping Mouse, Eastern Cottontail, White-tailed Deer

Amphibians/Reptiles: Red-backed salamander

Birds: Ring-billed Gull, Barn Swallow, Eastern Phoebe, Snowy Owl, Killdeer, Canada Goose, American Kestrel, Eastern Bluebird, Red-tailed Hawk, Bobolink, Mourning Dove, Eastern Meadowlark

#### DECIDUOUS WETLAND

Description: Treed areas with saturated soils, typically on hard substrates of shale, with a canopy cover of deciduous trees. For example, rich graminoid fen peatlands

Flora: Tree and shrub species include red maple, silky dogwood, shrubby cinquefoil, and hoary willow, although the dominant plant species are sedges, with abundant grasses and rushes. Rare species may be numerous and include creeping juniper, northern bog aster, mead's sedge, and dragon's mouth orchid

Mammals: Fisher, Marten, River Otter, American Mink, Short tail weasel, Muskrat

Amphibians/Reptiles: Bog turtle, four-toed salamander, American toad, bullfrog, mink frog, pickerel frog, spotted turtle, wood turtle, eastern painted turtle, eastern ribbon snake

Birds: American Bittern, Northern Harrier, Great Blue Heron, Green Heron, Solitary Sandpiper, Spotted Sandpiper, Red-winged Blackbird

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## Chapter 2: Natural Resources

### EMERGENT MARSH/ OPEN FEN/ WET MEADOW

Description: Open, standing water areas common, especially in Spring

Flora: Saturated stands of cattails, waterlilies, or grass-like plants, with masses of shrubs, such as Leatherleaf and Sheep Laurel. Grasses are important for pasture and hay

Mammals: Fisher, Marten, River Otter, American Mink, Short tail weasel, Muskrat

Amphibians/Reptiles: Spring Peeper, American Toad, Green Frog, Bullfrog, Pickerel Frog, Mink Frog, Four-toed Salamander, Eastern Ribbon Snake, Spotted Turtle, Eastern Painted Turtle

Birds: Great Blue Heron, Northern Harrier, Red-winged Blackbird, American Bittern, Solitary Sandpiper, Spotted Sandpiper, Green Heron

### EVERGREEN PLANTATION

Description: Evergreen trees of the same or similar species; plantations of evergreens in distinct rows; tree canopy typically uniform and even-aged

Flora: Eastern White Pine, Red Pine, Scotch Pine, White Spruce, Balsam Fir

Mammals: Deer mouse, red squirrel, porcupine, fisher, pine marten, bobcat,

Amphibians/Reptiles: Red-backed salamander

Birds: Red Crossbill, Ruffed grouse, Northern goshawk, Black-throated green warbler, White-throated sparrow, rose-Breasted grosbeak, Ruby-crowned kinglet, Red-breasted nuthatch, White-breasted nuthatch

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## Chapter 2: Natural Resources

### EVERGREEN WETLAND

Description: Treed areas with saturated soils most of the year and frequently standing water; low-lying periodically wet forest habitat; herbaceous layer often dominated by ferns

Flora: Red maple hardwood swamp, Hemlock-hardwood swamp, tamarack

Mammals: Virginia Opossum, Muskrat

Amphibians/Reptiles: Bog turtle, four-toed salamander, American toad, bullfrog, mink frog, pickerel frog, spotted turtle, wood turtle, eastern painted turtle, eastern ribbon snake

Birds: American Bittern, Northern Harrier, Great Blue Heron, Spotted Sandpiper, Red-winged Blackbird

### EVERGREEN NORTHERN HARDWOOD

Description: Hemlock-northern hardwood forest; mature hardwoods with scattered pines rising above the canopy and occasional patches of other evergreen trees; little understory; seedlings same species as canopy; ground carpeted with leaves

Flora: Can contain all species of the Hardwood Forest, as well as scattered individual eastern White Pines and Eastern Hemlocks, and some dense stands of Eastern Hemlock, Red Spruce, Balsam Fir, and Northern White Cedar. Small trees and shrubs include species of viburnum and blueberry. Herbaceous plants include Canada Mayflower and Bunchberry

Mammals: Fisher, Pine Marten, Snowshoe Hare

Amphibians/Reptiles: Red-backed salamander

Birds: Northern Goshawk, Yellow-bellied Sapsucker, Northern Saw-whet Owl, Barred Owl, Gruffed Grouse, Rose-breasted Grosbeak, Black-throated Green Warbler, Ruby-crowned Kinglet, Golden-crowned Kinglet, White-breasted Nuthatch, Red-breasted Nuthatch, White-throated Sparrow, Ovenbird

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## Chapter 2: Natural Resources

### MIXED WETLAND

Description: Treed areas with saturated soils, typically on hard substrates of shale. This land type includes the peatland and wetland communities, rich graminoid fen, medium fen, and rich shrub fen

Flora: Numerous sedge species, with tree and shrub species including red maple, speckled alder, green ash, poison sumac, american larch, black holly, silky dogwood, and hoary willow

Mammals: Muskrat

Amphibians/Reptiles: Bog turtle, four-toed salamander, American toad, bullfrog, mink frog, pickerel frog, spotted turtle, wood turtle, eastern painted turtle, eastern ribbon snake

Birds: American Bittern, Northern Harrier, Great Blue Heron, Green Heron, Solitary Sandpiper, Spotted Sandpiper, Red-winged Blackbird

### OLD FIELD/ PASTURE

Description: Lands converted from natural vegetation for agricultural or industrial utilization. Cultivated lands or grazed areas, fallow fields

Flora: Native vegetation typically fragmented and marginal. Field edges and uncultivated spaces often occupied by non-native species; dominated mostly by agricultural weeds

Mammals: White-tailed deer, woodchuck, eastern cottontail, long-tailed weasel, short-tailed weasel, meadow jumping mouse, little brown bat

Amphibians/Reptiles: Red-backed salamander

Birds: Canada goose, Red-tailed hawk, American kestrel, Killdeer, Ring-billed gull, Snowy owl, Barn swallow, Mourning dove

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## Chapter 2: Natural Resources

### SHRUB SWAMP

Description: Includes the peatland and wetland communities, 'rich graminoid fen', 'medium fen', and 'rich shrub fen', each located within the Tug Hill region

Flora: Characteristic flora includes the red maple, poison sumac, silky dogwood, as well as numerous sedge and rush species

Mammals: Virginia Opossum

Amphibians/Reptiles: Spotted Salamander, Wood Frog, Red-bellied Snake, Timber Rattlesnake

Birds: American Bittern, Northern Harrier, Great Blue Heron, Green Heron, Solitary Sandpiper, Spotted Sandpiper, Red-winged Blackbird

### SPRUCE FIR

Description: Widespread throughout the northern half of New York, with representation in both the Adirondacks and Tug Hill Plateau. Occurs typically in drainage basins, or at the edge of a lakes or ponds. Target area for logging operations.

Flora: The dominant tree is usually red spruce. Codominant trees include balsam fir and red maple. Other characteristic plant species include mountain holly and cinnamon fern.

Mammals: White-tailed deer, woodchuck, eastern cottontail, long-tailed weasel, short-tailed weasel, meadow jumping mouse, little brown bat

Amphibians/Reptiles: Spotted Salamander, Wood Frog, Red-bellied Snake, Timber Rattlesnake

Birds: Northern Goshawk, Yellow-bellied Sapsucker, Northern Saw-whet Owl, Barred Owl, ruffed Grouse, Rose-breasted Grosbeak, Black-throated Green Warbler, Ruby-crowned Kinglet, Golden-crowned Kinglet, White-breasted Nuthatch, Red-breasted Nuthatch, White-throated Sparrow, Oven-bird

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## Chapter 2: Natural Resources

### SUCCESSIONAL HARDWOODS

Description: Young forest located on abandoned farmlands and areas where the land has been cleared or disturbed in the distant past; trees not tall  
Variable habitat, with openings and edges often occupied by shrubland and farmland species.

Flora: Dominant trees include Quaking, Aspen, Bigtooth Aspen, Black Cherry, Red Maple, White Pine, Gray Birch.

Mammals: Gray fox, Striped Skunk, Hairy-tailed Mole, White-footed Mouse

Amphibians/Reptiles: Red-backed salamander

Birds: Northern Flicker, Baltimore Oriole, Eastern Wood Pewee, Ruby-throated Hummingbird, Blackburnian Warbler, Magnolia Warbler, Yellow Warbler, Eastern Towhee, Whip-poor-will

### SUCCESSIONAL SHRUB

Description: Shrub communities located in recently abandoned fields and pastures, which may include scattered trees; temporary stage in the natural reforestation of a cleared site, with at least 50% shrub cover.

Flora: Includes Gray Dogwood, raspberries, species of viburnum; openings between shrub masses often occupied by herbaceous species, such as Common Milkweed and various goldenrod species.

Mammals: Meadow vole, deer mouse, smoky shrew, pygmy shrew

Amphibians/Reptiles: Northern leopard frog, smooth green snake, brown snake

Birds: Chestnut-sided warbler, Indigo Bunting, Purple Finch, American Goldfinch, Brown Thrasher, Gray Catbird, Dark-eyed Junco, American Woodcock

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## Chapter 2: Natural Resources

### SUGAR MAPLE MESIC

Description: Mature forest situated on sloped upland terrain; high, closed canopy; mostly red fall color; little understory growth; moist, well-drained soils.

Flora: Dominated by Sugar Maple and American Beech; other species include American Basswood, White Ash, Yellow Birch, Black Cherry, Red Maple, Northern Red Oak. Among relatively few shrubs and herbaceous plants are Striped Maple, Common Witchhazel, Blue Cohosh.

Mammals: Eastern Chipmunk, Gray Squirrel, Red-backed Vole, Southern Flying Squirrel, Woodland Jumping Mouse, Indiana Bat

Amphibians/Reptiles: Spotted Salamander, Wood Frog, Red-bellied Snake, Timber Rattlesnake

Birds: Great Crested Flycatcher, Red-eyed Vireo, Scarlet Tanager, Brown Creeper, Downy Woodpecker, Hairy Woodpecker, Wood Thrush, Veery, Pileated Woodpecker, Great Horned Owl, Eastern Screech-Owl, Chimney Swift, Sharp-shinned Hawk, Broad-winged Hawk, Great-horned Owl, Wild Turkey

### GULFS AND BOGS

Description: Shale cliff and talus, Dwarf shrub bog; no flowing water; entry of water and nutrients by rainfall; plant growth is faster than decomposition, creating peat; floating mat of sedges and mosses. Gulf: deep, steep-sided gorges, major gulfs located on east and northern sides of Hill; exposed sedimentary rock in horizontal layers.

Flora: Isolated habitats that may contain some species of plants not likely to be found in any other habitat.

Mammals: Fisher, Marten, River Otter, American Mink, Short tail weasel, Muskrat

Amphibians/Reptiles: Bog turtle (endangered)

Birds: Louisiana Waterthrush

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## Chapter 3: Scenic Resources

### Caveats

There are a number of caveats worth taking into consideration in interpreting the findings of this report. Assessing scenic quality is a very subjective process. Although a technical approach was taken in determining viewpoints of scenic importance, there is still a certain degree of bias in interpreting scenic value. Also, because of the immensity of the Tug Hill Tomorrow Land Trust's service area, documenting every existing scenic view was beyond the scope of a class assignment. The viewpoints used in the analysis were dependent on selected routes, which rather than covering the entire area of Tug Hill, covered the most accessible and popular routes. Additionally, definitions of scenic quality change with the change of seasons. All of the views used in this analysis were collected in September, during the summer-fall transition period. Finally, the viewsheds generated in the analysis were based on views from ground level and do not take into account the height of the observer or natural features, such as trees, which may obstruct the view from any given point.

The acreage calculation for priority scenic areas should not be interpreted as an exact figure. First, the viewshed analysis included large water bodies, which are not applicable in a land conservation plan. To remove these acres from the total viewshed calculation, the raster data was converted to polygons and clipped to Oneida Lake, Delta Lake and the Salmon River Reservoir. An area for these clipped viewsheds was then calculated using the Spatial Statistics tool in ArcToolbox. Next, the clipped areas were removed from each category of scenic priority.

The reported acreage figures were calculated assuming a service area of 2,100 square miles (or 1,344,000 acres). This area did not match the area calculated in GIS. The GIS calculated areas are all slightly inflated (by 4%) to assume the scale of 2,100 square miles.



## Chapter 6: Implementation

**Table 6.1: Market-Based Land Use Tool Chart**

Market-based Land Use Tool	Primary Use	Benefits
Fee Simple Purchase	<ul style="list-style-type: none"> <li>• Obtain the full rights to a parcel through outright purchase</li> <li>• Administered by government agencies, land banks or trusts</li> </ul>	<ul style="list-style-type: none"> <li>• Relatively straightforward implementation</li> <li>• Obtain the full rights to a parcel through outright purchase, but expensive</li> <li>• Protects land from development in perpetuity</li> </ul>
Conservation Easements	<ul style="list-style-type: none"> <li>• Land Trust, Government Agency, or private entity monitors and enforces the agreement</li> </ul>	<ul style="list-style-type: none"> <li>• Land stays on tax rolls</li> <li>• Land can still be farmed or used for forestry, recreation, or other uses compatible with conservation goals</li> </ul>
Comprehensive Plan	<ul style="list-style-type: none"> <li>• Drafted by local planning department with public input</li> <li>• Adopted by municipality</li> </ul>	<ul style="list-style-type: none"> <li>• Relatively inexpensive compared to other tools</li> <li>• Can contain individual sections on open space, natural resources or the environment</li> <li>• Enable residents to engage in discussions of a community's future</li> </ul>
PDR	<ul style="list-style-type: none"> <li>• Can be administered by Land Trust or Government Agency</li> <li>• Funded through national or state programs or municipal funds</li> </ul>	<ul style="list-style-type: none"> <li>• Land stays on tax rolls and taxable value based on remaining amount left after purchase</li> <li>• Participation is voluntary</li> <li>• Protect land permanently</li> <li>• Help keep agricultural land affordable for farmers</li> </ul>
TDR	<ul style="list-style-type: none"> <li>• Landowner transfers rights necessary to protect conservation values</li> </ul>	<ul style="list-style-type: none"> <li>• Land stays on the tax rolls</li> <li>• Participation is voluntary</li> <li>• Private sector pays for conservation through steering development to designated "sending areas"</li> <li>• Complement PRD programs and other conservation options that rely on public funds</li> </ul>

## Chapter 6: Implementation

**Table 6.2: Regulatory Use Chart**

Regulatory Land Use Tool	Primary Use	Benefits
Cluster Subdivision	<ul style="list-style-type: none"> <li>Implemented through subdivision or zoning ordinance</li> <li>Residential or mixed-use development</li> </ul>	<ul style="list-style-type: none"> <li>Land stays on tax rolls</li> <li>Decision-making process at the local level</li> <li>Limited development</li> <li>Provide a buffer between farming operations and residential development</li> </ul>
CLDP	<ul style="list-style-type: none"> <li>Facilitated by land trusts</li> <li>Initiated by private landowners or developers</li> <li>High-end development</li> </ul>	<ul style="list-style-type: none"> <li>Land stays on the tax rolls</li> <li>Protects site's conservation values</li> <li>Provides long-term stewardship</li> <li>Cost-effective for land trusts since development revenues finance most/all cost of land protection</li> <li>Low to moderate risk for land trust</li> </ul>
Agricultural/ Rural Zoning	<ul style="list-style-type: none"> <li>Implemented through subdivision or zoning ordinance</li> <li>Agricultural and open space preservation</li> </ul>	<ul style="list-style-type: none"> <li>Land stays on the tax rolls</li> <li>Protects viability of land for agricultural use</li> <li>Potential "Right to Farm" language adopted</li> <li>Potential preferential property tax assessment</li> <li>Separate conflicting land uses</li> </ul>
Overlay District	<ul style="list-style-type: none"> <li>Implemented through subdivision or zoning ordinance</li> <li>Protecting agricultural resources, historic properties, aquifers, and scenic views</li> </ul>	<ul style="list-style-type: none"> <li>Land stays on the tax rolls</li> <li>Boundaries can be easily defined</li> <li>Substantial rewriting of underlying zoning, site plan review or subdivision regulations not required</li> <li>Decision-making process at the local level</li> <li>Partner with neighboring jurisdictions to permit more consistent region-wide planning</li> </ul>
Infrastructure Planning	<ul style="list-style-type: none"> <li>Implemented primarily through comprehensive plan or ordinance, but also through private and public entities</li> <li>Primarily protects agriculture, but also any area seeking to limit/steer development</li> </ul>	<ul style="list-style-type: none"> <li>Can support farm business vitality and reduce farm costs</li> <li>Fiscally responsible approach to community development</li> <li>Can strategically restrict construction and connection of services to limit the construction of new subdivisions in agriculture areas</li> <li>Steer development towards areas with existing infrastructure</li> </ul>

## Chapter 6: Implementation

**Table 6.3: Implementation Decision-making Guide**

Local Conditions	Appropriate Conservation Strategies
Limited water and sewer infrastructure + development pressures	= Cluster Subdivision and CLDPs
Development pressure + goal to protect farmland for agriculture and open space	= Ag/Rural District and large-lot zoning
Seasonal recreational development + second-home residences	= Cluster Subdivision or CLDP
Comprehensive Plan + timely infrastructure development + higher-density areas available	= Infrastructure planning or overlay district
Clear conservation goals + government-private cooperation + development pressure	= PDR

**Table 6.4: see Chapter 6**

**Table 6.5: Full Cost/Benefit Model for Test Parcels**

Municipality	Parcel Acreage	AV Tax Rate	Level of Current Land Assessment (%)	Current Land Assessment	Fair Market Value	Benefit	\$/acre	FMV/ Benefit	(\$/acre)/ Benefit
<i>Lee</i>	272.20	3.83	0.04	\$1,125.00	\$27,641.28	38.40	\$101.55	\$719.82	\$2.64
<i>Redfield</i>	392.12	8.19	1.00	\$114,600.00	\$114,600.00	54.13	\$292.26	\$2,117.20	\$5.40
<i>Denmark</i>	263.90	4.66	1.00	\$84,100.00	\$84,100.00	51.84	\$318.68	\$1,622.21	\$6.15
<i>West Turin</i>	247.20	10.25	0.08	\$6,200.00	\$82,119.21	47.89	\$332.20	\$1,714.68	\$6.94
<i>Adams</i>	26.00	87.33	0.85	\$4,100.00	\$4,823.53	19.81	\$185.52	\$243.44	\$9.36
<i>Willamstown</i>	108.79	8.51	1.00	\$62,800.00	\$62,800.00	35.83	\$577.26	\$1,752.74	\$16.11

**Methodology:**

- AV tax rate refers to the tax rate based upon assessed value of parcels.
- Level of assessment is the proportion of fair market value represented by the assessed value.
- Current land assessment values were taken from tax parcel files provided by the four counties.
- Fair market value was derived by dividing current land assessment by level of assessment.
- Benefit values were calculated through the suitability analysis in Chapter 5.
- \$/acre is based on fair market value.
- FMV/Benefit provides a gross value of the entire parcel; lower numbers indicate better gross values.
- (\$/acre)/benefit show the value of the parcel in terms of cost effectiveness and is particularly relevant for “partial” conservation measures like CLDPs; again, lower numbers indicate better values. According to this model, the parcel in Denmark would be the most cost-effective conservation target. The ranking presented here differs from the suitability analysis in Chapter 5 because this model incorporates cost-effectiveness.

Sources: New York State Office of Real Property Services (<http://www.orps.state.ny.us/>), tax parcel shapefiles from Jefferson, Oswego, Oneida, and Lewis counties.

## Chapter 6: Implementation

**Table 6.6: Government Partnerships and Funding Sources**

<b>Agency and Program</b>	<b>Website</b>
NRCS, Federal Farm and Ranch Lands Protection Program	<a href="http://www.nrcs.usda.gov/programs/frpp/">http://www.nrcs.usda.gov/programs/frpp/</a>
Conservation Reserve Enhancement Program	<a href="http://www.fsa.usda.gov/dafp/cepd/crep.htm">http://www.fsa.usda.gov/dafp/cepd/crep.htm</a>
NYS Department of Agriculture & Markets, Farmland Viability Program 25-AAAA	<a href="http://www.agmkt.state.ny.us">http://www.agmkt.state.ny.us</a>
NYS Department of Agriculture & Markets, Agriculture and Farmland Protection Project	<a href="http://www.agmkt.state.ny.us">http://www.agmkt.state.ny.us</a>
NYS Department of Agriculture & Markets, Grow NY Enterprise Program	<a href="http://www.agmkt.state.ny.us">http://www.agmkt.state.ny.us</a>
NYS Barns Restoration & Preservation Program	<a href="http://www.fs.fed.us/spf/coop/programs/loa/flep.shtml">http://www.fs.fed.us/spf/coop/programs/loa/flep.shtml</a>
Soil and Water Conservation Assistance Administration	<a href="http://www.nrcs.usda.gov/programs/swca">http://www.nrcs.usda.gov/programs/swca</a>
NYS Department of Environmental Conservation, Water Quality Improvement Projects (WQIP)	<a href="http://www.dec.state.ny.us/website/dow/wqip.html">http://www.dec.state.ny.us/website/dow/wqip.html</a>
NYS Conservation Partnership Program (NYSCPP)	<a href="http://www.lta.org/resources/04ny_grants.htm">http://www.lta.org/resources/04ny_grants.htm</a>
NYS Open Space Land Acquisition	<a href="http://nysparks.state.ny.us">http://nysparks.state.ny.us</a>
Transportation Equity Act of the 21 <sup>st</sup> Century- TEA-21	<a href="http://nysparks.state.ny.us/">http://nysparks.state.ny.us/</a>
The Recreational Trails Program (RTP)	<a href="http://www.fhwa.dot.gov/environment/rectrails/">http://www.fhwa.dot.gov/environment/rectrails/</a>
Pittman-Robertson Program	<a href="http://fa.r9.gws.gov/wr/fawr.html">http://fa.r9.gws.gov/wr/fawr.html</a>
Wildlife Habitat Incentives Program (WHIP)	<a href="http://www.nrcs.usda.gov/programs/whip/">http://www.nrcs.usda.gov/programs/whip/</a>
Ducks Unlimited (Grasslands and Wetland Protection)	<a href="http://www.ducks.org/Conservation/LandProtection/2832/LandProtectionPrograms.html">http://www.ducks.org/Conservation/LandProtection/2832/LandProtectionPrograms.html</a>
Fish and Wildlife Service (Federal Aid in Wildlife Restoration)	<a href="http://federalasst.fws.gov/wr/fawr.html">http://federalasst.fws.gov/wr/fawr.html</a>
US Army (Army Compatible Use Buffer)	<a href="http://www.sustainability.army.mil/tools/programtools_acub.cfm">http://www.sustainability.army.mil/tools/programtools_acub.cfm</a>