

Appendix A. Methodology

Background

The Appalachian Mountain Club (AMC) conducted GIS analyses in support of Open Space Institute's "Private Lands, Public Benefits" project, including an evaluation of the extent and spatial distribution of important open space resource values, developed areas, protected lands, areas regulated for development, steep slopes and unstable soils, and preferred growth areas. The methodology below is a basic outline of how this information was developed.

Open Space Resources

There are four open space resources data layers: agriculture, water quality, recreation and wildlife habitat.

Agriculture

The agriculture data layer is composed of the following:

1. Prime farmland soils, from the Natural Resources Conservation Service's Soil Survey Geographic (SSURGO) Database, 2008
2. Crop and pasture land, classifications from NOAA Land Cover Data, 2005

Water

The water quality resources data layer is composed of the following:

1. New York City Department of Environmental Protection (NYC DEP) protected lands, 2009
2. NYC DEP priority 1 and 2 watersheds (areas within 60 days of the water source)
3. New York State aquifers, the NYS Department of Health, Center for Environmental Health, Bureau of Public Water Supply Protection
4. Wetlands, NOAA Land Cover Data, 2005
5. Water bodies (lakes, ponds, marshes and reservoirs) from National Hydrography Data set (NHD),
6. Trout Unlimited streams with high Conservation Success Index (CSI equal to or greater than 60). Streams include 25-ft. buffers (50-ft. corridor).

Recreation

The recreation resource data layer is composed of the following:

1. Hiking trails including 25-ft. buffers (50-ft. corridor), data set was developed by AMC for this study from several sources including web, atlas and digital, 2007
2. Water access sites including 25-ft. buffers (50-ft. corridor) - data set was developed by AMC for this study from several sources including web, atlas and digital, 2007
3. Camping sites including 150-ft. buffers (300-ft. corridor) - data set was developed by AMC for this study from several sources including web, atlas and digital, 2007
4. Fishing sites including 25-ft. buffers (50-ft. corridor) - data set was developed by AMC for this study from several sources including web, atlas and digital, 2007
5. Protected lands – aggregate data set showing public and private protected lands developed by AMC for this study. This data set includes protected lands from New York State Department of Environmental Conservation, Open Space Institute, New York City Department of Environmental Protection, The Nature Conservancy, Mohonk Preserve, New York State Office of Parks, Recreation and Historic Preservation (2009)
6. Scenic byways including 25-ft. buffers (50-ft. corridor)
7. Trout Unlimited streams including 25-ft. buffers (50-ft. corridor)
8. The National Hydrography Data set (NHD), lakes, ponds and reservoirs
9. Open Space Institute and Adirondack Mountain Club recreation conservation priorities, 2008

Wildlife Habitat

The wildlife habitat resource data layer is composed of the following:

1. New York State Audubon Society, Important Bird Areas, 2007
2. Wetlands data set from the NOAA Land Cover Data, 2005
3. New York State Department of Environmental Conservation’s Natural Heritage Program Element Occurrences for animal, plant and community areas.
4. Catskill peaks above 3,500 feet: The Catskill Center for Conservation and Development, 2002
5. Trout Unlimited Priority Watersheds
6. The Nature Conservancy’s Forest Matrix Blocks

Protected Lands

The protected lands data layer is composed of information obtained from New York State Department of Environmental Conservation, Open Space Institute, New York City Department of Environmental Protection, The Nature Conservancy, Mohonk Preserve, and the New York State Office of Parks, Recreation and Historic Preservation.

Developed Lands

The developed lands data layer consists of the following:

1. Lands classified as development in the NOAA 2005 land cover
 - a. development – high intensity
 - b. development – medium intensity
 - c. development – low intensity
 - d. development – open space, (e.g. golf courses and parking lots)
2. Parcels less than or equal to 1.5 acres (does not exclude federal, state or town ownerships)
Parcel data were only available for 65% of Sullivan County.
3. Due to the lack of roads represented in the NOAA 2005 land cover, road development was incorporated into this layer using the Accident Location Information System (ALIS), The ALIS data is a vector based file of public streets compiled from orthoimagery and other sources. This data is released by the New York State Office of Cyber Security (OCS), 2008.
 - a. highways were buffered 20 meters
 - b. primary and secondary roads were buffered 10 meters
 - c. local roads were buffered 7 meters

Regulated lands and lands unfit for development

A data layer was developed to show areas where development is less likely given physical and regulatory constraints.

Three data layers were developed, one representing strict regulations, the second including regulations that are not as likely to be monitored and the third including all slopes and soils considered “very limited” for development.

All of the following data layers exclude developed lands.

1: Strictly Regulated Lands

1. DEP watershed regulations (outside designated hamlets) – only in the WOH Catskill and Delaware watersheds. Does not include lakes.
 - a. 100 ft. buffer on streams
 - b. 300 ft. buffer on reservoirs
 - c. 300 ft. buffer on reservoir “stems” (section of any tributary to a reservoir within 500 ft. of that reservoir)
2. New York State Freshwater Wetlands Act
 - a. DEC regulated wetlands with 100 ft. buffer
3. Clean Water Act
 - a. All wetlands, no buffer - NOAA 2005 land cover data
 - b. FEMA flood insurance regulations
 - i. Floodways – The floodplains data should have an attribute for floodways as a distinct part of the floodplain. The floodway is in the center of the floodplain. In the attribute table under Floodway field select FW for floodways.
4. Open water (based on 1:24000 USGS DLG data) –lakes and reservoirs for the entire study area.

Note: Hamlet boundaries and flood zones are currently under review and will be altered within the next two years.

2: Moderately Regulated Lands

1. Floodplains and floodways
2. 100 ft. buffers on all water bodies
 - a. All water bodies use the data layers developed for the Natural Resource Layers

3: Steep slopes and unstable soils

1. Slopes/soils that constrain development
 - a. Soils/Slopes (based on NRCS SSURGO 2.2 data)
 - i. Constrained soils - soil maps units that are rated as “very limited” in either one of the following two categories:
 1. Building site development - dwellings with basements
 2. Sanitary facilities - septic tank absorption fields

Preferred Growth

Preferred growth areas are identified because they do not overlap with the open space resources data layers (agriculture, water quality, recreation and habitat), protected lands, developed lands and regulated lands and steep slopes. At a regional scale, these areas represent a good estimate of available land for development that avoids direct impact on the open space resources.