Detailed inventory studies

Local information. Recreation groups can be a valuable source of knowledge about the location of popular cycling routes, swimming holes, fishing spots, and other recreation resources. Trails for hiking, skiing, snowmobiling, and horseback riding may be maintained by local or regional groups that can supply maps and other information (e.g., snowmobile clubs). This information can be digitized or manually added to maps.

Unmapped local trails. Using a geographic positioning system (GPS), volunteers can walk, hike, or bike local trail networks to document their geographic coordinates and add the information to inventory maps.

Old and abandoned roads are often used for recreation, such as Class VI and discontinued roads. Topographic maps and aerial photographs can be used to map their locations. Some roads and railroad corridors are listed on the NYS and National Registers of Historic Places. It may be useful to record whether these roads are closed by gates, abandoned, or of unknown status.

Where to find help

See Appendix A for organization contact information, Appendix B for publications and web resources, and Appendix C for sources of GIS data.

NYS Office of Parks, Recreation, and Historic Preservation
- State Parks, trails, snowmobile trails, and other amenities; roads and railroad corridors listed on the NYS and National Registers of Historic Places

NYS Department of Environmental Conservation
- Trails in State Forests, Wildlife Management Areas, Unique Areas, Forest Preserve land, boat launches, and public fishing access sites

NYS Department of Transportation
- Bicycling in New York website

Hudson River Valley Greenway
- Technical assistance, grants

NY/NJ Trails Conference, Rails-to-Trails Conservancy
- Trail information and assistance with planning trails

New York Snowmobile Association
- Trail networks, list of local clubs

County planning department
- Local data

Local recreation organizations and recreation commissions

LAND USE

Zoning and Tax Maps

Background

Local governments have the authority to enact zoning regulations to promote the public health, safety, and general welfare of their communities, among other purposes. Zoning is primarily enacted to control the use of land and the density of those uses, as deemed appropriate for the community. Zoning can encourage a variety of uses that are desirable, strictly regulate those that may
be potentially inharmonious, or prohibit those uses that are unwanted in the community. Zoning laws can protect important natural areas and cultural resources such as historic landmarks or districts, wetlands, floodplains, groundwater, wildlife habitats, and scenic areas. Various statutes define the use of zoning to encourage “the most appropriate use of land.”

An overlay map of current zoning at the scale of the NRI will give a general indication of land use as it relates to the natural resource base. This map may reveal areas that are zoned for uses that can threaten a critical resource or for which the resource base cannot reasonably or economically support. For example, an overlay map of zoning might point out that portions of the community’s groundwater supply are zoned to allow for conflicting land uses, such as allowing gas stations, petroleum bulk storage, or salt storage over important aquifers. Or the overlay may reveal that an area designated for high-density residential homes is situated in a large, unfragmented forest where the headwaters of a recreational creek are located.

Parcel-based tax map information is also helpful when reviewed together with the other NRI maps. A tax map overlay can help in the implementation phase of the NRI project, and can provide helpful information for a voluntary land protection program.

What to include

Digital zoning maps may be available from the county planning department for use in GIS. If the zoning maps aren’t digitized, find out if the municipality plans to do so. It is relatively inexpensive and easy to digitize zoning boundaries. If the NRI is being used in paper form, a mylar overlay with zoning information is helpful to use with the other resource maps. Zoning information can also be combined with a composite tax map base.

Digital tax parcel data are maintained by county tax assessor offices for use in GIS or other computer applications. Check with the county to obtain up-to-date parcel data. Keep in mind that tax parcel information frequently changes and current maps aren’t always accurate.

Where to find help

See Appendix A for organization contact information.

County planning department
  Mapping assistance, digital tax parcel data

Land Use and Land Cover

Background

Patterns of human land uses and natural land cover in a watershed strongly influence water resources and biological communities through the interactions of water, soil, organisms, and chemical components. Changes in natural land cover (especially forests, floodplains, and wetlands) accompanying conventional development patterns often result in substantial increases in impervious surfaces (e.g., roofs, parking lots, and roads) and can drastically alter stream health and hydrology by adding pollutants and sediment. Research has found that increases in impervious cover are linked to degradation in water quality and aquatic habitat value and an increase in flooding problems (Walsh et al. 2005). Without the use of best management practices, extensive agricultural land use in a watershed can likewise impair water quality through delivery of excess nutrients, sediment, and potentially pathogens to waterways. Furthermore, the fragmentation of natural areas by roads and development impedes wildlife movement, facilitates the spread of invasive species, and reduces overall habitat value.

Knowing the general distribution of land use and land cover in a municipality and its larger watershed context can help a community better understand past and present development patterns and plan for future growth. Directing new development to existing centers uses land more efficiently and saves money by taking advantage of existing infrastructure and allowing for greater density in already settled areas. Concentrating greater density in existing centers is often the best option to protect water resources, biological communities, and farmland because it takes pressure off development of the community’s remaining green spaces.

Concentrating greater density in existing centers is often the best option to protect water resources, biological communities, and farmland because it takes pressure off development of the community’s remaining green spaces.

What to include

The USGS National Land Cover Database (NLCD) has nationwide land use and land cover information at a 30-square meter resolution based on satellite imagery. Each 30x30m square represents a land use or land cover class, along with an estimate of the proportion of urban impervious surface for that cell. Accuracy assessments are underway for the most recently available 2011 data set. The 2001 NLCD was found to have a nationwide accuracy of about 80%, with variations by geography and by identified class.
The Coastal Change Analysis Program (C-CAP) of the National Oceanic and Atmospheric Administration (NOAA) produces a nationally standardized database of land cover and land change information for coastal regions of the United States. Similarly to NLCD, C-CAP relies on 30x30m pixel satellite imagery, but is limited to coastal areas and adjacent uplands. C-CAP coverage spans New York State and may provide more accurate land cover assessment than NLCD for some communities. The C-CAP land cover atlas is a useful online mapping tool that allows users to explore changes in general land cover, or look more specifically at forests, wetlands, and development since 1996.

Farmland

Background

Farmland includes cropland, hayfields, pastures, orchards, and nurseries. Millions of acres of crop and pasture land in New York State have been converted to non-farm uses or allowed to revert to forest cover in the last century. In many cases, marginal farmland has been abandoned and prime farmland preserved. In other cases, prime farmland is rapidly being converted to residential development. According to the American Farmland Trust, over the last 25 years, New York has lost almost half a million acres of farmland to subdivisions, strip malls, and scattered development, threatening food security and local economies. An inventory of valuable farmland is important to understand the extent of local resources and prioritize the most important areas to conserve.

Where to find help

See Appendix A for organization contact information and Appendix C for sources of GIS data.

United States Geological Survey
National Land Cover Database, impervious surface area

National Oceanic and Atmospheric Administration
Coastal Change Analysis Program, Land Cover Atlas

DEC Hudson River Estuary Program
Technical and mapping assistance

An Important Note on Land Cover Data Sets

It is critical to note that land cover data sets are most reliable at regional scales and have important limitations at the municipal scale. They should not be used for site planning and are not a viable substitute for on-the-ground knowledge and site visits—the data are not necessarily accurate at particular locations, and do not present information on many important habitat types. Used in an appropriate manner, satellite-derived data can be a useful tool to understand patterns of land use and land cover in municipalities and to identify areas of concern where land use could be impacting natural resources.
Farmlands provide much more than a place to produce crops and livestock. In New York’s primarily forested landscape, fields and other agricultural lands provide habitat for a variety of wildlife species and are important elements of rural community character and scenic views. Farmlands also provide an important historic link with the past. Conserved farm properties safeguard wildlife habitat and environmentally sensitive areas such as meadows, woodlands, wetlands, and streams. In fact, as much as 50% of the current acreage of Hudson Valley farm properties is forested or wetland habitat.

Prime farmland, as defined by the USDA Natural Resource Conservation Service (NRCS), is land best suited to food, feed, forage, fiber, and oilseed crops. It may be cultivated land, pasture, woodland, or other land potentially available for growing crops, but does not include developed land or surface water areas. Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resources. Prime farmland soils with current agricultural use are the most valuable farmland assets. Soils of Statewide Importance are lands, in addition to prime farmlands, that are of statewide importance for crop production. Both prime farmland soils and soils of statewide importance are derived from county soil surveys based on soil unit attributes supplied by NRCS.

What to include

The inventory of farmland in a community is probably more extensive than most residents realize. Farms may include pastures that support beef, sheep and horse farms, hayfields, microfarms and Community Supported Agriculture (CSA) farms, and “pick-your-own” operations, as well as dairy farms. In addition to active farmlands, potential farmland could also be identified based on soil conditions.

Prime and statewide important farmland soils are identified in county soil surveys. Soil survey reports contain useful narrative describing suitability for agricultural crops. Digital soil survey data for use in GIS are available online from the NRCS SSURGO database. Note that soil group valuations are for cropland only and may not reflect accurate valuations for other agricultural activities.

County and local information. County or local agriculture and farm land protection plans are a good source of information about farmland and local laws affecting soil resources and may have maps of priority farmland for preservation. Check with the county soil and water conservation district and local land trusts to see what information they have available on active farms.

Detailed inventory studies

There is no comprehensive data source for active or potential agricultural land use in New York, and available datasets have varying levels of completeness and accuracy. Scenic Hudson’s 2013 foodshed conservation plan for the Hudson Valley region presents a methodology for identifying possible farms based on three different data sources:

Over the last 25 years, New York has lost almost half a million acres of farmland to subdivisions, strip malls, and scattered development, threatening food security and local economies.
**Agricultural district data** may be obtained from New York State Department of Agriculture and Markets and county planning departments.

**Agricultural land use data** may be obtained from New York State Office of Real Property. Farmland may be defined as agricultural use (codes 100-190), residential agricultural (code 241), and abandoned agriculture (code 321).

**Agricultural tax exemption data** may be obtained from NYS Office of Real Property and joined to tax parcels provided by local tax agencies. Exemptions include 4172 (Agricultural District formed by county or New York State) and 173 (Agricultural Land outside of agriculture districts) only.

Possible farm parcels identified in any of the above data sets can be verified using aerial photography and windshield surveys.

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**Where to find help**

See Appendix A for organization contact information, Appendix B for publications and web resources, and Appendix C for sources of GIS data.

- **USDA Natural Resources Conservation Service**
  - Prime and statewide important agricultural soils
- **USDA Farm Service Agency**, county soil and water conservation districts, and Cornell Cooperative Extension
  - Active farms
- **NYS Department of Agriculture and Markets**
  - Agricultural district maps
- **NYS Department of Taxation and Finance, Office of Real Property Tax Services**
  - Tax exemption data
- **County planning departments**
  - Technical assistance, land use maps, agricultural district maps
- **American Farmland Trust, New York Office**
  - Municipal agriculture planning assistance
- **County agricultural and farmland protection boards**
  - Priority farmland for conservation efforts
- **Local land trusts**

**Conservation and Public Lands**

**Background**

By definition, conservation lands are properties that are generally undeveloped and protected from future development. Mapping the study area’s conservation lands will help identify potential needs and opportunities for expanding these areas to provide links between protected areas, or to add buffers to sensitive areas. The conservation lands map can also be used to identify priority resource areas currently limited or lacking in protection.

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**Mapping the study area’s conservation lands will help identify potential needs and opportunities for expanding these areas to provide links between protected areas, or to add buffers to sensitive areas.**

Protected lands can include a variety of public and privately-owned lands. Public lands may include federal, state, county, and municipally-owned lands. Note that public land ownership doesn’t necessarily ensure that land is protected in perpetuity. Land trusts are private, nonprofit organizations that protect land through a variety of voluntary methods, including outright purchase and conservation easements, a legal agreement between a landowner and a land trust or government agency that permanently limits uses of the land in order to protect its conservation values. In addition to private lands under protection from development, lands held by religious or educational institutions might be considered to function as conservation lands.
The municipality’s list of publicly-owned properties can be examined to determine what, if any, deed restrictions apply to the properties. Lists of municipally-owned lands can be found in annual reports or in the list of properties, by owner, that accompanies the local tax maps.

**What to include**

*Protected and public lands.* On maps, it is helpful to display conservation lands by category, e.g., federal, state, county, town, or private ownership. The New York Protected Areas Database (NYPAD) is the most comprehensive database available of protected lands in New York State. NYPAD defines protected lands as those lands that are protected, designated, or functioning as conservation lands, open space, natural areas, or recreational areas through fee ownership, easement, management agreement, current land use, or other mechanism. It is possible to query the database according to ownership category or other parcel attributes. NYPAD is updated on a regular basis, depending on funding availability. Check the NYPAD website for updates.

*Conservation easements* are most thoroughly documented in the National Conservation Easement Database (NCED), which compiles easement records from land trusts and public agencies throughout the United States. Check the NCED website for updates.

*Local land trusts* can provide up-to-date listings of their protected parcels. Hudson Valley land trusts are listed in Appendix A.

**Where to find help**

See *Appendix A* for organization contact information and *Appendix C* for sources of GIS data.

- New York Natural Heritage Program
- NY Protected Area Database
- National Conservation Easement Database
- Local and regional land trusts
  - Current fee- and conservation easement parcel information