

CHAPTER: 4

What to Include in the NRI

A natural resources inventory includes maps and an accompanying report with narrative descriptions, supporting data tables, and recommendations. In general, NRIs focus on natural resources and can include land uses and cultural resources as well. Ultimately, the scope of the inventory is up to the community and may be influenced by project goals and objectives, emerging priorities, staff or volunteer capacity, availability of data, and budget. Examples of NRI maps are provided in [Appendix I](#), and a wide range of inventory projects are described in [Appendix J](#).

A basic NRI can be completed using general but widely available information about natural and cultural resources and land use. Statewide data sets for natural resources are now easily obtained in GIS format. Some communities may wish to include more specific information about local resources, which may be available from county agencies and other organizations, or may require new data collection. Depending on particular community interests or concerns, detailed inventory studies may be warranted to supplement the existing data and enhance the NRI.

A basic NRI can be completed using general but widely available information about natural and cultural resources and land use. Depending on the needs and goals of the NRI project, additional detailed inventory studies can enhance the depth and value of the NRI.

The first stage in an NRI is to collect and map readily available data to provide a basis for describing and assessing the current status of known natural resources in the study area. Most of the data used in a basic NRI can be acquired from county, state, and federal agencies and other public information sources. This process will help the work group to refine its focus and determine whether additional data are needed to make the inventory more meaningful and valuable in the context of the study's goals and objectives.



Pickerel frog. © L. Heady



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[Table 2](#) contains a list of suggested components and recommended data for a basic NRI, including cultural resources and land use. Each of the suggested NRI components and data sources are discussed in more detail starting on [page 16](#). For communities that have already started work on an NRI, or are updating an existing NRI, the data recommendations can be reviewed and gaps identified. Similarly, the need for detailed inventory studies can be evaluated. Information from existing plans in the community can often be easily incorporated into an NRI. For example, municipal comprehensive plans and local watershed management plans, if available, may have relevant information. Environmental impact statements (EISs) from proposed developments in a community are kept on file by the planning board and may be an additional source of local natural resources data.

Where existing data falls short of the community's specific needs and goals for their NRI, the work group may decide to undertake detailed inventory studies either from the outset of the project or in follow-up studies after completion of the basic NRI. Detailed inventory studies collect additional information for particular inventory components to provide greater depth of knowledge and support the primary goals of the NRI. This may involve incorporating information from existing local studies, initiating new studies, analyzing existing GIS-based data, and/or collecting and analyzing new data. The results of the detailed inventory studies should be added to the series of basic NRI maps and incorporated into the narrative report.

Examples of the kinds of detailed inventory studies that can be added to an NRI are suggested for many of the basic components described below. The suggestions aren't exhaustive, but rather give some of the more common studies that can be added to an NRI. Other studies or data sources may be of interest, depending on the community's goals.

Inventory Format

Maps

Inventory maps show the location and extent (as known) of existing resources. Displaying groups of related resources in composite overlay maps helps to visualize the relationship of resources with land use, which can help to inform local planning. NRI components may also be presented in stand-alone maps where appropriate, such as soils. Carefully consider map layouts and avoid crowding maps with too much information. This guide recommends mapping options in some places, but recognizes that a one-size-fits-all approach is unlikely to accommodate the wide variety of conditions and features that occur across the region.

All inventory maps should include a map window or *frame* that accommodates the study area and its surroundings, preferably extending at least one mile into neighboring municipalities. It is especially valuable to bring attention to particularly large natural areas spanning municipal boundaries, since larger areas often have greater ecological value than smaller, fragmented areas. Taking a broad view will help show the extent of resources that span municipal boundaries, and can also help identify opportunities for intermunicipal cooperation. County planning departments, regional planning commissions, Hudson River Estuary Program staff, consultants, and other groups with GIS capabilities can provide guidance with compiling inventory maps. [Appendix I](#) provides some examples of inventory maps.

Inventory report

A written report is an important element of the NRI. It should identify members of the work group and describe the project's goals and methods, include descriptive

summaries of each resource inventoried, and summarize findings and recommendations. It is valuable for the report to interpret the results of the inventory, describe how the inventory can be used, and recommend a strategy for regular review and updating of the NRI. Depending on project goals, the report may suggest conservation recommendations that will require action by the community (see examples in [Chapter 6](#)). The NRI report provides a record to familiarize local officials and the public with the inventory work, can serve as a reference for decision-making, and can help set the stage for identifying conservation priorities and achieving planning and conservation goals.

At a minimum, the report should include a descriptive summary of each map. The narrative should describe each of the resources shown, discuss relevant aspects of resource distribution throughout the study area, draw attention to significant areas of resource concentration or concern, and discuss any major or emerging threats to the resource. It is valuable to frame conservation recommendations within this context, if the inventory provides them.

Documenting data sources

The descriptive summary of each resource should document the data sources used, including both GIS data layers and non-GIS studies. It is also important to list all data sources (including publication dates) on the maps produced for the inventory. If new GIS data are created for the inventory, associated metadata should be developed to describe the methods and standards used. Data tables or graphs documenting additional attributes about a particular resource can be useful to include in the inventory report. By creating a detailed record of data sources, documentation eases the task of future updates.



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Table 2: Suggested Inventory Components and Recommended Data: The following list primarily includes widely-available national and New York State data sets. Additional regional data sets may exist and in many cases, county agencies like planning departments have more localized data and should be consulted at the start of the inventory project. In all cases, local data should be included where available and appropriate.

Inventory Component	Recommended Data to Include	Page
Base Map	<ul style="list-style-type: none"> Municipal boundaries, transportation and utility networks, topography, aerial imagery, regional watershed boundaries, streams and waterbodies, landmarks 	16
Geology and Soils		
Bedrock and Surficial Geology	<ul style="list-style-type: none"> Bedrock and surficial geology features and table with geologic unit attributes 	16
Soils	<ul style="list-style-type: none"> Soil survey units and table with attributes 	18
Slopes	<ul style="list-style-type: none"> Percent slope calculated from a digital elevation model 	19
Water Resources		
Groundwater and Aquifers	<ul style="list-style-type: none"> Unconsolidated aquifers 	19
Watersheds	<ul style="list-style-type: none"> National Hydrography Dataset 10-digit HUC or other regional watershed boundaries 12-digit HUC subwatershed boundaries Smaller watersheds of interest to the NRI effort 	21
Streams and Waterbodies	<ul style="list-style-type: none"> National Hydrography Dataset streams and waterbodies 	22
Floodplains	<ul style="list-style-type: none"> FEMA floodway and 100-year and 500-year floodplains 	23
Wetlands	<ul style="list-style-type: none"> National Wetlands Inventory data DEC Freshwater Wetlands data Hydric soils from county soil survey 	24
Water Quality: Assessment and Standards	<ul style="list-style-type: none"> DEC Water Quality Classifications DEC Waterbody Inventory/Priority Waterbodies List Water quality monitoring data 	26
Water Quality: Potential and Known Contamination Sites	<ul style="list-style-type: none"> SPDES permit sites Hazardous waste sites 	28
Habitats and Wildlife		
Significant Biodiversity Areas	<ul style="list-style-type: none"> Hudson Valley Significant Biodiversity Areas 	28
Hudson River Coastal and Shoreline Habitat	<ul style="list-style-type: none"> Documented submerged aquatic vegetation Tidal wetlands Significant Coastal Fish and Wildlife Habitats Hudson River shoreline habitat type Significant natural communities 	29
Stream and Riparian Habitat	<ul style="list-style-type: none"> See Streams and Waterbodies section, above Significant natural communities Migratory fish runs DEC trout and trout spawning streams Known aquatic barriers to resident and migratory fish movement (e.g., dams, culverts) 	30
Wetland Habitat	<ul style="list-style-type: none"> See Wetlands section, above Significant natural communities 	32
Forests	<ul style="list-style-type: none"> Large forest patches Matrix forests and linkage zones Significant natural communities 	33
Grasslands and Shrublands	<ul style="list-style-type: none"> NYS <i>Breeding Bird Atlas</i> and NYS <i>Amphibian and Reptile Atlas</i> data Significant natural communities 	34
Rare Plant and Animal Species and Significant Natural Communities	<ul style="list-style-type: none"> Rare plant and animal species and significant natural communities Areas of known importance for rare species and significant ecosystems NYS <i>Breeding Bird Atlas</i> and NYS <i>Amphibian and Reptile Atlas</i> data 	36
Unfragmented Habitat Blocks	<ul style="list-style-type: none"> There are currently no region-wide publicly available data sets. See Chapter 4 for existing methodologies. 	39
Climate		
Climate Conditions and Projections	<ul style="list-style-type: none"> Scenic Hudson's sea level rise projections for the Hudson River estuary Table with current average climate conditions and projections of future climate conditions 	40
Cultural Resources		
Historic Resources	<ul style="list-style-type: none"> National Register and NYS historic districts and individually-designated historic sites National Heritage Corridor/Area and NYS Heritage Areas 	41
Scenic Resources	<ul style="list-style-type: none"> Scenic Areas of Statewide Significance Scenic byways 	43
Recreation Resources	<ul style="list-style-type: none"> Outdoor recreation destinations and amenities Public trails and fishing sites Conservation and public lands 	44
Land Use		
Zoning and Tax Maps	<ul style="list-style-type: none"> Municipal zoning and tax maps Real property tax records 	45
Land Use and Land Cover	<ul style="list-style-type: none"> National Land Cover or Coastal Change Analysis Program (C-CAP) data set 	46
Farmland	<ul style="list-style-type: none"> Prime farmland soils and farm soils of statewide importance Agricultural districts 	47
Conservation and Public Lands	<ul style="list-style-type: none"> Conserved or publicly owned lands under federal, state, county, town, or private ownership Conservation easements 	49