

DEVELOPMENT OF A NATURAL RESOURCES CONSERVATION PLAN FOR THE TOWN OF ANCRAM

A Proposal

Hudsonia Ltd.

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This document outlines a proposal for developing a Natural Resources Conservation Plan (NRCP) for the Town of Ancram, Columbia County, NY, in coordination with the Ancram Conservation Advisory Council. The plan will identify important resources in the town, will establish goals, targets, and priorities for conservation, and will outline an action agenda for carrying out the plan.

A proposed outline of the NRCP document is appended to this proposal. We expect that aspects of the outline will be altered by mutual agreement in the course of developing the plan, but that most or all of these topics will be covered in the final document.

Hudsonia will gather existing information from the Town of Ancram, the town's consultants, and from other private and public sources, and will develop a series of maps depicting important natural resources, prepare descriptions and analysis of the landscape and features of conservation concern, and identify known and anticipated threats to important resources. The CAC will use these maps, information, and analysis to identify conservation targets and priorities, with assistance from Hudsonia as needed.

Important resources to be included in the plan include groundwater, streams, ponds, wetland and upland habitats, scenic resources, recreational resources, farmland, and historic resources. In addition to independent data from other sources, the plan will use information from the *Ancram Comprehensive Plan*, the *Heritage Resources Plan* and the *Agriculture and Farmland Protection Plan* but will not duplicate those efforts. Recognizing that natural resources, open space, the scenic landscape, and abundant recreational opportunities are primary attractions for Ancram residents and visitors, the plan will explore ways to protect, improve, and expand existing features, such as trails for walking, hiking, and biking, and public-access lands and conservation areas, and identify potential opportunities for new recreational resources.

To help the CAC and others identify priority areas for conservation, Hudsonia will prepare interactive digital maps that allow the user to integrate the various kinds of natural resource data in a single map, and to view the map layers selectively, either singly or in combination with other layers.

Once the main conservation targets and the priority conservation areas have been identified, Hudsonia and the CAC will together identify the available means and tools for conservation, identify the other organizations, agencies, and individuals that may serve as conservation partners, and develop strategies, an action agenda, and a timeline for carrying out the various components of the plan.

Hudsonia will prepare a Natural Resources Conservation Plan document that will include the background information and analysis used to develop the plan, and the map figures illustrating the landscape characteristics, the resources of concern, and the final conservation targets and priorities identified by CAC. Throughout the document, the NRCP will relate the features of conservation concern to the lives and well-being of Ancram residents and businesses.

The NRCP document will be designed in a simple and attractive format suitable for use by town agencies, conservation partners, prospective funders, landowners, and the general public. The main body of the NRCP will consist of brief summary explanations, generously illustrated with photographs and map figures, and the appendices will contain the backup information that supports those summaries. All map figures will be in 8.5-inch x 11-inch portrait format for ease of printing and other reproduction.

Deliverables

At several stages in the project, Hudsonia will provide draft versions of the NRCP in digital (pdf) format for review by the CAC and others. Hudsonia will provide the final NRCP (in Adobe pdf format) and the GIS data on CD to the town. We will also provide layered pdf map files that allow users to view data layers selectively without GIS software. Any printing of the NRCP document or maps will be the responsibility of the town.

Budget

The cost for preparation of the NRCP is \$9600. This will cover gathering existing GIS data and other natural resource information, preparing map figures and NRCP narratives, conferring with the CAC about conservation priorities and document revisions, revising NRCP drafts as needed, and preparing the final NRCP document.

Timeline

Hudsonia and the Ancram CAC will endeavor to follow the timeline shown below and complete the draft NRCP document for review by other town agencies or the public within six months of the project initiation. Development of the NRCP is a collaborative effort, however, and achieving the interim milestones and meeting the final deadline for the project will depend upon timely completion of tasks by both Hudsonia and the CAC. Because it is impossible to predict the schedule of the final review to be carried out by other town agencies, the timing of completion of the final NRCP is unknown.

Proposed timeline for completion of Natural Resources Conservation Plan

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 9*
Gather GIS data and other background information	X						
Develop resource maps	X	X					
Draft preliminary narratives and submit to CAC	X	X					
Confer with CAC about conservation targets, priorities, tools, & partnerships		X	X				
Prepare and submit draft narratives and maps for all of the above			X				
CAC reviews draft and returns comments			X	X			
Hudsonia and CAC prepare NRCP action plan and timetable				X	X		
Prepare and submit pre-final draft of NRCP (for review by others)					X	X	
Revise NRCP according to results of review and CAC instructions; submit final deliverables							X

* Timing of completion of the final revisions will depend on the (unpredictable) timing of reviews by town agencies, the CAC, and others.

Qualifications

Hudsonia is a not-for-profit, non-advocacy institute for environmental research and education. For over 30 years we have studied the plants, animals, habitats, and ecology of the region, and provided information impartially to scientists, planners, public agencies, landowners, and others engaged in research, land use planning, and land use decision-making.

We have broad experience analyzing large landscapes, identifying and prioritizing natural features for conservation, and working with town agencies to advance their goals for protecting natural resources. Hudsonia biologists created the *Biodiversity Assessment Manual for the Hudson River Estuary Corridor*, published by the NYSDEC in 2001, and the *Harlem Valley and Ridges Supplement to the Biodiversity Assessment Manual*, available at hudsonia.org/current-projects/harlem-valley-ridges-supplement. We are well acquainted with the biological resources of the Harlem Valley of Columbia and Dutchess counties, and many Hudsonia studies have included locations in and near Ancram. We have identified and mapped ecologically significant habitats throughout the neighboring towns of North East and Pine Plains, and prepared extensive reports that identify conservation priorities and techniques.

In 2001 Hudsonia assisted members of the Ancram planning board, zoning board of appeals, and other community volunteers with carrying out a biodiversity assessment of a several-thousand-acre area bordering the Roeliff-Jansen Kill in Ancram, and creating a map and report on ecologically significant habitats in that study area. The Ancram CAC has since expanded the habitat mapping to an area covering approximately half the town, and Hudsonia is in the process of digitizing the entire map. In 2012 and 2013 Hudsonia is working with the Farmscape Ecology Program to identify and describe all the ecological communities of Columbia County; to date the study sites in that project have included at least nine sites in Ancram. Hudsonia is now preparing a strategic conservation plan for the Woodstock Land Conservancy (Ulster County, NY), which takes an approach similar to the one proposed here for conservation planning for a large area.

Personnel

Biologists Gretchen Stevens and Ingrid Haeckel will be the primary Hudsonia personnel on the Ancram NRCP project.

Gretchen Stevens is director of Hudsonia's Biodiversity Resources Center (BRC). She has 33 years professional experience as a field biologist in the Northeast, the last 23 of those here in the Hudson Valley. Gretchen's specialties include remote sensing, habitat assessments, habitat mapping, rare plant surveys, and other field biology, and bringing conservation science to land use decision-makers. She is co-author of the *Biodiversity Assessment Manual for the Hudson River Estuary Corridor* and *A Beginner's Guide to Wild Flowers of the Northeast*, and has authored and co-authored numerous technical reports and peer-reviewed papers on ecological studies, biological assessments, rare species, habitat conservation, and other subjects. Gretchen manages the GIS laboratory at Hudsonia, curates the Bard College Field Station Herbarium, and supervises the Habitat Mapping Program and the Biodiversity Education Program of the BRC.

Ingrid Haeckel, MA. Ingrid grew up in the Berkshires and studied environmental biology at Columbia University. She has a broad background in plant ecology, natural resource management, and geospatial analysis. Her Master's research (University of Texas at Austin) examined the ethnobotany, population ecology, and distribution of a threatened bromeliad species in Mexico. Ingrid is Hudsonia's Biodiversity Mapping Coordinator and, since joining Hudsonia in 2011, she has carried out work on the Town of Woodstock habitat map, the Woodstock Land Conservancy strategic conservation plan, a habitat connectivity model for the bog turtle, and other mapping projects and biodiversity assessments.

Appendix

Proposed Outline for Ancram Natural Resources Plan

INTRODUCTION

Key purposes of Natural Resources Plan:

- Support the Comprehensive Plan in areas of open space and environment
- Conservation of water resources, habitats, open space, and other features of the natural landscape
- Maintain/improve residents' appreciation, access, and recreational opportunities
- Environmental education

SUMMARY

A brief summary of the rationale, the findings, the plan, and the action agenda.

PHYSICAL SETTING

Brief descriptions of the geography, geology, physiography, and climate of Ancram. (Technical information and maps will be in the appendix.)

NATURAL RESOURCES OF IMPORTANCE TO RESIDENTS

1. Water Resources

Watersheds of major streams (include map)
 Surface water (streams, lakes, ponds, springs, floodplains)
 Groundwater (incorporate selected info & figures from aquifer report)
 Drinking water sources

2. Biological Resources

Vegetation: General description of vegetation in various settings (e.g., high-elevation, lowland, and riparian forests; upland meadows, shrublands, wetlands, etc.)

Wildlife: Known occurrences (current and historic): mammals, reptiles, amphibians, fish, birds, invertebrates (odonates, lepidopterans, bees, mollusks, etc.)

Biological Diversity (and its importance to Ancram)

Habitats (descriptions)
 Rare habitats, rare species and other species of conservation concern
 Large forests, large meadows, other important habitat areas (maps)
 Habitat map for northern Ancram

3. Significant Natural Areas

Aquifer Protection Areas
 Farmland: active, abandoned, potential
 Significant Biodiversity Areas
 Streams/riparian zones
 Wetlands/lakes/ponds
 Large forests
 Sand/gravel deposits

5. Scenic Views and Landscapes

Scenic roads
 Scenic ridgelines
 Scenic areas

PROTECTED LANDS

Public conservation lands

Private conservation lands (including conservation easements, private preserves, etc.)

PUBLIC RECREATION

Recreation and agriculture

Parks – CLC Public Conservation Areas, town properties

Trails

Existing trails for walking, biking, hiking

Transitioning town roads to “Complete Roads” for safe walking, biking, driving

Potential new trails

HVRT extension Millerton through Boston Corner – work begins 2013

RR bed trails – develop easements to create “walk-bike circuits” throughout town; connect where possible

Other public recreation resources, historic sites

ENVIRONMENTAL CHALLENGES

(Prioritize and add an Appendix for more technical info if needed)

Climate change – flooding, storm events, changing growing conditions...

Carbon footprints

Carbon sequestration

Effects of climate change on agriculture and natural resources

Water quality/quantity (surface water & groundwater) [include stormwater mgt issues here]

Fracking, and fracking waste materials

Soil loss and degradation

Farmland loss – refer to Ag plan

Harvestable resources (e.g., gravel, stone, iron, water, timber)

Loss, fragmentation, degradation of wildlife habitat

Invasive species (e.g., hemlock woolly adelgid, emerald ash borer, Asian long-horned beetle, zebra mussel, rock snot, garlic-mustard, tree-of-heaven, Oriental bittersweet, etc.)

Public access

GOALS, TARGETS, & PRIORITIES OF CONSERVATION PLAN

Overall goals for land development and conservation

Conservation targets and priorities -- conceptual and actual

(describe, explain rationale, and include map with tax parcel overlay)

STRATEGIES & IMPLEMENTATION

- Develop strategies and responsibilities for implementing components of plan
- Define and develop natural resource layers for Town’s GIS Planning Tool
- Develop public education plan (general)
 - Use Town Hall property for outdoor education events, showcase for land management, trails.
 - Plan public events and tours to introduce Ancram citizens and landowners to the town’s unusual, important, and interesting natural resources.
 - Develop signage, flyers, website materials, etc. for public education.
- Educational programs with Highway Department (and contractors as applicable)
 - “Greening up Stormwater Management”
 - “Complete Roads”

- Ensure roads are to “Rural Standards,” working with AAC
- Educational programs with farmers and Agricultural Advisory Council, including, e.g.:
 - Protecting water resources
 - Maintaining habitats (compatible with farm activities)
 - Sustainable agricultural practices
- Programs with landowners
 - Identify landowners of target areas and priority areas
 - Match conservation partners with target areas
 - Develop landowner outreach plan, including landowner education program
- Develop budgets, fundraising strategies, and funding sources for components of plan.
- Timeline & evaluation: Establish a simple, realistic timeline and measurable objectives for each stage of the plan. Establish schedule for interim evaluations of program, and redirection as necessary. Establish simple methods for determining whether the conservation activities are succeeding in protecting resources of importance to the town.

APPENDICES (outline)

A. GLOSSARY

B. TECHNICAL BACKGROUND INFORMATION

1. Geology and Physiography
 - Bedrock geology
 - Surficial geology (include generalized map of surficial materials)
 - Topography
 - Soils (general descriptions of soils throughout town, including farmland)
2. Climate
 - Temperature
 - Precipitation
 - Severe weather events
 - Climate change

C. CONSERVATION TOOLS

- Voluntary conservation by landowners
- Landowner education
- Conservation easements, purchase of development rights
- Land acquisition by public entities or private conservation organizations
- Establish Critical Environmental Areas
- Zoning regulations
- Other local legislation, environmental review procedures, etc.

D. PARTNERSHIPS FOR IMPLEMENTATION

Identify other organizations and agencies active in Ancram, Columbia County, northern Dutchess County, and western Massachusetts, and describe the scope of their potential involvement (e.g., NYS OPRHP, OSI, TNC, CLC, other conservation organizations, large landowners, individuals).

Describe the kinds of prospective partnerships and the various niches and priorities of each entity, to help analyze and illustrate the most effective approaches to conserving important resources.

MAP FIGURES FOR NATURAL RESOURCE CONSERVATION PLAN.

(Some will appear in the body of the plan, and the rest in the Appendix.)

- Bedrock geology
- Surficial geology
- Topography and elevation zones
- Soils (generalized)
- Water resources
 - Wetlands
 - Streams
 - Floodplains
 - Watersheds
 - Groundwater resources
- Ecologically significant habitats (incomplete)
- Unusual habitats and other biological features
- Significant Biodiversity Areas (identified by NYSDEC)
- Farmland soils and active farmland
- Conserved lands
 - Publicly-owned lands
 - Private preserves
 - Conservation easements
- Scenic resources
- Recreational resources
- Priority conservation areas