The Natural Resources of Dutchess County in the Past, Present and Future*

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Introduction
In this essay, I would like to present a broad view of the history of environmental and land use planning in Dutchess County – one that encompasses both the humanities and the social sciences as well as the natural sciences in order to understand the various approaches that have been used to observe, describe, interpret, analyze, understand, and manage our county’s natural resources. This seems to me to be a fitting approach since we are here, at Vassar College, which, through its Multidisciplinary Program in Environmental Studies (this past weekend’s 10th Anniversary) attempts to integrate these often-diverse fields of knowledge into something of a coherent whole when examining human-environment relationships. I hope to suggest that in most of these approaches an initial “inventory” acts as a foundation for the effort; it may simply be one of curiosity or it may be as focused as a scientific examination, but it will form the empirical base for later contemplation, policies or planning.

Ethical Approaches to Conservation
In A Sand County Almanac (1949, OUP 1966), the great conservationist Aldo Leopold (1887-1948) posits a “Land Ethic” as a philosophical basis for land stewardship. In creating policies for appropriate use of the land as natural resource, he argued, “[Q]uit thinking about decent land use as solely an economic problem. Examine each question in terms of what is ethically and esthetically right, as well as what is economically expedient. A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.” Furthermore, “We can be ethical only in relation to something we can see, feel, understand, love, or otherwise have faith in.”

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Inventories – both Natural Resource Inventories (NRI’s) and Cultural Resource Inventories (CRI’s) - can help us “see, feel and understand” these resources, and hopefully even “love or otherwise have faith in” our local landscapes, and thereby construct ethical land use policies. As Leopold observed, “A conservationist is one who is humbly aware that with each stroke he is writing his signature on the face of the land.” The Dutchess County landscape is a text upon which we, and generations before us, have written our signatures. Inventories, such as NRI’s and CRI’s, organize the elements of the landscape; they are the words, so-to-speak of the text, and help us discern how well its “integrity, stability, and beauty” has been maintained.

Over the last 300 years, the mid-Hudson and Dutchess County landscape has been perceived and shaped according to a number of different, and often, contrasting, approaches. Thirty years ago, D.W. Meinig, Maxwell Research Professor of Geography Emeritus at Syracuse University (who was recently elected to the National Academy of Arts and Sciences), offered ten separate categories for defining how one may perceive a landscape: for example, certain perspectives, such as “landscape as wealth,” which is a utilitarian view of land as an economic resource, often contrast with landscape as “nature” or “habitat” or “system” which consider landscape elements, that is, its natural resources, as composing a bioregion apart from human influence. Natural scientists often study the individual natural resources, or landscape elements, through such lenses, while humanists and social scientists lean towards Meinig’s categories of understanding the composition of a landscape as “ideology,” “history,” “place,” or “aesthetic.”

Today, I would like to briefly examine these perspectives with relation to the many ways in which both the natural and cultural resources that compose the Dutchess County landscape have been perceived, described, used, abused, promoted and planned.

Natural History – Early Narratives

Many of the earliest descriptions of the Hudson Valley were traveler’s narratives. Within the frame of natural history writing, many were simply lists and descriptions of “factual” observations, often of “curiosities,” or of natural resources according to potential economic value, such as forests, fauna, flora, soil fertility or minerals, such as iron ore in the Taconic Hills and eastern Dutchess County or clays for brick making along the Hudson River’s banks. Some of these 18th and early 19th century “inventories” attempted to place their observations into one or another of the emerging natural
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sciences, such as geology or botany, with attempts at identifying species diversity or geological formations. They were, at least among the best of them, holistic in their review of the elements that composed the natural world. Certainly, some tended towards a teleological, that is, a Divinely-centered, perspective of an organized, organic world. But, on the whole, they gathered thousands of “factual observations” which would – in the 19th century – begin to become part of a coherent system, something that we could eventually call “ecology.”

Meanwhile, local settlers expressed occasional concern at the growing overuse of the former natural resource bounty. For example, Hector St. John de Crevecoeur, author of the significant eighteenth-century work *Letters from an American Farmer* (1782) where he asked rhetorically, “What, then, is this new American?” and whose estate in Orange County was in the Hudson Valley bioregion, observed the relationship between deforestation and the drying up of the land. An interest in environmental conservation would develop into the nineteenth century. For example, in 1864, George Perkins Marsh published the first major treatise on conservation in America, *Man and Nature; or, Physical Geography as Modified by Human Action*, in which he posited “Man has too long forgotten that the earth was given to him for usufruct alone, not for consumption, still less for profligate waste.” Marsh’s call for stewardship of the land’s resources would lead to contrasting views of the domestication of the landscape, one where the role of man became the ecological dominant to shape, or “modify,” the landscape.

The study of Nature (always with a capital “N”) in the nineteenth-century was both scientific and practical, while also considered a moral undertaking. Although its rather eclectic collections of facts, objects and processes would eventually lead to the concept of the bioregion, such studies became subsumed by the rise of natural science. Yet, it is to the many longitudinal base-line collections that current Natural Resource Inventories refer. For example, the weather and ecological data that one of the last of the great “natural historians,” Daniel Smiley, collected at the Mohonk Mountain House and on the Mohonk Preserve here in the mid-Hudson bioregion is extraordinarily important for current research on climate change. Paul Huth carries on this tradition.

The Nineteenth-Century Landscape Aesthetic

In the 19th century, a concern for the human despoliation of the landscape engaged those who viewed landscape through a variety of lenses; for those who recognized a utilitarian perspective of the land’s
natural resources, deforestation and the loss of soil fertility argued for modernizing agricultural practices, such as the use of guano to fertilize depleted fields, while artists, essayists and gardeners portrayed the changing scene in ideological terms; some, positively as “improvements” and “progress,” while others deplored the loss of the natural environment.

Thomas Cole (1801-1848), considered the founder of the Hudson River School of Art, was also an essayist and an early advocate of conservation. In his “Essay on American Scenery” (1836), Cole not only presented the natural elements that are essential for a landscape painting (such as forests, waterfalls, and sky) and the emotions they symbolized, but also argued that the dialectic between the American wilderness and the cultivated landscape was being challenged by “improvements” such that “the sublimity of the wilderness should pass away.” He lamented that the “ravages of the axe are daily increasing – the most noble scenes are made desolate, and oftentimes with a wantonness and barbarism scarcely credible in a civilized nation.” Furthermore, he offered one of the earliest arguments for conservation, where “spots, now rife with beauty” should be preserved for future generations: “The way-side is becoming shadeless, and another generation will behold spots, now rife with beauty, desecrated by what is called improvement; which, as yet, generally destroys Nature’s beauty without substituting that of Art.” He admonished his readers, who were members of the emerging middle class, to develop a conservation ethic: “It would be well to cultivate the oasis that yet remains to us, and thus preserve the germs of a future and a purer system.”

Landscape elements noted in Cole’s essay were painted by fellow artists of the Hudson River School in the manner of the 19th century landscape aesthetic of the sublime, picturesque or the beautiful. Artists sought the sublime in the awe-inspiring power of waterfalls or the mystery of the dark and deep wilderness. Pastoral or bucolic scenes were picturesque, while other more domesticated scenes often beautiful.

The Hudson River Valley, with its Catskill Mountain wilderness, sky lakes and conglomerate sheer cliffs of the Shawangunk Mountains, and the farmlands and villages of Dutchess County inspired other artists, poets and essayists in early conservation efforts. The artist Asher B. Durand (1796-1886) memorialized Cole along with the poet and journalist William Cullen Bryant (1794-1878) upon Cole’s death in 1848 in his painting “Kindred Spirits” with both standing in a forest setting with Kaaterskill Falls in the background. And in this painting, as in his “Where the Streamlet sings in Rural Joy” (ca.
1850), Durand has carefully depicted the rocks, trees, and lichen, all drawn with felicitous concern for detail as he and others studied their geology and botany to portray a truthful telling of the elements of Nature (Figure 1). Note also how Durand’s title resonates with Bryant’s Romantic-era poetry. In this visual text, one can see both humanistic and scientific depictions of the aesthetic landscape.

Figure 1: Asher B. Durand. Where the Streamlet Sings in Rural Joy.²

² Oil on canvas, 24 1/8" x 18 1/4". The Frances Lehman Loeb Art Center, Vassar College, Poughkeepsie, New York, Gift of Matthew Vassar, 1864.1.26.
In 1847, one year before Cole’s death, Durand traveled through Dutchess County on a visit to the Stone Church, a natural rock cavern in the shape of a Gothic arch seventy feet high and fourteen feet wide. (From early on, then, we might argue that the Stone Church has been both a natural and a cultural resource.) From his 1847 visit Durand painted “Dover Plains, Dutchess County, New York” (1848, Figure 2). It is a rather bucolic view of farms, fields and the Fishkill Hills in the background. It is in the picturesque manner, with three visitors viewing the scene from a prospect on the lower left and cows contentedly in the mid-ground. On the lower right hand side is a small drumlin, which, a century-and-a-half later, has been removed for its gravel to pave roads. The painting is one of Durand’s most interesting as it depicts a domesticated landscape of harmony between man and nature in which, according to Meinig’s “landscape as artifact,” “every landscape is… a blend of man and nature.”

Figure 2: Asher B. Durand, Dover Plains, Dutchess County, New York.  

Oil on canvas, 42 1/2” x 60 1/2”. Smithsonian American Art Museum, Smithsonian Institution, Washington, D.C., Gift of Thomas M. Evans and museum purchase through the Smithsonian Institution Collections Acquisition Program, 1978, 126.
Dutchess County, and the rest of the Hudson Valley, were indeed becoming domesticated during the 1840s, with many of the large river estates hiring European gardeners to beautify their grounds. Andrew Jackson Downing (1815-1852), horticulturist with a nursery in Newburgh, became the “Arbiter of Taste” in landscape gardening throughout America during the heady days of industrialization and the move of many middle class out of the smoky polluted cities to the countryside. In his *Treatise on the Theory and Practice of Landscape Gardening, Adapted to North America* (1841), he laid the groundwork (so to speak) of landscape architecture and planning in America. In his other books, editorship of *The Horticulturist* monthly journal, and personal visits to local properties, he was instrumental in forming a landscape aesthetic that sought a harmony between the *picturesque*, with its ragged asymmetries of the wild, and with the *beautiful* and its rounded, formal and symmetrical elements.

A number of properties in Dutchess County landscaped their grounds with both picturesque and beautiful elements including groves of native trees, stream gorges, and vistas of the Hudson River or of forested hills and mountains. Two in particular remain as examples of Downing’s influence today: Montgomery Place in Rhinebeck and Springside in Poughkeepsie. The latter was Matthew Vassar’s summer estate. Downing worked with his partner Calvert Vaux to plan and develop the Springside property from 1850-52. Upon Downing’s tragic death by drowning during a steamboat fire on the Hudson River in 1852, Vassar commissioned four paintings by Henry Gritten of the site, which, along with Downing and Vaux’s signed drawings in the Vassar archive, an engraving in a contemporary copy of *The Horticulturist*, and the engravings in Benson Lossing’s biography of Matthew Vassar (1867), constitute the only extant documented materials of Downing’s work. The site is listed as a National Historic Landmark and the landscape is being restored through the efforts of volunteers led by John Mylod and Virginia Hancock.

After Downing’s death, Vaux would go to New York City to collaborate with Fredrick Law Olmsted to design Central Park, and thereby establish landscape architecture as a major design force to bring Nature into urban America. Although the aesthetic tradition in depicting natural resources as elements of Nature persisted throughout the 19th century, natural scientists offered new and competing ways of understanding and managing the natural world.
Natural Science in Dutchess County

Ante-bellum scientific surveys of Dutchess County created controversy in Natural Science. Ebenezer Emmons, a student of Amos Eaton, studied the geology of the Taconic Hills and declared a separate system from the European Silurian and Ordovician, setting up a major controversy within the emerging field of geology, which was only then determining its geologic time-table of rock facies. The study of both the Taconics and the Fishkill segment of the Highlands continued throughout the mid- and late 19th century to determine both their composition, of gneiss, limestone, and shale, and their origins. The Poughkeepsie newspapers in the 1840s published articles, prior to Agassiz’s trip to New York State to generate glacial theory, which attempted to understand the processes of landscape change. In the 1860s, Vassar geology (and Natural History) professors William B. Dwight and George Shattuck discovered fossils in the Taconic limestone; they also described the drumlins in Poughkeepsie and the ponds in Pine Plains left behind by the glaciers of the last Quaternary retraction that had left Long Island as its terminal moraine. Their research of the county’s geology, geomorphology and topography was significant in the evolution of the earth sciences. Both also added local specimens to Vassar’s Natural History Museum that had been established at the opening of the college after Matthew Vassar purchased, in 1862, the first “cabinet” of minerals and other natural objects sold by Henry Ward of Rochester, New York.

These early geologic surveys would continue into the early and mid-twentieth century with local studies by Thomas Hills and A. Scott Warthin. In 1924, Hills created relief maps of the Poughkeepsie and Clove quadrangles for the geology museum, while both he and Warthin gathered many specimens of local rocks and fossils for students to examine. Scott’s local geologic studies identified the tectonic forces that created the “Dutchess Melange” with its location on the edge of the Hudson River under the Mid-Hudson Bridge. He was also involved in hydrologic studies in the county, especially of the Wappinger Creek. Discussions with faculty from biology and zoology led to Scott and professor of botany Edith Roberts to found a Conservation Division in the Vassar curriculum in 1941. Warthin noted in his 1960 report that flooding forecasts by Conservation students “saved many lives” during the 1955 floods in Dutchess County. Warthin’s scientific work on the natural resources of the county eventually led to him becoming a founding board member of the Hudson River Environmental Society and Pattern for Progress, a regional planning organization, of which more later.
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In the 1950s, John H. Johnsen continued the study of Dutchess County geology, particularly its limestone and shale quarries and sand and gravel resources. In 1966, he co-authored with John Gerard Broughton and James F. Davis the publication *Geology and Mineral Resources of the Hudson Valley*. It was one of the major reports, along with its companion *Biological Resources*, that were commissioned by Governor Rockefeller’s Hudson River Valley Commission, to enable their regional planning efforts, of which, also, more to follow. Geologist Roy Budnik continues Johnny Johnsen’s work in the county’s sand and gravel quarries.

During the 1930s, Edith Adelaide Roberts, professor of plant science, studied and mapped the biota of the entire county. Together with historian Helen Wilkinson Reynolds, they collaborated on *The Role of Plant Life in the History of Dutchess County* (1938), a volume that indicated 29 plant associations of five groupings related to the locations where they were most likely to be found: open field; bog forest; aquatic plant; ravine; and floating mat. Along with tables on the plant species and maps of their locations throughout the county by Roberts, Reynolds complemented the study with cultural history; for example, where the sites of mills would have been constructed in the 17th and 18th century and the different field histories for what would be milled, such as timber or grains. Both argued for the planting of native plants rather than exotics in parks and more humanized landscapes, as A. J. Downing had espoused almost a century earlier, and the need, therefore, of a natural science base for regional and local planning. Roberts also developed a plant laboratory at Vassar College of all the native species, beginning in 1920. With Roberts’ plans in hand, Professor of Biology Margaret Ronsheim is currently studying aspects of plant succession at this site and the prospects for restoration.

Franklin Delano Roosevelt was a farmer and conservationist as well as Dutchess County’s most significant national and international political figure. In his first term in Albany in 1911-12 as a state senator representing Dutchess County, he was selected as Chairman of the Forest, Fish and Game Committee, and in his second term, he chaired the Agricultural Committee. He was an ardent supporter of open-space management and forestry on his estate in Hyde Park. In 1911, Roosevelt had his farm crew clear over-grown farmland at Springwood and the following year planted thousands of white pine, red pine, Scotch pine, and Norway spruce seedlings that he got from the New York State Conservation Commission. He ordered and planted close to one-half million trees on his property throughout his life. Roosevelt worked with professional foresters from the College of
Forestry at Syracuse University to plan his tree-planting efforts. After the chestnut blight moved up the Hudson valley, FDR attempted experiments to reintroduce the chestnut with Asian varieties in 1937. As president, FDR’s interest in forestry became an important part of the work of the Civilian Conservation Corps (CCC) in the TVA project and the national park system.

Even while busy as president of the United States, he continued to support ecological surveys and historical research in the Hudson valley. In a letter to historian and friend Helen Wilkinson Reynolds in 1937, Roosevelt wrote of his support for the survey work of Vassar College professor Edith Adelaide Roberts on the botanical resources of Dutchess County, and added some historical landscape comments of his own: “I am glad Miss Roberts is doing the ecological survey. Does she know the story about the two fields in front of our house? There are still three or four very old white oaks …we figured that they dated to about the year 1650…They grew up as field trees because they spread out from the bottom without hindrance from other trees.” As “wolf” trees, and with some archaeological data, Roosevelt surmised that Indians had cultivated the fields. Like the Stone Church, Springwood’s oak trees can be considered both natural and cultural resources.

**Dutchess County as a Regional Study in Natural Resources**

During the 1940s, a composite perspective of the natural resources of Dutchess County was created as a diorama of Stissing Mountain, located in Pine Plains, in the American Museum of Natural History in New York City. The main exhibit is titled “An October Afternoon near Stissing Mountain,” one of the four seasons displayed in the overall exhibit, along with specific displays of the local history, geology, soil, plant and animal life above and below ground. The exhibits are located in the Felix M. Warburg Memorial Hall of the museum; together they illustrate the ecology of plant and animal life over forty square miles in the Pine Plains area. The exhibits were opened in 1951 under the leadership of Henry K. Svenson, then chairman and curator of the museum’s Department of Forestry and General Botany, who conducted years of field research on the natural resources of the Pine Plains area, and Harry L. Shapiro, head of the Department of Anthropology, a summer resident of the town. They examine both the natural cycles and the human imprint on the land from the period of early settlement in 1790, through the height of agricultural production through the Civil War period, subsequent exhaustion of the land after 1870, and the restoration of fertility and improved land use practices in the twentieth century.
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Staff from Cornell Cooperative Extension Dutchess County assisted property owners in restoring their land, while natural scientists continued to study the natural resources of the area. These studies led to the effort by the Nature Conservancy in 1959 to create the Stissing Mountain and Thompson Pond nature preserve. Continued research by scientists including Madeleine Peirce from Vassar in 1973 and Eric Kiviat from Bard in 1990 and a report by the Town Conservation Advisory Committee (CAC) in 2004 led to the declaration of “The Stissing Mountain Critical Environmental Area” by New York State.

Cornell Cooperative Extension also promoted the preservation efforts by local land trusts including the Dutchess Land Conservancy in eastern Dutchess County and the Winnakee Land Trust in northern Dutchess County. For example, from 1985 to 2010 the Dutchess Land Conservancy worked with 330 landowners to protect over 33,000 acres. National and regional organizations, including the Nature Conservancy, Open Space Institute and Scenic Hudson, also worked to conserve land in the area, while many county residents engaged in creative approaches. For example, Frances and Willis Reese offered land along the Wappinger Creek to the town for a public park, Mary and William Lunt spearheaded the purchase of Peach Hill in the town of Poughkeepsie, and former orthopedic surgeon turned dairyman Samuel Simon organized a handful of family dairy farms into Hudson Valley Fresh, saving over 5,000 acres of farmland. In the region, with the leadership of Dutchess County resident Glenn Hoagland, Mohonk Preserve is the land steward of nearly 7,000 acres.

Regional Planning
Along with FDR, Dutchess County’s most famous public intellectual, author Louis Mumford was a proponent of open space planning. Mumford lived in Amenia and worked in New York City for the Regional Plan Association (RPA). In the 1930s, Mumford advocated to set aside space in the fast-growing New York Metropolitan region as parkland, such as linear parkways including the Taconic Parkway in Dutchess County. Among other ideas promoted by Mumford and his colleague Benton Mc Kanye, would be the delineation of a trail along the ridges of the Appalachian Mountains from Georgia to Maine. A segment of the Appalachian Trail runs through eastern Dutchess County, not too far from Mumford’s country home.
Many Dutchess County residents have taken care of the trail over the years, and during a period of re-routing in the 1970s, Vassar students in one of my land use seminars, assisted the Boston Regional office of the National Park Service to design the booklet that mapped out the new route. Over the next few years, other students in that seminar would delineate and map the Hyde Park Trail connecting NPS and New York State historic properties and parks. In 1976, my seminar students worked alongside Landscape Architecture students from Cornell University, to develop from the former Children’s Aid Society Summer Camp into a new county park, Bowdoin Park, with significant views of the Hudson River. This effort involved many levels of cooperation, as students were coordinated in the field by Bill Hogan of Cornell Cooperative Extension Dutchess County, assisted by County Planner Eric Gillert, and received ecological and natural resource advice from Axel Horne, Peter Dykeman and Gus Tillman of the Cary Arboretum (now the Cary Institute of Ecosystem Studies in Millbrook).

Regional planning efforts by various organizations and agencies would become more expansive in the second half of the 20th century. A number of different organizations would form, such as Mid-Hudson Pattern for Progress, which, like the RPA, is primarily interested in economic development, although environmental quality issues are also important as indicators of the quality of life. A major issue that planning agencies, such as the Dutchess County Department of Planning and Development, have studied and attempted to reverse, is that of “sprawl” and the loss of open space and farmland. Sprawl had entered the lexicon of environmental planning and community development issues in 1965 when Secretary of Housing and Urban Development Robert C. Weaver spoke at the dedication of the Dutchess County office building in downtown Poughkeepsie. He posited that the containment of sprawl would be through “comprehensive area-wide planning,” that is, through both central city renewal and by careful land use planning and zoning in the villages and countryside.

County Commissioner of Planning Henry Heissenbuttel and his deputy Kenneth Toole took up the challenge. In their publication The Future of Dutchess County, published in 1972, they created a conceptual land use framework that distinguished between city, village and countryside, to enhance economic growth, while supporting social communities and conserving the county’s significant natural resources and landscapes. The guidelines were published by the Regional Plan Association, in cooperation with the County and Mid-Hudson Pattern for Progress, and the next year became the foundation for the RPA’s and Pattern’s own publication The Mid-Hudson: A Development Guide, in
which open space and agricultural areas were a part of the overall planning to preserve regional natural resources. These two sets of guidelines from 35 years ago have formed the basis for the currently proposed *Centers and Greenspaces Guide* by the county planning department.

In the late 1960s under Toole’s direction, the county had already begun a cultural resources survey to update the 1966 Hudson River Valley Commission report *Historic Sites and Buildings in the Hudson River Valley*. In the 1969 *Landmarks of Dutchess County, 1683-1867*, published in the Architecture Worth Saving in New York series by the New York State Council on the Arts, over 300 structures were researched and photographed and with consultation from Jeh V. Johnson, local and nationally recognized architect and professor of architecture at Vassar. The volume was published in order to guide “growth and development” and “encourage selective preservation of this inheritance.”

A decade later, the State got back into the act of inventorying the natural and cultural resources of the Hudson River Valley. In the 1979 *The Hudson River Valley Study*, the DEC, under Commissioner Robert Flacke and former Commissioner Peter Berle and his special assistant Peter Borrelli, directed a report to the state legislature to enact legislation “with regard to the need to protect the scenic, recreational and ecologically-important resources” of the mid-Hudson river valley. The cultural and natural resource study coincided with the development of the Coastal Zone Management Program in the same years. Both of these studies eventually led to state legislation to develop the Hudson River Valley Greenway in 1990. Other later studies, inventories, and planning documents, such as DEC’s *Conserving Open Space in New York State, 1998* and the *Dutchess County Agricultural and Farmland Protection Plan* of the same year, would lead Congressman Maurice Hinchey, this year (2010), to request the National Park Service to revisit the earlier studies promoted by Laurance Rockefeller after the demise of the Hudson River Valley Commission in 1976 about a possible NPS heritage area.

Scenic Hudson led the effort to develop the Greenway, and included the public agencies of the New York State Department of Environmental Conservation (DEC) and Office of Parks, Recreation and Historic Preservation (OPRHP), NYS Council on the Arts, and the National Park Service. Most of the promotional effort came from Dutchess County and included Franny Reese, “Godmother of the Hudson River,” Dennis Murray, president of Marist College, Jay Rolison, state senator from the county, and Richard Wager, publisher of the *Poughkeepsie Journal*, who, according to Scenic Hudson’s then-executive director Klara Sauer, personally persuaded Governor George Pataki to sign the legislation in the final hour. Dutchess County was the first county to sign on to the Compact, and the
Greenway across the Beacon-Newburgh Bridge along I-84 linking the two cities would be among the first trails generated by the state program. As of 2010, the Greenway Compact has been adopted by 29 of the county’s 30 municipalities.

In 2009, the Walkway Over the Hudson opened as the “longest pedestrian bridge in the world” with overwhelming support from mid-Hudson citizens, linking the counties of Dutchess and Ulster. Hiking and biking trails from the Harlem Valley in eastern Dutchess County to New Paltz and west will soon connect twenty to thirty miles of trails, fulfilling Mumford’s vision from his home in Amenia. The last five years of the effort to secure the former Poughkeepsie Railroad Bridge was led by Dutchess County resident and avid biker Fred Schaeffer who garnered funding from the Dyson Foundation in Millbrook, Scenic Hudson, and state and federal grants. Over 700,000 walkers, bicyclists, and strollers have used the Walkway in its first year, allowing views of the natural and cultural resources of the Mid-Hudson valley, including Scenic Hudson’s Frances Reese Park on the west shore south of the Walkway and the Mid-Hudson Bridge.

Three decades earlier, in northern Dutchess County, the Hudson River Shorelands Task Force was formed by the non-profit historic preservation organization Hudson River Heritage, who, with active volunteers, developed a survey of major river estate properties, from the Roosevelt and Vanderbilt NPS historic sites to Wilderstein and Montgomery Place estates in the Towns of Hyde Park, Rhinebeck, Red Hook and Tivoli. The completion of the initial survey led to many more estate properties being placed on the National Register of Historic Places, and declaration of the entire 16-mile District as the “longest historic district in the nation.” As Executive Director of the Shorelands Task Force in 1979-80, I worked to get all the affected municipalities to sign on to a compact to recognize the historic district as they planned for development. We were eventually successful, and it would become a model for the Greenway Compact about a decade later.

The first New York State Scenic Roads guidelines were developed for the estates district, which, over the years expanded from its original 16 miles in Dutchess County northward into Columbia County to include the historic Livingston lands and historic site of Clermont and the state historic site of Olana. New York State has recognized the “Estates District Scenic Area” as an Area of Statewide Significance for use in regional and local planning.
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In addition, the initial success encouraged Hudson River Heritage to develop Cultural Resource Inventories (CRI) for each of the towns to be incorporated into their master plans and zoning maps. This effort was coordinated with the development of Natural Resource Inventories (NRI’s) through assistance of Cornell Cooperative Extension Dutchess County and the exhaustive and impeccable scientific research of Eric Kiviat at Hudsonia, the environmental research institute located at Bard College. Eric’s research and publications on the wetlands, plants, animals (especially the Blanding’s turtle), and human ecology of Dutchess County, and indeed the entire mid-Hudson bioregion, has been instrumental in writing a set of Biodiversity Guidelines in 2001 for the Dutchess County Environmental Management Council (EMC) and local CACs to develop NRIs for the county’s planning efforts, town and village master plans, and the Hudson River Estuary Program’s “Significant Biodiversity Areas.”

Environmental Planning

The use of environmental research through NRIs and special scientific-based reports by consultants or non-profit environmental organizations evolved through legislation and public policies during the 1960s and 70s. In 1962, Rachel Carson’s Silent Spring had brought the dangers of pesticides to the forefront of national consciousness, while various landscape conservation and wilderness preservation battles that led to the enactment of the Wilderness Act in 1964 continued to make the national news. Aldo Leopold’s A Sand County Almanac was published in 1966. In that same period, Consolidated Edison (Con Ed) proposed a hydroelectric power plant on Storm King Mountain in the Hudson Highlands. Conservationists throughout the Hudson Valley were outraged at the potential desecration of the mountain, and a small group organized themselves into the Scenic Hudson Preservation Conference, later simply Scenic Hudson, fought to stave off the project. After many scientific reports were filed about the potential harm to the river and its ecology and to the mountain itself, the U.S. Court of Appeals in 1965 ruled against Con Ed and the Federal Power Commission.

The judgment had national implications, as it became the basis for federal environmental policy. For example, the government passed the National Environmental Policy Act in 1969 (NEPA), signed January 1, 1970, and further policy acts would emerge over the next few years to protect air, water, and endangered species. NEPA also created procedures to study potential impacts of a proposal on an area’s aesthetics, ecology, and social services; these were to be considered as important as economic issues. And, most important for Scenic Hudson and other environmental non-
governmental organizations (NGO's), the right to question development proposals was broadened beyond appurtenant landowners to other concerned citizens.

Potential aesthetic impacts became important in 1979 during hearings before the U. S. Nuclear Regulatory Commission and the Power Authority of the State of New York for a proposed nuclear power plant in Greene County, within viewsheds of Dutchess and Columbia counties. The successful defeat of the proposed three-and-a-half-billion dollar power plant led to the development of Visual Impact Analysis by New York State as a component of its review process. Further refinement of aesthetic and visual impact analysis of local historical cultural landscapes would lead to the analysis of “community character,” which, along with computerized viewshed analysis and projected economic impacts became the significant arguments to defeat the proposed St. Lawrence Cement plant across the Dutchess County border near Hudson in Columbia county. The viewshed analysis prepared for the Town of Amenia and presented at this conference, is based, in part, on work done in 1986 by Stephanie Mauri of the Dutchess County Historical Society and is a fine example of combining both cultural and natural resource analysis. Developed over the past few years as part of the town’s NRI, and presented at today’s conference, it is a major step towards defining the town’s community character and will be an essential tool in the town’s development of a master plan as a “Scenic Protection Overlay District” that harmonizes both natural and cultural resources.

After the passage of NEPA, New York State, like most all other states, soon developed its own “little NEPA.” The explosion in the use of SEQR (State Environmental Quality Review Act) in the 1980s and 1990s necessitated an equally important need for natural resource data. To fulfill this need for local and regional planning, the EMC and affiliated CAC’s, with assistance in GIS mapping and public outreach by Cornell Cooperative Extension, compiled the first countywide NRI in 1985 and expanded it in 2010 for today’s presentation.

During the past three-decades, the DEC compiled, mapped and assessed natural resource data and identified certain specific areas for protection. These areas might contain flora or fauna on the state’s rare or endangered species list or composite micro-ecosystems where potential disturbance could seriously damage fragile energy pathways. In Dutchess County, the DEC has registered 31 “Critical Environmental Areas” as of 2010.
Meanwhile, the loss of biodiversity due to increasing development, specifically sprawl, necessitated updating of former town master plans. Researchers associated with both public and private agencies, especially Dutchess County Planning and Cornell Cooperative Extension, NGOs, colleges, and citizen groups, especially CACs through the EMC, worked to update the local and county NRI. They engaged in specific studies of natural landscape features that included a focus on the ecology, pollution, and cultural histories of the county’s waterways, such as Wappinger Creek, the Casperkill, and the Fall Kill. For example, Vassar geologists Jeffrey Walker and Kirsten Menking have led a team that has completed a comprehensive study of the Casperkill, while Marist biologist Thomas Lynch and his students have studied the Fall Kill’s stream ecology, hands-on efforts by local members of Clearwater and the Hyde Park CAC have worked on the stream’s natural wildlife corridor, and Vassar students mapped a greenway trail along the creek to include historic and cultural properties from the mouth at the Hudson northeast upstream to the National Park Service site at Eleanor Roosevelt’s Val-Kill. The county’s forested landscape is also being studied by biologist Margaret Ronsheim and geographer Mary Ann Cunningham using Edith Roberts’ work and map of the 1930s, along with the aerial survey of the county of that period and comparing it to recent aerial photographs, using GIS methodology, as well as research in the field locating specific plants and landscape features with GPS technology.

**Conclusion**

Since, according to geographer David Lowenthal, we are all “unavoidably implicated in environmental change, we must try to manage it despite knowing we will always make mistakes.” To assist in our efforts at managing our environment through better land use decisions, years of research by local citizens and scientists have resulted in useable natural and cultural resource inventories. Research specifically designed for local Natural Resource Inventories emerged during the late 1970s and early 1980s, and continues, as we have seen and heard this morning, up to today. Staff from the Dutchess County EMC and Cornell Cooperative Extension collated the data and maps collected by individuals and citizen groups in 1985. The new NRI that we have heard about today is a much anticipated and updated product, with extensive maps produced by 21st century GIS technology and the broad cooperation of natural scientists and conservationists from throughout the region. They follow in the footsteps of many who have worked in these vineyards before them. They have, as Aldo Leopold would have hoped, related to their environment as “something we can see, feel, understand, love, or
otherwise have faith in.” Dutchess County’s landscape, especially its role in creating a quality of life for its ecological and human inhabitants, will be indebted to their efforts. Thank you.

Notes*
I wish to acknowledge and thank the organizers of the Conference on Dutchess County’s Natural Resource Inventory (NRI), held on November 6, 2010, for the honor of giving the keynote address, especially Jeffrey Walker (Vassar College), Allison Chatrchyan and Emily Vail (both of Cornell Cooperative Extension Dutchess County), and Lalita Malik (Dutchess County Environmental Management Council). This essay is an extended version of my talk and retains much of its informal style with references to colleagues in the audience who have been involved in the scientific efforts to develop the 2010 NRI that was presented at the conference. I also accepted Jeff’s invitation to tell a few personal stories of my work in the region.

The following notes constitute a bibliographic essay in lieu of more formal footnotes for the reader to follow up on themes and information presented in this introductory sketch on Dutchess County’s history of environmental planning, with its focus on the development of natural and cultural resource inventories. Although the conference focused specifically on natural resource inventories, this essay suggests that the development of a conservation ethic, and hence a need to create NRIs for town and regional planning decisions, developed through an integration of a humanistic as well as natural scientific examination of the landscape.

Annotated Bibliography

Examples of early natural history narratives, including observation of deforestation’s effect of soil by Crevecoeur in 1782, the geologist Sir Charles Lyell of the Palisades in 1841, and geologist W.W.


A discussion of the geological research conducted by Vassar College’s professors of natural history and geology is sketched in Harvey K. Flad, “Earth Science and Geography Department History” on Vassar College’s website devoted to the college’s sesquicentennial in 2011 at [http://150.vassar.edu/histories/history-of-earth-science-and-geography-at-vassar-college/index.html](http://150.vassar.edu/histories/history-of-earth-science-and-geography-at-vassar-college/index.html). Volumes of the reports for the Hudson River Valley Commission will be found in most regional research libraries (Vassar, Marist, or Adriance in Poughkeepsie). *The Role of Plant Life in the History of Dutchess County* by Edith Adelaide Roberts and Helen Wilkinson Reynolds (Poughkeepsie, NY: authors, 1938) is housed in Special Collections, Vassar College.

Franklin Delano Roosevelt as conservationist is examined in essays in Henry L. Henderson and David B. Woolner, eds., *FDR and the Environment* (NY: 2005). Comments on FDR’s influence on the landscape of Dutchess County and excerpts from his letter about his oak trees are found in Harvey K. Flad and Clyde Griffen, *Main Street to Mainframes: Landscape and Social Change in Poughkeepsie* (Albany: State University of New York Press, 2009).

Photographs of the Stissing Mountain display and of aspects of Pine Plains and Dutchess County ecological history are displayed on the American Museum of Natural History in New York’s website ([http://www.amnh.org/](http://www.amnh.org/)).

Copies of the regional and county planning reports can be found in the library of the Dutchess County Planning Department and at most local libraries, while the Landmarks study of historic
architecture is also in the Dutchess County Historical Society library. Poughkeepsie resident Ralph Arlyck’s national award-winning film “Hyde Park” offers a unique perspective on small town land use issues and the personalities involved in local planning. Robert C. Weaver’s quote on “comprehensive area-wide planning” and Klara Sauer’s recollection on the origins of the Greenway are reported in Flad and Griffen’s *Main Street to Mainframes* (op.cit.). The role of Hudson River Heritage in developing cultural resource inventories of the Estates District is noted in Robbe Stimson and Harvey K. Flad, “Preservation of an Historic Rural Landscape: Roles for Public and Private Sectors,” in *Farmsteads & Market Towns: A Handbook for Preserving the Cultural Landscape* (Albany: Preservation League of New York State, 1982). The Hudson River Shorelands Task Force in 1979-80 worked to get all affected municipalities to sign on to a compact to recognize the historic district as they planned for development through new zoning and master plans. This was rather difficult, for, as some in the audience at the conference who have been around for a while may recall, the very idea of regional planning was considered a “socialist plot” for many towns and villages in the late 70’s and early 80’s. However, the Task Force, working with some of the local citizen-members on their town planning boards, planners from Dutchess County Planning Department and community development specialists from Cornell Cooperative Extension, was eventually successful, and the joining of the northern Dutchess communities together into a “compact” would become a model for the Greenway Compact a decade later. As Stuart Findlay from the Cary Institute of Ecosystem Studies remarked at the conference, “Local Control requires Local Responsibility.”

David Lowenthal’s remarks to accept our limits in managing the environment come from his essay “Environmental History: From the Conquest to the Rescue of Nature,” in Alexander B. Murphy and Douglas L. Johnson, eds., Cultural Encounters with the Environment (NY: Rowen and Littlefield, 2000). Aldo Leopold’s quotation is from A Sand County Almanac (op.cit.).