

Case Profile Series on
Land Trusts as Climate Change Solution Providers

Scenic Hudson: Making the Hudson Valley a Model for Responding to the Climate Crisis



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The International Land Conservation Network is a program of the Lincoln Institute of Land Policy.

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CASE OVERVIEW FOR EDUCATORS

Topic: Orienting Conservation Strategies Towards Climate Change Adaptation and Mitigation

Subtopics: Renewable Energy, Carbon Sequestration, Sea-Level Rise, Regenerative Agriculture, Climate-Smart Conservation, Scenic Hudson

Timeframe: 2010 to 2021

Primary Learning Goals: (1) Better understand how a leading regional land trust is developing and implementing a comprehensive, climate-focused land conservation strategy and policy agenda. (2) Move through a case analysis that considers, in sequence, situation, challenge, proposed solutions, implementation, and results.

Secondary Learning Goals: (1) Develop insights into how civic sector leadership, working in collaboration with a range of stakeholders including farmers, renewable energy developers, state and local governments, residents, and communities, is building regional climate resilience. (2) Gain a high-level appreciation of the interconnected roles of advocacy, science-based planning, and land conservation strategies.

Primary Audiences: (1) Land Conservation organizations and practitioners. (2) Renewable energy project developers. (3) Public decision-makers and regulators. (4) Staff, directors and supporters of NGOs, community organizations, (5) climate policy analysts and advocates, and (6) interested members of the general public.

Prerequisite knowledge: General knowledge regarding climate change and the conservation of land and biodiversity.

Summary: This case focuses on how a regional land conservation organization, Scenic Hudson, is leading efforts to implement and inform state-level climate action plans and priorities through advocacy, science-based land conservation strategies, and well-sited renewable energy facilities. This initiative helps stakeholders including farmers, residents, renewable energy project developers and others to implement policies and practices that build regional resilience to the impacts of climate change. The case assists land conservation organizations large and small, , legislators and regulators, and other interested parties in a deeper understanding of the ways in which land conservation strategies can address and orient towards climate change mitigation and adaptation, and bring science-based climate considerations into planning. The development of the initiative itself, and the multi-sector partnerships required to make it successful, has taken place over more than a decade. It may be adapted to or inform climate change and land conservation policy and practice in many locations around the globe, from Europe to Oceania.

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Executive Summary

The Hudson Valley in New York State is particularly vulnerable to the impacts of climate change. Its biodiversity, its economy and the life of its communities will all need to adapt to the steadily accumulating rise of tidal flows, to hotter summer temperatures, to the sudden appearance of new disease vectors and invasive species, and to myriad other anticipated and unanticipated changes associated with climate change. In this context, the many riverfront communities located up and down the valley will experience dramatic demographic change and spatial dislocations due to the Valley's immediate proximity to New York City. The region's farms and biodiversity habitat will likely be vulnerable to inundation, fragmentation, and under-regulated development. Without careful planning and the long-term protection of its storied landscapes, the region's ability to be resilient to intensifying climate impacts may markedly decline.

To its credit, the New York State government is increasingly alert to these threats and is working to address them. For example, New York is a founding member of the U.S. Climate Alliance, launched in June 2017. As a leader of this group of 25 states promising to adhere to the 2015 Paris Agreement on climate change, New York has committed to the Climate Leadership and Community Protection Act (CLCPA), committing New York to implement the country's most aggressive clean energy and climate action plan. It will be a significant challenge for Hudson River communities to live up to the ambition and scale of the state's climate-related goals.

Scenic Hudson, founded in 1963 as one of the nation's first regional environmental advocacy and land protection organizations, is particularly well-positioned to help individuals, communities, and institutions in the Hudson Valley find solutions to threats of climate change as well as the regulatory requirements of the state. It can and does accomplish this goal through working to realize its vision of the Hudson Valley as "a community of informed and engaged citizens working to make the region a model of vibrant riverfront cities and towns linked by inviting parks and trails, beautiful and resilient landscapes, and productive farms."¹ Scenic Hudson leads in the climate change area by: advocating for policy at the local, state and national levels; by devising science-based strategies for protecting lands critical for higher biodiversity resilience, human resiliency, and well-sited renewable energy facilities; and by putting those strategies into practice, on the ground, in the Hudson Valley.

Working on climate change is a complicated, dynamic, and emotionally charged task. In its own climate change work, Scenic Hudson specializes in developing resources to help its staff, as well as conservation partners in the valley, to bring science-based climate considerations into planning and site selection processes, and to help drive the responsible implementation of prioritized projects. One example of such a prioritized project is the protection, in 2017, of 132 acres adjacent to Scenic Hudson's RamsHorn-Livingston Sanctuary. In leading this effort, the land trust ensured that "this land will continue sustaining one of the most unique and unspoiled habitats along the Hudson River estuary and will help the region be more resilient to the impacts of climate change."² The decision to protect the site was shaped in part by the fact that

the property ranked highly in Scenic Hudson's new Hudson Valley Conservation Strategy, due to its importance in the estuary's adaptation to sea level rise and climate change. Scenic Hudson developed the HVCS—the next generation of its strategic ranking system used in its Saving the Land That Matters Most initiative—to pinpoint properties whose conservation will maximize land investments by achieving multiple benefits: sustaining biodiversity, increasing resilience to rising sea levels and other climate change impacts, [and] securing the pathways many species depend on for survival and preserving working farmland.³

Scenic Hudson has similarly used its *Roadmap to a Clean Energy Future* and *Clean Energy, Green Communities* guidebooks,⁴ to assist residents, farmers and renewable energy developers in the valley to site and design projects that add to the state's renewable energy portfolio while minimizing

impacts to areas of natural beauty by avoiding designated scenic areas, keeping [the projects] below tree lines and including robust vegetative screening, [as well as combining] solar energy projects with other uses, such as pollinator-friendly plantings, livestock grazing or crops.⁵

For example, in February 2020, Cypress Solar announced the completion of the Bogart Solar project in the town of Catskill in Greene County, New York. "Capable of generating enough power for more than 300 homes annually, Bogart... [features] 2.5 acres of pollinator-friendly habitat."⁶ Scenic Hudson could share in the celebration of this announcement because its work had resulted in modifications in the design that ensured it would not interrupt the spectacular viewshed of the artist Thomas Cole's home known as Cedar Grove, now a National Historic Site. As renewable energy siting remains a significant challenge to project developers hoping to diversify New York's electrical energy capacity, Scenic Hudson continues to advocate for streamlined facility-siting protocols that also minimize impacts to significant environmental resources.

In addition, Scenic Hudson is at the forefront of efforts to better understand how local farmers in the Hudson Valley can change their farming practices to reverse the flow of carbon from their farms. The goal is to transform these farms from carbon sources that release CO₂ and other greenhouse gases from soils into the atmosphere, to carbon sinks that instead store net volumes of carbon within their soils and woodlands. Scenic Hudson has partnered with Hudson Carbon, led by Abby Rockefeller and Ben Banks Dobson, who are implementing regenerative agriculture practices and rigorously monitoring them at the Rockefellers' 2,000-acre farms to better understand their efficacy in improving farm soil carbon sequestration. The Scenic Hudson Soil Lab, located at Abby Rockefeller's Old Mud Creek Farm, was established with funds provided by the Scenic Hudson Land Trust in the purchase of development rights on the farm in 2015. Scenic Hudson also is taking the lead in convening the Northeast Carbon Consortium (NECA). The NECA is bringing together farm, forest and wetland managers, scientists and public policy experts in regenerative practices to share data and advance policies that will ultimately provide

compensation and incentives for landowners implementing regenerative practices.

Through its thoughtful advocacy, science-based planning, and land conservation strategies, Scenic Hudson continues to enhance its reputation as an exemplary model for land trusts and environmental organizations in the US and around the world that are working to address climate change.

Introduction and Context

Storm King Mountain is located along the banks of the Hudson River just south of Cornwall, New York. Across the river lies Breakneck Ridge, which together forms the historically significant and picturesque narrows of the Hudson Highlands. The potential destruction of this iconic mountain and the marring of this uniquely beautiful area brought together a group of activists in 1963 to form the environmental organization known today as Scenic Hudson. The six citizens who started the group were motivated by their opposition to the Storm King hydroelectric project proposed by Consolidated Edison and approved by the Federal Power Commission. A lawsuit, brought against the Federal Power Commission by these citizens, resulted in the Scenic Hudson Decision.⁷ This U.S. Court of Appeals decision gave Scenic Hudson legal standing and created a powerful precedent that enables citizens and citizen groups to bring lawsuits even when they incurred no direct economic harm (Lambert 2014). With this win, “Scenic Hudson is credited with launching the modern grassroots environmental movement and winning the right of citizens to speak out and initiate lawsuits to protect their environment.”⁸ With their standing legitimized, a seventeen-year legal battle ensued, which ultimately resulted in defeat for the proposed powerplant. The Scenic Hudson Decision is also considered the foundation of this country’s seminal environmental statute, the National Environmental Policy Act, and a massive body of law ensuring citizens have a voice in government decisions affecting the environment.

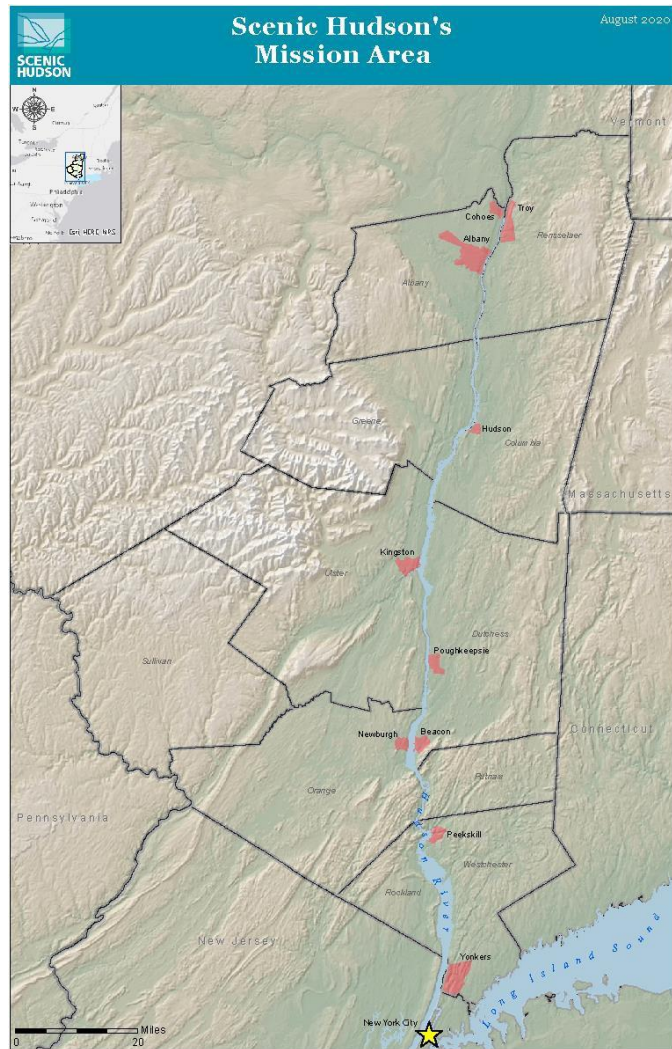


Figure 1: Scenic Hudson's Mission Area in the Hudson Valley, NY

Today, Scenic Hudson is an environmental advocacy organization, a source of scientific research and planning insight, and a land trust. Its mission is to “preserve land and farms and create parks that connect people with the inspirational power of the Hudson River, while fighting threats to the river and the natural resources that are the foundation of the valley’s prosperity.”⁹ Scenic Hudson works in all 10 New York counties that border the Hudson River from Yonkers in the south to Troy in the north. The valley is generally divided into three regions; the lower Hudson Valley is typically considered part of the downstate New York region due to its geographical and cultural proximity to New York City; the Mid-Hudson region is a mix of urban areas, waterfront cities, rural villages, farmlands, and forests; and the upper Hudson Valley region is characterized by small glens and valleys surrounded by the Catskills to the west and the Berkshire Mountains to the east. The Hudson Valley’s spectacular beauty, rich history, and ecological and agricultural resources are considered national treasures and have earned the region Congressional designation as a National Heritage Area.

A long and strong tradition of agriculture exists in the Hudson Valley, and today nearly 18 percent of the land base is farmland.¹⁰ The valley’s family farms, some dating back three centuries, feed Hudson Valley residents and are also part of New York City’s “foodshed,”¹¹ a term used to describe the geographic location that produces the food for a particular population. The proximity to New York City’s markets and restaurants makes Hudson Valley farmers well-positioned to lead in the farm to table movement, the buy-local movement, and to advance sustainability measures promoted by those efforts. This dynamic allows for the smaller size farms that dot the landscape to survive and thrive. The average Hudson Valley farm is estimated to be about 150 acres, nearly half the size of farms in other regions of the state. Farmers raise cattle, ducks, chickens, goats, sheep, and various crops: vegetables, corn, lettuces, berries, and apples, among others.

The Hudson River, a dominant feature of the region, runs 315 miles, originating in the Adirondack Mountains of upstate New York, and flowing southward through the Hudson Valley to the upper New York Bay, eventually draining into the Atlantic Ocean at New York Harbor. The Hudson, a tidal river, or estuary, is influenced by ocean tides all the way to Troy, which is north of Albany. The river contains varying amounts of saltwater as far north as Newburgh. Geologists refer to the Hudson River as a fjord, a feature carved by glaciers to create a long, deep, and narrow body of water that reaches very far inland.

One of the most species-rich regions in the Northeast, the Hudson Valley contains a remarkably broad gradient of habitats for its size, including globally significant “hot spots” of turtle, salamander, and dragonfly diversity. It is an important breeding area for migratory and nonmigratory bird species and home to nearly 200 species of fish.¹² The varying topography and diversity of habitats found in the region contribute to the Hudson Valley’s biological richness. It also indicates an ample opportunity for protecting natural lands that will better enable species to adapt to the changing temperature and moisture regimes brought on by climate change.

Scenic Hudson considers climate change to be the biggest threat to the Hudson Valley region. Acting to address this threat, Scenic Hudson looks both inward and outward to develop and implement a comprehensive approach. Climate change is a dynamic space, and in practice, Scenic Hudson is both reacting to and taking the lead in this work. Overall, the organization's goal is to create a national model for facilitating climate adaptation and mitigation at the regional scale. With this work, Scenic Hudson continues to operate by a set of values laid down by one of its co-founders Frances "Franny" Reese, whose motto was "Care enough to take action. Do your research, so you don't have to backtrack from a position. And don't give up!"

Problem Statement

Climate change is the most significant environmental threat of our time. In the Hudson Valley, climate change threatens the region's biodiversity, economy, and communities. In addition to impacts predicted for the greater Northeast region, the Hudson Valley is particularly vulnerable to sea-level rise due to the Hudson River system's tidal nature. Higher water has significant implications for the many riverfront communities located up and down the valley, and for the 7,000 acres of tidal wetlands vital for the species and functions of the Hudson River Estuary.

Furthermore, due to the proximity of New York City, the region has been one of the fastest-growing areas in the Northeast for the past two decades.¹³ This immense development pressure is threatening farm viability, fragmenting critical habitat, and weakening the region's resilience to endure worsening climate impacts.

The three most significant climate hazards projected to affect Hudson Valley residents are increasing temperatures, rising sea levels, and changing precipitation patterns. Since 1970, temperature increases in New York have surpassed national and global averages. These increases pose challenges to human health, increase electricity demand, and impact many industries important to land trusts, including tourism, recreation, and agriculture. The average annual temperature in the Hudson Valley is projected to increase four to six degrees by mid-century and as much as 11 degrees by the end of the century (Hudson River Estuary Program 2018). Heat waves are of particular concern in more urbanized areas, where the urban heat-island effect can amplify temperatures. By mid-century, the Hudson Valley could annually experience three to 12 days above 95 degrees, and four to seven heat waves of increasing length. By the end of the century, if we continue the current high greenhouse gas emissions scenario, the Hudson Valley climate will resemble Georgia today.¹⁴

Since 1900, sea level in the lower Hudson and New York Harbor has risen 13 inches. Projections for additional sea level rise could be 30 inches by mid-century and as much as 75 inches by the end of the 21st century.¹⁵ The amount of rain falling in heavy downpour events has increased 71 percent since the 1950s, and projections indicate total annual precipitation could increase by 12 percent mid-century and 21 percent by 2100.¹⁶ Storm surge from more frequent and intense hurricanes and sea-level rise will exacerbate flooding along the Hudson River while intensifying precipitation will increase flooding along tributaries. Flooding threatens homes as well as many

important assets like transportation infrastructure, businesses, recreational facilities, sewage infrastructure, roads, etc.

As a founding member of the U.S. Climate Alliance, the government of New York has demonstrated a strong commitment to addressing climate change. This leadership presents both an opportunity and a challenge. The financial and legislative support for actions urgently needed to address climate change is an opportunity. The challenge comes from the ambition and scale of the goals and the short timeline for implementation. In 2019, Governor Andrew Cuomo signed the Climate Leadership and Community Protection Act (CLCPA) into law, committing New York to implement the country's most aggressive clean energy and climate plan. Also touted by the state as the most rigorous of any major economy in the world, the CLCPA, among other things, requires that 70 percent of electricity generation be from renewable energy sources by 2030 and 100 percent of electricity generation be carbon-free by 2040.

As an organization with the skillset to influence policy, planning, and on-the-ground conservation of natural resources, Scenic Hudson is well-positioned to lead in this space. Scenic Hudson has a strong tradition in science and advocacy, is well-respected, well-funded, and employs highly capable staff. Tenacity is embedded in Scenic Hudson's DNA, and this has enabled it to take the challenges of climate change and use it to lift partners and the region up as a model for advancing a smart renewable energy transition, prioritizing conservation as a climate adaptation strategy, and maximizing nature's ability to sequester and store carbon.

Strategies, Options, Decision Making and Implementation

In 2017, Scenic Hudson cemented its commitment and focus on climate change by adopting a new strategic plan for the organization. The plan included an overt stand on climate change. In part, this was driven by the perceived inaction that the organization's leaders saw at the federal level to address the climate crises, and the opportunity they saw for meaningful action at the state level. Through the new plan, Scenic Hudson refined its mission statement and created a vision for the broader Hudson Valley community to become a model for a regional approach to preparing for and lessening the threats posed by climate change.

This plan built on the organization's core strengths of land preservation, park creation, and advocacy and added additional focus on three emerging themes:

1. promoting regional identity through a shared sense of place and stewardship;
2. building community and ensuring that their work benefits all the region's citizens, both urban and rural; and
3. strengthening resiliency in the face of climate change by furthering climate change adaptation and resilience in its land conservation and community planning work and developing new climate mitigation policies consistent with its conservation values.

To advance this focus, the organization developed strategies for protecting lands critical to biodiversity's resiliency and developed siting principles and design guidelines to support well-sited renewable energy facilities. Today, Scenic Hudson is actively working to advance climate-smart agricultural policies and facilitate carbon sequestration and climate change resilience in land use decision-making. In Hudson Valley cities it is also creating urban farms, planting trees, and planning a green-design sustainable headquarters, in concert with advancing a climate change and urban justice agenda. Scenic Hudson is also leading a campaign to stop a fossil-fueled power plant proposed on the waterfront near the city of Newburgh. The facility would dramatically increase carbon emissions, while disproportionately showering low-income people of color with toxic air emissions.

Scenic Hudson began addressing climate change impacts in its program as early as 2010, when it published an award-winning planning guide for "creating healthy and prosperous communities" entitled *Revitalizing Hudson Riverfronts*. According to Scenic Hudson's website, this was one of the first handbooks in the U.S. offering waterfront municipalities strategies to prepare for rising sea levels. In 2011 and again in 2012, Hurricanes Irene and Sandy caused massive flooding that devastated the region. Hurricane Sandy's arrival not only coincided with high tide but with a full moon and an elevated spring tide.¹⁷ These higher waters provided communities and policymakers with a glimpse of how the stronger storms predicted under a changing climate could interact with rising sea levels. This experience solidified the reality of the threat and reinforced the need for communities to act. When Scenic Hudson began working on this issue, there were no sea-level rise maps available. In 2013, Scenic Hudson developed and launched an interactive sea-level rise web map to help riverfront communities visualize the impacts of various sea-level rise scenarios. The map and the planning guide provide riverfront communities with tools they can use to plan for future impacts of sea-level rise.

Scenic Hudson went on to convene Sea Level Rise Task Forces in River cities – including Catskill, Kingston, and Piermont – employing the sea level rise mapper to guide local leaders' actions to plan for a future under various climate change scenarios. The task forces included elected officials, planners, business leaders, the Department of Environmental Conservation, and an organization assisting to facilitate the series of meetings. The results were changes in local ordinances, master plans, and zoning documents that reflect the areas where future flooding indicated the need for protective measures. The City of Kingston applied for and received state grants to protect its flood-prone wastewater treatment plant from inundation.

Under the Leadership of Scenic Hudson Land Trust Executive Director Steve Rosenberg and Land Preservation Director Seth McKee, the organization has protected more than 40,000 acres, including over 1,000 acres it currently owns and manages along the river's edge. The sea-level rise mapping tool advanced Scenic Hudson's own internal planning, management, and acquisitions. This analysis has culminated in the development of the Protecting the Pathways Initiative: to educate policymakers and the public on the impacts and opportunities associated with sea-level rise in the Hudson River estuary, Scenic Hudson developed an interactive guide for a science-based process that identifies the most critical tidal wetlands to protect in the face of

sea level rise. The premise is that wetlands will either be lost, persist as wetlands, or move as water levels rise. Wetlands will be lost if natural or human-made barriers prevent expansion, movement, or migration of the wetland. The Protecting the Pathways framework identifies critical migration pathways and tidal wetland systems projected to gain the most over time. This tool helps prioritize the investment of limited resources toward those projects or strategies that will provide the most significant long-term benefit. This framework was well received and provided agency officials with new data and a process for environmental review now embedded in state policy. After the success of Scenic Hudson's sea-level rise work and the adoption of its new strategic plan, Scenic Hudson's staff began to bring climate change considerations into new areas of work.

Strategic Conservation

In 2017, with the support of the Doris Duke Charitable Foundation, Scenic Hudson developed the Hudson Valley Conservation Strategy (HVCS). The HVCS “identifies networks of conservation areas that add up to more than the sum of their parts, and charts the most efficient way to conserve those places critical for helping the region withstand the impacts of a warming climate.”¹⁸ The HVCS analysis brings climate resilience concepts into conservation decision-making to maximize the multiple benefits of land investments. It complements and builds upon Scenic Hudson’s existing conservation strategies, including the tidal wetland adaptation framework and a previously developed Hudson Valley-New York City Foodshed Conservation Plan. It was also one of the early examples of a land trust integrating The Nature Conservancy’s Resilient Sites for Terrestrial Conservation data with other locally relevant data sources, such as productive farmland, to create actionable goals for strategic conservation investments.

In all, the strategy points to about 760,000 acres in the 11 counties of the Hudson Valley that represent the best potential conservation investments for achieving a resilient, functional, and productive landscape.¹⁹ The strategy aims to guide coordinated actions of Scenic Hudson and its conservation partners in the region to align investments and achieve a more significant collective impact. One outstanding example is the RamsHorn-Livingston Marsh project (see Box 1).

Box 1: Science, Conservation Planning and Project Implementation: Scenic Hudson’s RamsHorn Livingston Tidal Estuary Project



Ramshorn Marsh (Scenic Hudson)

In 2017, Scenic Hudson acquired 132 acres adjacent to its popular RamsHorn- Livingston Sanctuary, a nature preserve it co-owns with Audubon New York. The property features more than 3,400 feet of unique habitat along the shore of the Hudson River estuary and a significant portion of Ramshorn Marsh, which contains the largest freshwater tidal swamp along the Hudson River. Due to the presence of irreplaceable and globally rare habitat and its importance in the estuary’s adaptation to rising sea levels and climate change, the property was identified as high priority for protection in Scenic Hudson’s Hudson Valley Conservation Strategy (HVCS) for its benefits for people, wildlife, and climate.

The village and town of Catskill is adjacent to Ramshorn Marsh, which plays a critical role in mitigating floodwaters and wave impacts on land during storms. The conservation of the large tidal wetland at Ramshorn Marsh and its immediate surroundings is key for enabling its many amphibian, reptile, and plant species and its many waterfowl to adapt and migrate inland in response to sea level rise.

Protecting the tidal wetland stores large quantities of carbon, and helps maintain the river’s water quality, which will improve the long-term resilience of Ramshorn Marsh and the entire Hudson Valley.

Renewable Energy Siting

Before New York’s 2019 landmark climate legislation, the state worked to advance a 2016 Clean Energy Standard of 50 percent renewable energy by 2030. Since that time, renewable energy projects subject to review by New York’s siting board, which are facilities larger than 25 megawatts, have faced significant public opposition and delay. As of September 2019, only three new renewable facilities had been approved, and none had been constructed.²⁰ This lack of progress and the sheer ambition of the new Climate Act goals mean that all scales of renewable energy projects must be deployed to meet the state’s targets.

Land trusts can play a critical role in the siting and design of new renewable infrastructure to ensure that their benefits are maximized and potential impacts are minimized. In New York, major hydropower resources and viable land-based wind resources are in the northern and western regions of the state – hundreds of miles from the high-demand of the New York City metropolitan region. Some believe the energy transmission system is insufficient to transport existing upstate renewables downstate while accommodating additional capacity. Construction of new high-voltage transmission lines outside of existing rights-of-way is subject to intense public opposition.²¹ These and several other factors have led Scenic Hudson to take a public stand supporting appropriately sited solar facilities of all sizes in the Hudson Valley (see Box 2).

Scenic Hudson’s central goal for its renewable energy work is to establish the Hudson Valley as a regional model to promote and accelerate renewable energy development while implementing siting techniques that avoid and mitigate impacts to natural resources. To advance this goal, Scenic Hudson has participated as a stakeholder in numerous discussions on renewable energy development, published the *Clean Energy, Green Communities* guide to siting renewable energy, and convened a sold-out Solar Smart Hudson Valley symposium.²² It has also led efforts to encourage Westchester County villages to join

Box 2: Advocacy and Multi-Purpose Conservation Project Implementation: the Bogart Community Solar Project in the Town of Catskill, Greene County, New York



In 2020, a partnership between Scenic Hudson, the Greene Land Trust and solar developer Cypress Renewables came to fruition with the launch of Bogart Solar, a 3-megawatt community solar project in Catskill, New York.

Bogart Solar is the first community solar project in Catskill, and is capable of powering more than 300 homes annually. It will feature 2.5 acres of pollinator-friendly habitat and included nearly \$10,000 in funding to restore floodplain forest and build a boardwalk to enhance public access to Scenic Hudson’s Mawignack Preserve, which was completed in 2019.

The project serves as an exemplary case of how partnerships between land trusts and renewable energy facility developers are critical to achieving climate resilience, in the Hudson Valley and beyond.

a county-sponsored program to convert from fossil fuel residential energy to heat pumps and solar.

In 2020, Scenic Hudson will release a new solar zoning handbook and an online GIS-based solar siting decision support tool to empower communities to take advantage of their solar energy resources through enforceable plans and regulations. Together these resources encourage a “smart from the start” approach. This type of strategy can: help support stakeholder decision-making; bring awareness to developers of local values and community concerns; facilitate early public involvement to minimize time, costs, and complexities of environmental analysis; and enable municipalities to plan proactively for renewable development.²³

A critical piece of Scenic Hudson’s work in this arena is its advocacy for expediting approvals of well-sited and low impact renewable energy projects. In September 2020, the newly-created Office of Renewable Energy Siting issued draft permitting rules which outline a siting process that will accelerate clean energy development to reach New York’s state-mandated carbon reduction laws. The rules incentivize projects that are sited and designed to avoid, minimize, or mitigate impacts to threatened and endangered species, wetlands and forests, as well as to viewsheds and community character. Scenic Hudson has actively commended this effort, with president Ned Sullivan noting the importance of a process “that acknowledges the important climate benefits of clean energy, and that renewable projects should be treated differently than polluting fossil-fuel electric generation projects.”²⁴ Scenic Hudson continues to advocate for accelerated renewable energy development throughout the state of New York that is consistent with conservation and community goals.

Regenerative Agriculture

In support of efforts to make the valley’s farming sector more resilient to climate change, Scenic Hudson is working to promote regenerative agricultural techniques that maximize soil carbon and increase farm productivity and resilience to climate impacts. To inform this work, Scenic Hudson commissioned a study that included feedback from farmers and other agricultural stakeholders to identify the most promising opportunities to promote on-farm greenhouse gas mitigation. The subsequent report, *The Climate-Resilient Agriculture Initiative: Cultivating Climate Solutions in the Hudson Valley*, identified a suite of potential pilot projects to guide Scenic Hudson’s implementation of its Climate-Resilient Agriculture Initiative. The recommended projects aim to address barriers and build on opportunities to advance soil health in existing federal and state conservation incentive programs. They include advocating for climate-resilient conservation incentives, increasing farmer participation, and developing community conservation programs that generate local knowledge and increase local capacity for innovation.²⁵

Scenic Hudson supported the implementation of a state budget initiative authorizing the Carbon Farming Pilot project to study the carbon sequestration potential of on-farm best management practices. Led by local Soil and Water Conservation Districts, the pilot will measure, in six-month

intervals, the carbon and water holding capacity of at least eight commercial farms and orchards over two years (State of New York 2018). To accelerate the implementation of natural climate solutions on working and managed lands in the Northeast, Scenic Hudson is supporting the Northeast Carbon Alliance, which consists of a dynamic group of land managers, scientists, and public policy advocates working together to explore “how land-management practices on farms, in forests and wetlands could reduce – and even reverse – the release of climate-warming carbon and methane into the atmosphere”²⁶ (See Box 3).

Box 3: The Hudson Soil Lab at Scenic Hudson’s Old Mud Creek Farm and the Northeast Carbon Alliance



*Old Mud Creek Farm, Livingston, NY
(Photo: Scenic Hudson)*



*Scenic Hudson Soil Laboratory, Livingston, NY
(Photo: Scenic Hudson)*

In 2015, Scenic Hudson and Columbia Land Conservancy partnered with landowner Abby Rockefeller to protect the nearly 390-acre Old Mud Creek Farm in Livingston, New York, for agricultural use. Conserving Old Mud Creek Farm was one of Scenic Hudson’s highest priorities for its NYC-Hudson Valley Foodshed Conservation plan, helping the region’s farms to sustain an agricultural economy, demonstrating the effectiveness of regenerative agriculture as a climate change resilience strategy, and retaining a secure source of fresh, local food for the Hudson Valley and New York City.

Ms. Rockefeller and Ben Banks Dobson have restored the farm’s soil health after years of pesticide experimentation by its previous owners. The proceeds of Scenic Hudson’s purchase of development rights on the Old Mud Creek Farm were used to create the Scenic Hudson Soil Laboratory on the farm and another on-farm soil laboratory in Livingston, to seed the non-profit organization known as Hudson Carbon. These two efforts track and share data on regenerative farming and laid the foundation for the creation of the Northeast Carbon Alliance, whose mission is to accelerate the implementation of natural climate solutions on working and managed lands in the Northeast through information exchange, science, and public policy.

The Consortium gathers and shares scientific data on the effectiveness of these practices across ecological systems in the Hudson Valley and beyond, to accelerate their adoption and implementation. Scenic Hudson President Ned Sullivan has led the three Northeast Carbon Alliance meetings to date, with the latest virtual meeting drawing over 50 participants from the Hudson Valley, Massachusetts, and New Jersey. Individuals from leading research farms – Stone Barns Center for Food and Agriculture, Duke Farms, and Hudson Valley Farm Hub – have all given presentations to the group, as well as experts and scientists from the Marine Biological Laboratory at Woods Hole, Black Rock Forest Consortium, Cary Institute of Ecosystem Studies, Woods Hole Oceanographic Institute, Cornell, and the Hudson River National Estuarine Research Reserve, among others.

Results

Scenic Hudson's impact can be measured through a variety of lenses. The first is the number of conservation projects or the amount of funding secured for the region to advance climate actions. The second is the existence of regional networks designed to advance climate initiatives. The third is the strength of the policy priorities adopted at the local, state, and national levels.

Scenic Hudson's adaptation work on sea level rise has resulted in the completion of eight projects that protect important tidal wetland resources or future migration spaces. It is also being used to identify critical state-owned properties that are not yet permanently protected. These are important to flag as easy "win-win" conservation investments and can prevent these lands from being transferred into private ownership without conservation measures in place. One of the most impactful results of this work is that Scenic Hudson's sea level rise mapper is now embedded in state-level policy through a requirement to evaluate the impacts of sea-level rise in New York's environmental review process. Before the tool was available, the state did not have the data or the processes in place to evaluate this. Today, the movement to advance the flood resilience of communities along the Hudson continues to develop through the work of the Flood Resilience Network.

This effort started in 2015 in community-based task forces that evolved into a collaboration among the riverfront communities of Kingston, Piermont, and Catskill. This initiative continues to grow. The initial communities participating are all projected to be severely impacted by climate change-induced flooding and have completed waterfront vulnerability assessments. The Hudson River Estuary Program, Scenic Hudson, and the Consensus Building Institute support the Flood Resilience Network. In just a few short years, participating communities have received more than \$7 million in grants for resilience projects, upgraded critical infrastructure such as wastewater treatment plants and waterfront access roads, and produced and distributed flood preparedness guides for residents and businesses.²⁷

Since establishing the Hudson Valley Conservation Strategy in 2017, Scenic Hudson has completed 16 acquisitions of lands ranked as highly resilient, including nine fee acquisitions and seven conservation easements, which conserved 3,260 acres. Approximately \$12 million in funding and matching support has been invested in this effort by private foundations, such as the Doris Duke Charitable Foundation and other private donors. As designed, the HVCS serves as a regional resource and a national example. Many of the land trusts who also service the Hudson Valley have utilized the tool to support and prioritize their work, further amplifying the strategy's reach. Scenic Hudson's approach to a regional conservation plan has also been a model for land trusts, and conservation efforts across the county and staff have presented this at Rally, the National Land Conservation Conference, and at the National Adaptation Forum.

As a result of Scenic Hudson and other regional partners, the Hudson Valley has become a leader in implementing on-farm practices that improve soil health. This began as a legislative initiative sponsored by New York State Assembly Member Didi Barrett, which focused state legislators'

attention and resulted in the state passing a budget earmarking funds to develop a pilot climate-resilient farms program. The budget included up to \$200,000 in funding for the Cornell Soil Health Program for research and education on soil resiliency and mitigation practices, and up to \$400,000 to implement the Hudson Valley Carbon Farming Pilot project.²⁸ The pilot's goal is to understand further the benefits of regenerative agricultural practices and the needs of farms so the state can do more to advance soil health and support farmers working to reduce the contribution of agriculture to climate change.

Scenic Hudson's work on renewable energy siting has undoubtedly increased awareness and resources available to stakeholders, local decision-makers, and renewable energy developers. Scenic Hudson anticipates that this will help to meet ambitious clean energy goals by giving communities the information necessary to integrate solar energy projects into the landscape through smart siting and planning. One success story is ELP Greenport Solar, a 5 MW community solar project located on vacant land near the City of Hudson. With input from Scenic Hudson, the design and layout of the project were aligned with the principles in the siting guide, eliminating impacts to the viewshed of the Olana State Historic Site and the nearby National Historic Landmark Dr. Oliver Bronson House. Project construction was completed in early 2020.

Analysis and Implications

Scenic Hudson's approach to addressing climate change is guided by organizational principles and bolstered by the skills of its most important asset, its staff. Scenic Hudson uses a science-based approach to make conservation decisions. It invests the time and energy into staying up to date on the latest science and standards for addressing climate change; has the in-house expertise needed to analyze conservation opportunities that advance its climate goals; and is willing to create, share, and train the broader community on decision support tools to guide implementation. By empowering partners, communities, and other natural resource professionals with the information and tools needed to target limited resources, Scenic Hudson has created a community that looks to the organization as leaders and works toward a shared vision with high impact.

Many external factors have influenced the strategies that Scenic Hudson has chosen to pursue along this journey. The largest driver to date has been the state of New York, its climate goals, and the processes that have been put in place to achieve these goals. New York is learning as they go and trying to adjust along the way in hopes of achieving success. When New York established the first Clean Energy Standard in 2016, it mandated that 50 percent of the state's electricity should come from renewable energy sources by 2030. At the time, it was abundantly clear that the approval process for permitting new major electric generating facilities, established through Article 10 of the Public Service Law, needed to become more efficient and less expensive. This recognition by all parties, including state agencies, local governments, land conservation and environmental organizations, and the renewable energy industries, provided an opportunity to develop a comprehensive set of recommendations that could receive broad support across diverse stakeholders. At the table for these important discussions, Scenic Hudson

has since educated the broader Hudson Valley community on the issues and has worked tirelessly in the state capitol to advocate for change. In early 2020, New York State announced the passage of the Accelerated Renewable Energy Growth and Community Benefit Act (the Act). The Act will create a first-in-the-nation Office of Renewable Energy Siting to improve and streamline the process for environmentally responsible and cost-effective siting of large-scale renewable energy projects across New York while promising to deliver significant benefits to local communities.

The new office has one year to establish regulations and uniform standards that encompass the environmental impacts common to large, renewable energy projects, and identify mitigation measures to address those impacts. Because Scenic Hudson is considered a leading expert on renewable siting, it is well-positioned to influence the uniform standards to support the best practices for siting and establishing appropriate community benefits that the organization has been promoting. These changes will lead to conservation benefits in the Hudson Valley, across the state, and possibly the nation as others look to New York as a leader and a model.

In a similar vein, the Climate Leadership and Community Protection Act (CLCPA), passed in 2019, represents the first time that climate goals have been codified in the statute. This means that the goals will live on beyond the term of any one politician. In addition to previously discussed energy transition goals, the CLCPA sets a target of reducing overall carbon emissions by 85 percent by 2050. The bill lays out an expectation that 15 percent of the carbon reductions will be accounted for through offsets located in the same county and within 25 miles of the source of emissions, to the extent practicable. The CLCPA creates a Climate Action Council and sector-specific advisory councils, which are tasked with developing a plan to reach the CLCPA goals. A draft is due in 2022, and a final, enforceable plan is due in 2023.

In affirmation of Scenic Hudson's commitment to advancing natural climate solutions that mitigate climate impacts, President Ned Sullivan has been appointed to the Agriculture and Forestry Advisory Panel, a working group of the Climate Action Council established under the CLCPA to develop a scoping plan of recommendations to meet climate targets. On the panel, he will have an opportunity to infuse the learning and innovative ideas from Northeast Carbon Alliance into the planning process and ensure conservation considerations important to many New York land trusts are engrained in the goals and support from the state for years and decades to come.

As we are currently experiencing a global pandemic, it would be hard not to comment on how this unexpected factor has influenced climate strategies. We cannot know the actual implications for some time. Still, one unfortunate outcome is the decision to delay the proposed \$3 billion environmental bond act, the Restore Mother Nature Bond Act proposed by Governor Andrew Cuomo. The passage of this act would create the nation's most aggressive program to reduce the risk of floods and restore wildlife habitat. It is not surprising that this bond act has received strong support from the conservation community. It will take a great deal of work on everyone's part to bring this issue back to the forefront and maintain the momentum on climate actions present before the COVID-19 pandemic.

Lessons Learned

Working on climate change issues is complicated, dynamic, and emotionally charged. Along the way, Scenic Hudson has learned several lessons that will continue to guide its work moving forward.

One big realization has been around how much words and framing matter when working in the politically charged space of climate change. There is a need to bridge the gap between the language that farmers, policymakers, the public, and conservation organizations use. For example, akin to talking about conservation easements with the public, many farmers begin to shut down when you start talking about carbon. Framing the solution in a way that focuses on the benefits to the farmer and their bottom line, like "soil health" and "increased productivity," may be a more effective approach to gaining support for practices that also sequester carbon.

Through this work, Scenic Hudson has developed resources designed to help local governments, agencies, and other conservation organizations bring science-based climate considerations into planning. One important lesson learned is that going from planning to implementation is challenging and requires the same amount, if not more, effort. Just because someone understands the concepts and has brought them into a plan, it is still hard to take the next step. Follow up, periodic reassessment, and local champions are essential for moving forward successfully.

From an advocacy perspective, it is important to know what you want to achieve, but it is even more important to start from where you are. In practice, this means recognizing that there are many stakeholders for any given issue, and a viable policy solution will be one crafted to bring everyone along. Engaging people in a discussion about the substance of the problem is an important first step. People care about clean water, healthy food, and not having their communities flooded. Understanding how people are experiencing climate change is essential to determining what people would be willing to live with and making a case for why they should care.

Regarding renewable energy, Scenic Hudson Land Use and Environmental Advocacy Attorney Audrey Friedrichsen pulls from her experience as a municipal attorney when recognizing that

renewable energy siting discussions at the local level are a very emotional place. Transitioning to a low carbon energy system is ultimately a land-use issue that will require the construction and development of large-scale solar and transmission lines. Everyone has an opinion on the impacts of a proposed project; some see a threat to their quality of life. Others see the project as essential to maintaining quality of life. It is important to recognize and legitimize the role that these emotional aspects play in the positions taken by different stakeholders. To be successful, a project must have significant climate change benefits and must not have undue localized impacts. Since climate change touches all aspects of Scenic Hudson's organization, it has been important to ramp up communications across organizational disciplines. By creating topical "working groups," Scenic Hudson hopes to gain a 360-degree perspective that will result in a more holistic approach. One final lesson is that things always take longer than you think they will, especially during a global pandemic.

Policy Recommendations

Land conservation organizations are particularly well-suited to play a role in advancing climate solutions that intersect with land-use decisions. As we have seen in New York, ambitious goals alone will not create a smooth transition to a much-needed carbon-free energy system. If the challenges of siting projects to meet both communities and energy developers' needs are not adequately addressed through policy, we will continue to waste precious time and resources.

Policy solutions must promote a high level of collaboration between state and local governments to create a system where renewable energy development supports state or regional goals while still preserving invaluable natural resources. New York's new Accelerated Renewables Act encapsulates many of Scenic Hudson's policy recommendations aimed at promoting a shared goal for all to receive the benefits from a transition to clean energy. These policy recommendations can easily be incorporated into energy policy in other states at the federal level. Recommendations include: creating a statewide or federal master plan for land-based renewable build-out; increasing public awareness before a renewable energy project is proposed; ensuring that financial and technical assistance is available to help guide and support municipalities to adopt local plans and laws; and ensuring that renewable facilities consistent with community values are welcomed. Large-scale renewable energy projects that demonstrate local support and meet conservation goals should be incentivized through a shortened permitting process, and policies should also be adopted to protect the most productive agricultural land and keep it in farming, maximizing opportunities for renewable energy development and agriculture to coexist.²⁹

To address climate change, it is vital that we drastically reduce fossil fuel emissions. Still, we must find other ways to remove greenhouse gases in the atmosphere while also avoiding emissions from the land sector. Natural climate solutions offer a way to make our lands part of the solution to climate change. There is a natural climate solution for every type of land – forests, farmland, wetlands, grasslands, and even urban landscapes have a role to play.

Investment in natural climate solutions cannot solve climate change alone, but it will not be possible to zero out greenhouse gas emissions by 2050 unless we pursue these strategies with the same intensity as efforts to reduce carbon emissions from energy generation, transportation, and the industrial sector. Indeed, there is no way we can limit global warming to 1.5°C without investing in natural climate solutions.

If we rely on renewable energy projects alone, we are missing an opportunity to reach the full sequestration potential of our natural and working lands. Natural climate solutions are cost-effective and can offer immediate and long-term opportunities to support carbon emission reduction goals while providing many economic benefits, such as infrastructure jobs and direct payments to land managers for carbon sequestration. Moreover, investing in climate resilience is a cost-effective strategy for natural disaster preparedness and mitigation. At the state level in New York, it is critical to continue increasing investments in the Environmental Protection Fund as a way to support these goals. Particularly, funds for open space and land acquisition should be increased, and support for the Conservation Partnership Program, the Farmland Protection Grants program, and a new conservation easement program aimed at protecting New York's forests should be well-funded to reflect the role they can play in providing natural climate solutions. At the federal level, there are ample opportunities to invest in natural climate solutions through redirection of existing funding sources to achieve carbon sequestration.

Examples include the Farm Bill's conservation programs such as the Environmental Quality Incentives Program (EQIP), Conservation Reserve Program (CRP), Regional Conservation Partnership Program (RCP) and Healthy Forests Reserve Program (HFRP). A comprehensive analysis of federal agricultural programs to ensure they are advancing, rather than obstructing, the goals of greenhouse gas mitigation should be a priority of the next administration.

About the Author

Kelly Watkinson is the Program Manager for the Land Trust Alliance's Land and Climate Program. Kelly is responsible for the design and implementation of strategies, trainings and resources for land trusts across the country working to both adapt to and mitigate climate change. Kelly is a resource and land conservation professional with 11 years of experience protecting and restoring lands of the Chesapeake Bay watershed. While Executive Director of the Cacapon and Lost Rivers Land Trust, Kelly was responsible for all aspects of running the nonprofit and implementing their conservation programs which include conservation easement and fee simple acquisitions and stewardship of 14,000 acres in West Virginia. As a Peace Corps volunteer, Kelly worked with indigenous Mayan communities in Guatemala to implement conservation projects and promote sustainable natural resource management. Kelly has a degree in Environmental Science and Management from Indiana University and has a Masters of Natural Resources from Virginia Tech with a focus on Leadership in Global Sustainability.

Appendix 1: Study Group Questions

One of the several uses of this case profile is in an academic setting. Following are several questions that an instructor can pose to their study group to engage participants in the details of the narrative.

1. Is this a novel initiative? How have the protagonists creatively addressed the climate change impacts facing the Hudson Valley region?
2. Is the solution profiled in this case measurably effective and strategically significant for the practice of land and biodiversity conservation and climate change adaptation and mitigation? Why and why not?
3. Are the solutions emerging from this case transferable to other jurisdictions and will they endure?
4. Is this a large landscape solution that crosses sectors and political jurisdictions? Who are the key players from various sectors essential to the success of this initiative? What are the key technologies and organizational methodologies?
5. If you were manager of Scenic Hudson's climate initiatives, what would be your priorities for action in the next year? Over the next ten years?

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