

DEVELOPMENT OF FARMING
IN THE HUDSON VALLEY
THE LAND AND THE PEOPLE

by
Clare Danielsson



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Phillies Bridge Farm Project, Inc.

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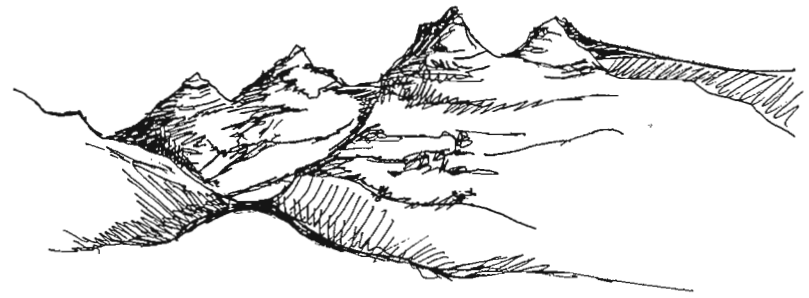
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FOREWORD

Mohonk Consultations has a history of concern for the preservation of farmland and support for the farmers of the Hudson Valley. In 1995 Mohonk Consultations supported the re-introduction of cultivation on the LeFevre/DuBois/Ottoway Farm on Phillies Bridge Road through a special program called the Phillies Bridge Farm Project.

There has always been an interest in how that piece of farm land was developed and used before and since it was cleared for cultivation. The history of Phillies Bridge Farm is part of the larger story of how the Hudson Valley land was first cultivated a thousand years ago, and how the land and its people have changed over time.

The Hudson Valley farming story is told here to help those who live here make choices about their food sources and the quality and health of their earth/community environment. The Phillies Bridge Farm Project and Mohonk Consultations have jointly published this information to serve as a tool for education about agriculture in the Hudson Valley. The text is available on the website of Phillies Bridge Farm Project, www.philliesbridge.org.



THE NATURE OF THE LAND

"Farmland in the Hudson Valley . . . has a greater degree of versatility than land in Kansas," was a conclusion of the 1989 Mohonk Consultations' report on The Preservation of Agriculture in the Hudson Valley. "Unique micro-climates, soil characteristics, hydrological aspects, and farming techniques combine to create differences in the Hudson Valley region. We can ill afford to lose such versatile land."

"While this region has the resources to grow considerably more of our food supply than the 15% that came from local farming as of 1989, current estimates are that . . . it is much less than 15%. Historically, the people who lived in this valley in earlier times understood and appreciated its diversity, a worldview that we shall now explore."

NATIVE AMERICAN FARMING PRACTICES, 1000-1600 C.E.



In the Eastern part of the United States, cultivation began in the Late Woodland period, 1000-1600 C.E. The Native Americans in this part of the Hudson Valley are known as the Munsee 'Delaware' and are part of an Algonquin language group consisting of Munsee and Lenape speakers, mutually intelligible dialects. Natives refer to themselves as Munsee. The white settlers referred to the Native subgroups in the Walkkill Valley as 'Lenape' or 'Esopus' Indians. It is estimated that 90% of the Algonquian

people died from warfare or from diseases brought over by the European sailors and settlers. Some of the Munsee survivors still live in the valley, but most were relocated to Wisconsin, Oklahoma, Ontario, Canada, or live as small unrecognized groups elsewhere.

The Indians had three sources of food: wild crops, meat and fish and cultivated crops. Their culture developed specific social/spiritual traditions that accompanied the provision of food for the tribe.

Wild Crops were available everywhere. There were chestnuts, acorns, hickory nuts, walnuts; many edible wild berries such as blue berries, gooseberries, elderberries, strawberries, fruit trees such as plum, paw paw; root vegetables, wild rice, sunflowers and tobacco. Under the leadership of the women, the entire native community was often involved in managing and gathering wild crops. Hand pollination was practiced to increase the yield of paw paws and other crops. Native healers collected the many varieties of medicinal plants.

Meat and Fish were obtained by the men for the tribal community. As traders and foresters, hunters and fishermen they managed the woodlands. To trade they traveled by foot or canoe. Water was the most efficient means of travel and the only animals available for domestic use were the turkey, duck and dog. The foresters burnt the underbrush in the woodlands to make travel and hunting easier and defense more secure. The fires reduced bugs, fleas and rodents and promoted the growth of various wild crops. This modified the new growth in the woodland and created extensive parks that attracted buffalo and deer. The clear streams and lakes promoted an abundance of fish.

Cultivated Crops were grown on farmland created by modifying the woodland. In preparation for farming, in the spring the men began the 'slash and burn' process of

clearing the fields for planting. They did this by girdling or removing a circular strip of bark around the trunk. This process did not involve excessive chopping or sawing and effectively killed the tree. The dead trees, denuded of foliage, allowed the sun to penetrate into that part of the woodland. The following spring the underbrush was burnt, and the ashes worked into the soil. Frequently after a period of between ten to twenty years, the land was returned to woodlands. While customs varied from tribe to tribe, the farmland and the villages were part of the women's domain.

Women were the principal farmers in Native American agriculture once the woodland area was cleared. Algonquin societies were matrilineal. There was little differentiation of wealth and everyone contributed to the survival of the community. Children helped in the course of their training for adult responsibilities. Ecologically sound farming practices were developed with primitive tools. Companion planting methods increased yields by as much as 50 percent over crops grown separately. Raised hills were planted with corn, beans and squash together. The beans fixed nitrogen in the soil, which helped the corn, and the corn stalks served as poles on which the beans can climb. Squash leaves, in turn, provide shade and reduced the growth of weeds. Companion planting also helped control insects and other pests.

Sometimes fish were used as fertilizer. Crop modifications occurred locally and over a long period of time. New seeds were traded extensively between tribes. Eastern tribes had sophisticated preserving and storage techniques. They often had several years of dried food available to them in storage. North American environment. Its productivity put its "Indian agriculture was uniquely adapted to the eastern European counterpart to shame," writes Daniel Richter in *Facing East from Indian Country*. Evan Pritchard in *Native New Yorkers* cites estimates of the Munsee population as between 24,500 to 51,300 in the lower Hudson and Upper

Delaware valleys combined. He writes, "As some believe, the Lenape population in the New York area was 65,000 at its height in 1524, the date of Verrazano's arrival, ranking it with the top cities of Europe."

In *Indian Givers*, Jack Weatherford describes how the native people of North and South America cultivated, developed and modified over 300 food crops. Many of them occur in dozens of varieties. Some three-fifths, 60%, of the daily diet eaten in the world today originated on this continent and traveled to the rest of the world through European trade starting in the 15th Century. This includes the white potato, sweet potato, tomato, corn, beans, squash, peanuts, and cassava. Many varieties of peppers, nuts and berries have also entered the mainstream of world diet, nutrition and cuisine. More recently, amaranth, a staple grain of the Aztec Indians of Mexico, was introduced as a food crop in US health food stores in the 1970s. Quinoa, cultivated by the Incas in the high valleys of the Andes, became available commercially in 1986.

DIFFERENT APPROACHES TO THE NATURAL WORLD, 1300-1900 C.E.



In general, the American Indian's experience was that the Creator could be trusted to provide for all of life in the universe. The complexity of how everything influences everything else was an accepted part of daily life as well as ceremonial practice. Human beings are understood to be just one part of the web of life, sharing the earth with all other beings, plants, animals, birds, the winds and the stars. All must be respected and all are greeted as "All my relatives". The moral codes to be followed were called the Original Instructions. "Respect for the earth and for all its paths, peoples, all things, (no separate word for animals) cultures, and customs growing here. All have a place in the hoop," writes Evan Pritchard, author of *No Word for Time*:

The Way of the Algonquin People.

European immigrants to America introduced new domesticated animals, crops and methods of cultivation to the Americas. Immigrants used farm animals, such as horses and oxen, to help with heavy physical labor. They introduced cattle for meat and dairy products, chickens for eggs and poultry and swine for meat, leather and fat products. North American Natives had no large domesticated animals. Cattle, horses, oxen, swine, goats and chickens were not indigenous to America.

The immigrants had metal tools for cutting and digging. Extensive forests were clear cut as the wilderness was pushed back. They introduced new grains, each grown separately in a large field: wheat, barley, and rye. Many crops were grown for feed for cattle and other domesticated animals, not solely for human consumption. Corn was adapted from the Indians primarily as animal food.

The immigrants brought a different set of values to the Americas. The experiences of the periodic famines and plagues had caused suffering and extensive death in Europe during the Late Middle Ages. This influenced their interpretations of Christianity. The natural world was feared and mistrusted by Europeans of that time. The Black Death, which took away the lives of one-third of Europe in the 14th Century was interpreted by many as being a punishment from God for the sins of some humans. Power over nature was essential, as was power over 'bad' people. While patriarchal social structures had existed in Europe since 4,500 BCE, the mistrust of women expanded with these hard times. Women who understood matter (the ways of nature and healing arts) were suspect, considered witches and persecuted in the 17th and 18th Centuries both in Europe and America. Women were thought to be the property of men, as the earth was the property of those who had the power to control and harness its energy.

The European view that nature is to be subdued and conquered helped launch the Industrial Revolution. Modern science and technology led to mining the earth for its mineral resources and probing the invisible world of microbes and atoms in order to increase human power. The idea of respecting and scientifically researching natural soil renewal methods was suspect. The industrial approach encouraged the extraction of petrochemicals from the earth and the application of them as fertilizer and pesticides in food production. Weapon development intensified. First there were muskets and cannons, then later atomic bombs and bio-chemical warfare creating the entire military arsenal of radioactive and chemical weapons we have today. Modern warfare has a negative impact on land, water and air that lasts longer than the war itself.

The research legacy from the Industrial Era was reductionism. All matter was considered as separate entities and parts interacted with each other as part of a machine rather than parts of a living organism. The earth was there as a resource for humans, "a collection of objects not a communion of subjects" (Thomas Berry). Researchers had little awareness of how plants and animals related to each other. They genetically modified corn to increase its yield as a separate plant. However, pollen from genetically modified corn drifted over to the milkweed plant where the Monarch butterfly larva feed. Thus, the Monarch's food chain was altered and the Monarch's population reduced. (Documented by Cornell University researchers in 1999.)

Both wildlife and soil quality have suffered major losses from large-scale commercial farming practices from pollution due to industrial production methods. Bird maps indicate by flight patterns how they avoid chemically fertilized fields. Fewer insects are available to birds because of pesticides, and those they eat are contaminated, which affects the health of the feeders - and so on up the food chain. Insects

and bacteria develop resistance to chemicals, spurring new industrial-based chemical research. Little research is done on the ways nature achieves a balance. Scientists may disagree, yet there are many anecdotes about plant modifications and sprays that are produced without first investigating the long-term effects on the life chain.

WETLANDS AND WOODLANDS SHRINK; FARMS AND VILLAGES EMERGE, 1640-1869 C.E.



The demand for beaver pelts by 17th Century European traders caused a major alteration of the natural Eastern Woodlands. The Algonquins were tempted by the opportunity to trade and they over-hunted the beaver. Large areas of present-day New York and New England were probably devoid of these creatures by 1640. As a result, the ponds that formed behind the beaver dams dried up, reducing the number of fish and waterfowl that would live by the quiet, slow streams to provide a wild food source for the Native Americans. On the other hand, meadows became desirable for hay fields and pastureland for the European families. "Without these natural meadows," a New England colonist later concluded, "many settlements could not possibly have been made." (Richter)

The woodlands were cut for fuel and lumber by the Europeans as well as cleared for cultivation. Homes were heated by wood, which was cheap and plentiful in the New World. A photograph of the Rondout Valley in the 1880s shows mostly cleared land, few trees. Much of it remained open until after WWII. Trees in the mountains were cut to obtain tannin for tanning leather, or to make charcoal or barrel hoops. A New England writer lamented "the new settler clears in a year more acres than he can cultivate in

ten,” reports Bradley Snyder in *The Shawangunk Mountains*. The wilderness had been changed into a pastoral landscape of farms and villages. Most of the land in the Hudson Valley remained this way until after WW II.

In contrast to the Native Americans, the European immigrants were patriarchal in their social structure and lived on family farms rather than as extended families or tribes. Farming was considered a man's occupation, not a woman's, just as land ownership was considered a male right. Yet in America, the native farmland was the domain of the Algonquin women! The immigrant men wanted to gain control of the farmland as well as keep the European women within the patriarchal system. Native women were referred to in all manners of derogatory terms, which helped dispossess their ancestral claim to the land, relegating them to the status of house servant or slave. The women's 19th Century suffragette movement acknowledges the inspiration of native women in their campaign for political and economic equality. Today the issue is worldwide. “Public acknowledgment of women's contribution to agriculture is minimal in many countries of the world today,” writes *Worldwatch 2002*, “and is a factor in farm productivity.”

NEW WOODLANDS APPEAR WITH LARGER, FEWER FARMS, 1869-1945



Eastern woodlands began to regenerate and replace farm fields because of the introduction of coal, and later oil and gas, for heating. Additionally, there were fewer farmers in the Valley as the transcontinental railroad encouraged many to relocate for flatter, fertile land in the West. Throughout the Hudson Valley, woodland growth re-emerged with pockets of fields, villages and humans. As the beaver population remained reduced, the meadows were dryer. Humans provided the dams to keep the water where they needed it.

Land prices dropped. Abandoned farms on the Shawangunk Ridge were purchased by the environmentally aware Smiley brothers, owners of the Mohonk Mountain House since 1869. The resort still retains some 2,000 acres. The rest of the 6,000-acre ridge area eventually became part of Mohonk Trust/Preserve, a non-profit organization started by the Smiley family in 1963. Lake Minnewaska, once owned by a Smiley, is today part of the New York State Park system.

The balanced animal diversity of the previous wetland/woodland ecosystem is permanently lost to us. Without the timber wolf and mountain lion, the whitetail deer has no serious native predator – although coyotes are starting to return. Today there are three times as many deer as can be sustained in the woodlands. Deer thrive at the edge of the woodlands where they can feed on local farm fields and gardens. With the loss of balanced animal diversity, humans are responsible for limiting the deer population by fencing fields and gardens, and establishing deer population management policies.

Hudson Valley farmers began to focus on providing food for the emerging urban areas, especially New York City. Old practices of food self-sufficiency and local farm trade changed into the sale of cash crops that made a profit. Family farmers turned to specialty crops such as vineyards and orchards, (especially apples), and raised dairy cows and chickens. Technical innovations that increased the yield per acre were welcomed and concern about soil quality declined. Arsenic was used as a pesticide spray between the 1920 – 1950, followed by DDT from then until well into the 1960s. These chemicals remain in the soil, and are released by detergents into run-off from housing developments and rain water. Thus, they make their way into the streams and rivers that make up the public water systems.

While farms became larger as mechanization became available in the Hudson Valley, commercial agriculture with its large machines was limited by the diversity of the land itself. Farm family structure changed in subtle ways. Families continued to run their farms and encourage their children to continue the farming tradition. However, means of transportation changed from Hudson River shipping to highways. Farmers began to sell their produce to third party urban truckers who came up from New York City. They drove from farm to farm buying produce competitively, seeking the lowest price. As a result, the direct contact between farmers and consumers in local markets declined. Wholesale distributors began to have a major voice in determining what crops should be grown and what consumers should pay for them. This disempowering process made relationships between farm families more competitive and memories of these times remain as part of farm family history.

AGRI-BUSINESS & THE WORLD POPULATION EXPLOSION 1945-1995



After World War II, the US government initiated and subsidized a food policy with a goal to assure affordable food for working class citizens. It supported the commercial agri-business with the emphasis on quantity rather than quality. Today, only 2% of the population engages in farming in the U.S., *Worldwatch 2002* reports, and one farmer feeds an average of more than 100 people. "This encouraged ... a single-minded focus on extracting as much crop as possible from a given plot of land, unintentionally marginalizing consideration of how food was produced or who benefited." *Worldwatch* continues, "The bio-tech industry has put the vast majority of its investments into crops and traits designed for large-scale, mechanized farms." Land suitable for large scale farming does not exist everywhere. Chemical

fertilizers and pesticides target the condition of the plants, not the soil. Huge mono-crop farm fields invite pests and draw a lot of nutrients out of the soil, while chemical inputs do not add nutrients permanently. In the 1940s, crop loss was about 7%, now with the use of synthetic pesticides crop loss is 13%. The excess nutrients on conventional farms are carried off into wetlands, ground-water and rivers. The US has lost one-third of its topsoil in the last 50 years. Most of the valuable soil goes down the Mississippi and collects in a 'dead zone' in the Gulf of Mexico. Neither humans nor nature have yet figured out how to re-integrate it into a balanced eco-system.

Bio-engineered plants impact the soil, other plants, animals, humans and the ecosystem. They also create other side effects not yet known. We do know that even the best seed will not grow well in poor soil. Thus, genetically modified plants may not make a difference to the problem of world hunger. *Worldwatch* reports that there may be a role for biotechnology as an informational rather than an engineering tool. "The ability to map and study the genetic code of agricultural plants – the field called genomics - can greatly enhance traditional breeding or improve our understanding of how plants respond to drought and disease."

For people in the US, the distribution of food has high hidden costs that include refrigeration, packaging, storage and transportation. These activities use eight times as much energy as is provided by the food itself. Jules Pretty of the University of Essex in the United Kingdom summed up the costs. "People pay three times for their food," he writes, "first when they subsidize farmers, second when they pay to clean up the mess from polluting farm practices, and again when they buy food at the checkout counter. "

"Costs like these – to ecosystems, rural communities, and society as a whole – are not confined to the United Kingdom," comments *Worldwatch*. Health issues in the

Hudson Valley have increased because of industrial pollution, chemical fertilizers and pesticides. Children and adults with illnesses and low immunity are the first to be affected. "It is estimated that 60 to 80 percent of all cancers are a direct result of chemicals in our air, water and food," writes Lynn Tondat Carter in *Inner Self Magazine*. A child raised on commercially available produce has 6 times as many pesticides in her/his body as a child raised on organic foods.

The food market is increasingly a global market. The availability of modern transportation and refrigeration allows food to travel long distances. With subsidized prices foreign countries can compete with local markets. Today, Hudson Valley apples compete not only with apples from the state of Washington but with apples from around the world, especially China. Farming is a fragile occupation reliant on changing weather conditions. Subsidized international competition makes it even more risky.

Today, huge national and international corporations act as middlemen between the growers and the consumers, just as the urban truckers did in the Hudson Valley before WW II. Only a few chains are willing to let their local managers buy from local farmers. As soon as a grower makes an improvement that decreases costs, the chains grind prices down lower and reduce the contribution to farm overhead. Farm families are often land rich and cash poor and many depend upon a second income to provide health and pension benefits. Labor is a central issue. Today more than 1/2 of entry-level farm workers are of Hispanic origin rather than from farm families or the local community. Many farmers have left farming altogether, selling their land to real estate developers, seeking employment elsewhere and encouraging their children to seek occupations other than farming.

The Hudson Valley has also become an attractive residential alternative to living in New York City. Suburban sprawl has been allowed by outdated local land-use policies, and encouraged by expanding the lot size requirement per family. An alternative approach would be to integrate agriculture into general planning processes: balancing housing, farmland, woodland and open space needs. This would require a shift in how local communities think of their own future. Even though there has been only a 13% population increase in the last 30 years, the New York metropolitan area has sprawled out by 60%. The American Farmland Trust ranked the Hudson Valley 10th on its list of the most threatened agricultural regions. The loss of farmland also affects tourism and the National Trust for Historic Preservation designated the Valley as one of its "Eleven Most Endangered Historic Places."

With the agri-business model, there is still a famine danger zone globally since not enough varieties of agricultural produce are grown. As each variation has its own resistance to pests and weather changes, diversity protects against hunger. If more varieties of potatoes had been planted in Ireland in 1843, that historic famine might not have been as severe. The lack of interest in diversity is still with us. *Worldwatch* reports, "Of the 7,000 crop species that have been domesticated by humans, a mere 30 species provide an estimated 90 percent of global calorie intake. Indeed, wheat, corn, and rice provide more than half – and occupy the vast majority of global crop areas. This is a pattern that leaves farmers and the global food supply vulnerable to erratic weather or pest outbreaks." There is no automatic connection between increasing food productivity of a particular crop and eliminating world hunger.

STEPS TOWARD HEALTHY LAND USE, 1995-PRESENT



There is an expression that aptly fits the transition to healthy land use: "*Today's problem is the result of yesterday's brilliant solution.*"

While the agribusiness epoch originated with federal government policies and corporate initiatives, the new food system model that emphasizes a balanced eco-system has been initiated by local communities and grass root organizations. The agro-ecology model resembles the relational worldview of Native Americans in which the soil, the plants and animals are all interconnected as one living organism. Local and regional food distribution systems improve the quality and freshness of the food supply. People feel more secure as both grower and consumer have some relationship with each other for they know or can find out about how food is grown and harvested and how animals are raised and slaughtered. When food is shipped an average of 1,300 miles from the grower to the U.S. consumer, as is common today, it becomes difficult to know who or what is involved.

Four new developments occurring simultaneously are helping the transition from large scale commercial to agro-ecological farming. 1) The distance between the grower and consumer is being bridged, 2) new and regional food distribution organizations are being created, 3) reduced pesticide use and awareness of organic farm and garden growing practices are benefiting the soil and human health, and 4) community initiatives are changing local laws so that conservation zoning and subdivision codes can create more livable communities.

Direct contact between the farmer and food buyer is being re-established through new ways of distributing food. Community Supported Agriculture (CSAs) projects create a contract between the farmer and local families to pay in the spring, and receive produce throughout the growing season. Conventional farmers have responded to the need for more direct contact by expanding their local farm stands, urban markets and direct sale to restaurants and institutions.

Women in Japan initiated the Community Supported Agriculture (CSA) movement during the 1970s. Major agricultural changes began after WWII by increased contact with the US. "Land was privatized and divided into ever smaller holdings, chemical inputs were used to boost yields. . . . the consequences were migration to the city and few farmers managed scattered parcels of farmland with increased mechanization and petrochemical inputs." Elizabeth Henderson reports. A group of Japanese women became concerned about the use of pesticides, the increase in processed and imported foods, and decrease in the farm population. They established Teikei, "food with a farmer's face on it" in 1965, attempting to re-establish the intimacy and direct relationship between those who grow the food and those who eat it. The movement spread first to Switzerland and Europe before become coming to the US. The first American CSA farm was established in 1984 at Indian Line Farm in Massachusetts. Today there are more than 1,000 CSAs in the US. Manor Lake Farm, a CSA in Kingston was the first CSA in Ulster County in 1988-93. Four Winds Farm with Polly and Jay Armour started next, followed by Phillis Bridge Farm in 1995. There are currently 30 CSAs in the Hudson Valley and it looks as if this will increase.

Local farms are expanding their farm stands and 'pick your own' harvest arrangements with the public. Collaboratively, there is a major social re-organization underway, as farmers

begin cooperating with each other in independent organizations to modify existing wholesale food distribution systems. Such collaboration is encouraged on the statewide level by the NYS Dept. of Agriculture and Markets, and independent local associations from other states. One goal is to reduce out-of-state food imports, which now provide 85% of the market. Environmental groups such as Scenic Hudson are supporting the economic viability and environmental sustainability of Hudson Valley farms, and helping to keep farmland in tact for future use.

The government, the farmers and food consumers are all increasingly aware of the danger of chemical fertilizers and pesticide use. With increased farmer education offered by Cornell Cooperative Extension starting in the 1990s, Integrated Pest Management (IPM) is now common practice in the Hudson Valley, which has significantly reduced chemical application to the soil and plants. Farmers are motivated to lower costs as prices of pesticides increase. Homeowners too, have a role to play in creating healthy gardens and lawns by learning about natural alternatives to harmful chemical fertilizers and pesticides.

Organic farming ideas were pioneered in Europe as early as 1924, as farmers became aware that their land was becoming increasing infertile. Rudolph Steiner, the founder of the Anthroposophy movement and the Waldorf Schools, pioneered the concept of biodynamic agriculture. He began as the editor of the scientific writings of Goethe, adding his own genius and insight in subsequent writings. In this holistic concept, the earth is understood as a living organism, (in the same manner as a farm is a living organism with relationship among all its parts). Farming methods are directed at increasing the quality of the whole growing environment. Organic crops show higher amounts of vitamin and mineral content than conventionally produced. Soil quality as well as support for abundance and diversity of wild life species are important.. Today, biodynamic farming has become

widely practiced within alternative farming networks globally and is recognized both for providing a high quality of produce and for innovative socio-economic organizational forms.

In the U.S., the steady increase in organic food sales of 20% a year for over a decade is motivated particularly by health concerns. Organic food production is not yet a major factor in the food supply market in New York State. Less than 1% of produce in New York State was organically grown in 2002. However, the awareness of its potential is spreading. In his keynote address to the Northeast Organic Farming Association of New York (NOFA-NY) in 1998, Russell Libby called this new vision of food production "Food with a face, a taste and a place." NOFA lists 24 certified organic farms in the Hudson Valley and several others practice these growing methods but are not certified.

The future of the food revolution and livable communities in the Hudson Valley will depend on the awareness and actions of individuals living here today. Versatility has always been a major asset of the land. Randall Arendt of Natural Lands Trusts recommends exploring the unique features of the site before any development action is taken. A site visit by planning board members, conservation commission members, staff, the development applicant and interested neighbors can help determine its appropriate uses. Then a sketch plan can designate which areas need to be conserved so natural resources can be protected. Maximum development density can occur around the natural resources as farmland, water resources, wildlife, and open space become integrated into the planning process. There is less population growth than developers participate. Local and regional cooperation, and new ways of collaborating, such as land trusts and conservation easements can strengthen the natural bio-diversity of Hudson Valley land. This region can play a major role in providing a significant and secure food supply system to our neighboring urban

centers, as well as becoming a healthier and more beautiful place to live.

RECOMMENDATIONS OF THE WORLD SUMMIT PRIORITIES ON AGRICULTURE, (as reported by *Worldwatch State of the World 2002*).

- Shift agricultural subsidies to support ecological farming practices
- Tax pesticides, synthetic fertilizers and factory farms
- Eliminate export subsidies and food dumping.
- Redistribute land and guarantee secure ownership rights to both women and men
- Assure women equal rights and support in agriculture

PHILLIES BRIDGE FARM, AN EXAMPLE OF FARM HISTORY



Phillies Bridge Farm lies in the Walkkill Valley at the base of the Shawangunk Ridge. The land has been shaped by the geological history of the area. Several times in the last million years, glaciers have modified the folded ridges of the Shawangunk Mountains and the Hudson River Valley. The conglomerate rock is ancient sedimentary rock, as is the older shale on the ridge. The soils in the valley are called glaciofluvial, and are high in shale, sand, gravel, loam and clay content, and are full of rocks brought down from the older Catskills by the glaciers. Wilderness plants, trees and animals gradually established themselves in a variety of ways depending on their location. The Shawangunks are in a transition zone between the typical northern biological community - beech, birch, sugar maple, white pine and hemlock - and the typically southern - oak, hickory and pitch pine. The original forest is now mostly gone. In the last 400 years, the usage by European settlers and the demands of world trade have dramatically remodeled the land.

Current analysis reveals that thirteen different soil series are found on the 65 acres of Phillies Bridge Farm. It is primarily a broad plain interrupted by low knolls and ridges with dissecting drainage patterns. The soil needs some modifications to make it suitable for agriculture. Improvement of the soil has been accomplished in a variety of ways depending on the land's inhabitants.

The history of Phillies Bridge Farm is typical of many immigrant family farms in the Hudson Valley. Between 1742 and 1955, ten generations of the LeFevre and DuBois families cultivated the land. These were descendants of the original Huguenot settlers of New Paltz c.1666. That section of Gardiner was then called Kettleborough and according to local records, "The gravelly soil of that region was considered very poor." The LeFevre family cut down trees with metal saws and axes, using horses and oxen to clear large fields. They planted European grain crops. Corn was planted for animal feed.

Abraham and Andries LeFevre were known as the "Kettleborough Pioneers" who tried an experiment by planting clover and adding Rosendale lime to the soil. Clover fixes nitrogen in the soil and lime adjusts the pH level, making the soil less acidic and also more soluble. The LeFevre's also practiced crop rotation. The Indian practice of improving soil quality through companion planting was not used. However, the results of plowing in the clover and adding lime were said to be spectacular, producing increased yields of European wheat, the major staple of the settlers.

Immigrant family farms all had vegetable gardens that included the beans, squash, potatoes, and other indigenous vegetables. However, the principal products were European field crops, such as grains, and cattle. The 1845 Agricultural Census lists Cornelius LeFevre, son of Nathaniel, as

growing European field crops: 7 acres of oats, 4 acres of rye, 1 acre of wheat, 1 acre of buckwheat. They had 10 cows, 3 horses and 52 sheep, and probably a few dogs. Of the Native American crops, there was 1 acre of corn and ½ acre of potatoes. Potatoes were introduced to this area by Irish immigrants beginning in 1719. They had learned about this crop from Sir Walter Raleigh in Ireland c. 1588. Spanish traders c.1553-70, had brought potatoes to Ireland from Chile and Peru.

David DuBois Sr. started an orchard at Phillies Bridge Farm in 1916, with subsequent plantings in 1925, 1936 and 1939. Initially apple, peach, pear, plum and sour cherries trees were planted, but after 1924 when his son took over, the orchards were mostly several varieties of apple trees. Different kinds of berries were cultivated. They were marketed to the hotels at Mohonk and Minnewaska and later to New York City.

David DuBois, Jr. also raised chickens for poultry and eggs. He sold milk from his Holstein cows to the Borden Creamery in Gardiner. The farm, then called Mapledale Farm, was one of the first to install electricity, before Central Hudson provided it. The dairy herd of 37 Holsteins was sold at auction in 1955. The fields and orchards were rented out. Apples continued to be harvested and hay was cut, baled and sold until the farm was sold in 1968. The orchards were sold separately and are now part of Rodney Dressel's farmland. The remaining land contained the house, barns and croplands. This tract had three subsequent owners, the last of whom were Jim and Mary Ottoway.

On the initiative of New Paltz resident Dan Guenther, the Working Group on Family Farms of Mohonk Consultations was approached about sponsoring a demonstration farm. The concept was to promote new ideas of sustainable agriculture that would increase the nutritional value of our food, reduce the toxic content of the land and support local

family farming. With support and cooperation from Helen Vukasin, Chair of Mohonk Consultations, the demonstration farm was set up as a project of Mohonk Consultations in 1995. Jim and Mary Ottoway agreed to lease the 65 acres of Phillies Bridge Farm as an experiment for five years, to begin the demonstration farm. The goal was to introduce organic farming methodologies and educational programs that would be useful to local agriculture and schools. In 1999 the Farm established a not-for-profit corporation independent of Mohonk Consultations. In 2002, the farm was gifted by the Ottoways to the organization. In the same year, the farm family tradition was re-established. Peter Brady and Graziella Cervi are currently working the farm using the bio-dynamic agricultural practices of Rudolph Steiner.

Since 1995, the soil of Phillies Bridge Farm has been improved steadily by composting and organic farming methods. Mohonk Mountain House has contributed truckloads of compost that have been worked into the soil. Raised beds have been created on the 6 acres that are under cultivation for the Community Supported Agriculture (CSA) shareholders. The uses of minimum till and no-till farming practices have been explored. The farmer internship program provides young people the opportunity to learn the complex dynamics of organic farming.

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APPENDIX B

USEFUL CONTACTS

The Campaign to Label Genetically Engineered Foods.
PO Box 55699, Seattle, WA 98155.
Phone: 425-771-4049 fax 603-825-5841.
website: www.thecampaign.com

Cornell Cooperative Extension, 10 Westbook Lane,
Kingston, NY . 12401. CCE has fact sheets and
information regarding plants and horticulture questions.
Phone 845-3450-3990 . www.cce.cornell.edu/ulster

The Hudson Valley Agricultural Partnership (HVAP) is a
coalition spearheaded by Scenic Hudson. It was formed
in 2000 to initiate, support and promote efforts to protect
farmland and strengthen agriculture.
Michael Turton, Coordinator
Phone 845-473-440 extension 228
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Natural Lands Trust, 1031 Palmers Mill Rd, Media PA
19063. planning@natlands.org. Northeast Organic
Farming Association of New York, (NOFA). P.O. Box
880 Cobleskill, NY 12043-0880. NOFA lists certified
organic farms and sustainable farm members of NOFA-
New York and articles on food safety and quality, organic
business listings and how to find farm products in NYS.
Phone 518-734-5495; fax 518 734-4641
website: www.nofany.org

The Valley Table, the Magazine of Hudson Valley
Farms, Food and Cuisine, PO Box 2173, Middletown,
NY, 10940. By subscription or free for area restaurants,
wine shops. Contains lists of CSA and Farmers Markets
and articles.
Phone: 845-361-2436, website: www.valleytable.com

APPENDIX C - ABOUT THE AUTHOR

Clare Danielsson has been on the Mohonk Consultations
Board since 1994 and has served on Phillis Bridge
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Consultations. She is currently the Steward of Boughton
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Ms. Danielsson's background is in dispute resolution.
She was Executive Director of Ulster Sullivan Mediation
for 15 years. Earlier she worked as a psychodrama
group therapist. Ms. Danielsson holds a PhD in Social
Psychology. She is a trainer, educator and practitioner
of Psychodrama, Sociometry and Group Psychotherapy
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NOTES

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