



GEOLOGY



WATER



BIODIVERSITY



HUMAN IMPACTS
& CONSERVATION

HISTORY



THE PINE BARRENS:

Close^{UP}
& **Natural**
INQUIRY BASED CURRICULUM

History

Human History

THE FIRST PEOPLE OF THE PINES

Human beings inhabited the area today known as the New Jersey Pine Barrens at least as early as 12,000 years ago. Paleo-Indians (10,000-8000 BC), wandering in small groups, are believed to have used the area for hunting, fishing and collecting food while they camped by its streams and vernal ponds. The animals hunted by the Paleo-Indians during this period of sub-arctic conditions were browsers and included mastodon, moose-elk, caribou and reindeer. Archeological studies done near Batsto during the 1960s indicate that this was a temporary though repeatedly visited site during the Archaic and Woodland periods (5000 BC to 1200 AD).

By 1200 AD Native Americans called the Lenni Lenape settled in the Pine Barrens. The Lenape, also called the Delaware, were an Algonkin-speaking people who lived in the Delaware Valley and across New Jersey to the Atlantic. In New Jersey, the Lenape were divided into three major tribes or bands, each of which consisted of numerous small settlements, both permanent and temporary. The Lenape were hunter-gatherers but appear to have relied principally for nutrition on the cultivation of a number of wild plants including maize, beans, squash, pumpkins and tobacco at permanent villages. Native Americans living at the shore caught quantities of shellfish, as attested by large shell middens found at places like Tuckerton.

It is known from early European reports that the Lenape, like other aboriginal peoples in North America, used fire to drive game and to alter the landscape to their advantage. European settlers often remarked on the Lenape's use of fire. Like European settlers who later followed their example, it appears that one purpose of setting woodland fires was to open the forest canopy and burn away brush and duff on the forest floor in order to encourage the growth of grasses and other herbaceous plants – plants that make good forage for both wild game

the Lenape sought and domesticated beasts that Europeans kept. It is possible that the regular setting of fires over hundreds of years created a forest that was significantly more open and “park-like” than it would have been without human intervention,

but the impacts of Native American burning in the Pine Barrens are not well understood.

When Europeans first arrived in the area by the late 1600s, the Lenape were friendly and welcoming, sharing information about where to find the wild foods that grew in the forest and how to locate the most favorable hunting grounds. Though there were numerous incidents of violence between the early settlers and the Native Americans of northern New Jersey, violent conflict was much rarer in the southern parts of the state. In southern New Jersey peaceful interaction and trade was a common practice between the two



Native American Arrowhead

groups.

Nevertheless, killings and massacres did sometimes take place during the 17th and the 18th Centuries in this region. European accounts attributed killings of settlers to the Native Americans' propensity to avenge any wrong or slight, real or perceived. There is no good record of the Lenape's perspective. The historian Peter Wacker, however, has noted that settlers of different nationalities appear to have had very different relations with the Native Americans, suggesting that friction and violence was aggravated by the attitudes and practices of some settlers towards the Native peoples. Wacker observes, for example, that Dutch settlers appear to have been particularly cruel and to have had more troubled relations with the Native Americans than did Swedes or the later Quaker and Scotts settlers.

From the first European settlements of the 1620s to the effective elimination of Native peoples from southern New Jersey by 1800, the Lenape acted as middlemen between the settlers and Minquas and Susquehanas to the west, trading beaver pelts to the

settlers in exchange for manufactured goods, weapons and alcohol.

European settlers, however, also brought diseases, such as smallpox, tuberculosis and malaria against which the Lenape had no immunity. The Lenape succumbed to these diseases in such large numbers that by the middle of the 18th century their population was greatly reduced. In 1670, one Daniel Denton wrote, apparently without irony, that “It hath been generally observed that where the English come to settle, a Divine Hand makes way for them, by removing or cutting off the Indians, either by Wars one with the other, or by some raging mortal disease.” (Quoted in P. Wacker 1975 p. 87.)

Having lost much of their land and living in poor conditions, the Lenape petitioned the New Jersey Legislature at the Easton Conference of 1758 to provide them a tract of land for their exclusive use. That same year 3,044 acres were purchased as a homestead for all Lenape living south of the Raritan River. The Lenape land, located in what is now known as Shamong Township, Burlington County, became known as Brotherton, the first and only Indian reservation in New Jersey. The reservation was not successful, and its residents repeatedly petitioned the Legislature to allow them to lease or sell the land to whites. In 1801, the Legislature finally agreed to the sale and dissolution of the reservation.

EUROPEAN SETTLEMENT IN SOUTHERN NEW JERSEY

The first European settlers in what is now New Jersey were Dutch, who founded New Netherland under the control of the Dutch West India Company, with its center of government at New Amsterdam (now New York City.) The Dutch created settlements on the Hudson and Delaware Rivers in the early 1600’s at what are now Hoboken, Jersey City and Gloucester City. The Dutch settlements on the Delaware were primarily trading colonies established to acquire beaver pelts for sale to the European market. Swedes began settlements along both sides of the Delaware River in 1638. By 1700, their descendents had established themselves along the Atlantic coastline as well, but Sweden never exercised extensive control in the region.

England eventually wrested control of all of New Netherland from the Dutch. New Netherland was relatively weak because Dutch colonization slowed due to a reputation for poor government and Indian wars, and the existence of better conditions at home in Europe. In contrast, English colonization boomed, due to very poor economic conditions in England for many people and religious persecution

of dissenters. A series of wars between England and Holland in the mid-1600’s led England’s King Charles II to conquer New Netherland in 1664, both to take over the lucrative beaver fur trade and to provide the king with land and business opportunities which he could give to family, friends and creditors. Indeed, by 1673, the English had gained control of the entire Atlantic Seaboard from Florida to Acadia.

The kings of England in the 17th Century encouraged the English settlement of America by granting ownership of land and the power to govern to individuals to whom the English crown owed debts or favors. In 1664, Charles II granted the land we now call New Jersey to his brother, who immediately transferred it to two of his friends, Lord Berkeley and Sir George Carteret. Berkeley and Carteret became the Proprietors and named the colony New Jersey in honor of the fact that Carteret had been a governor of the Island of Jersey in the English Channel. Neither Berkeley nor Cartaret came to New Jersey, but they sent Cartaret’s nephew to be governor and set up the first English settlement at Elizabethtown. More English settlers came south from New England, bringing their strict Puritan principles with them.

In 1681, Charles II granted Pennsylvania to William Penn, an early Quaker, in payment of a massive debt the crown had owed Penn’s father. The king made William Penn the Proprietor of Pennsylvania, which the king named in honor of William Penn’s father. In 1682, William Penn came to Pennsylvania as governor of the new colony, and an assembly of “freemen” adopted the Frame of Government of Pennsylvania. In the Frame of Government, Penn granted to “all the freemen, planters and adventurers, in and to [Pennsylvania] these liberties, franchises, and properties, to be held, enjoyed and kept by the freemen, planters, and inhabitants of [Pennsylvania] for ever.”

After financial problems and quarrels arose, New Jersey was broken up into West New Jersey and East New Jersey in 1676, the division being a straight line running from Little Egg Harbor to the Delaware Water Gap. West Jersey was sold to a group of Quaker investors led by William Penn.

Thus, both West New Jersey and Pennsylvania came under the control of Penn and his Quaker-influenced principles of government. In contrast to the Puritan-dominated East New Jersey, West New Jersey came to be governed by a mild and, for its time, very democratic government. The West New Jersey government was based on Quaker ideas of equality and the Quakers’ experience of religious persecution in England. The charter for government in West New Jersey was the “Concessions and Agreements of the Proprietors, Freeholders and

Inhabitants of the Province of West New Jersey in America” adopted by the Proprietors in 1676. The “Concessions and Agreements” instituted:

- Freedom of religion: “That no man or number of Men upon Earth hath power or Authority to rule over men’s consciences in religious matters ...,”
- Creation of a General Assembly of elected representatives,
- No taxation without consent of the governed through the General Assembly,
- Trial by jury,
- Open public meetings of the General Assembly, and, at least in theory,
- Equal property and legal rights for Native Americans.

Regarding Native Americans, the Concessions and Agreements provided “It is agreed when any Land is to be taken up for settlement of towns or otherways before it be Surveyed the Commissioners or the major part of them are to appoint some persons to go to the chief of the natives concerned in that land soe intended to be taken up to acquaint the Natives of the Intention and to give the Natives what present they shall agree upon for their good will or consent and that a grant of the same in writing under their hands and seals”

The first major English settlement in what became West New Jersey was at Burlington in 1677. The Quaker Proprietors viewed West New Jersey both as a haven for the free practice of religion and as a business venture. The Proprietors offered incentives to attract settlers from Europe and from existing colonies to the north, including the granting of free land. The amount of land granted depended on the age, gender and status (free man or indentured servant) of the settlers, with the largest acreage granted for each free adult male. Indentured servants could obtain land grants upon receiving their freedom. The Proprietors’ profit depended on settlement, as the Proprietors collected taxes on land and trade.

In 1674, King James II of England overthrew the governments of East and West New Jersey, joining them into one Royal Colony of New Jersey. James abrogated the Concessions and Agreements and ruled the colony through a Royal Governor appointed by and answerable to the king alone. When James II was deposed by William of Orange in the Glorious Revolution of 1688, both the Quaker Proprietors and the Governor of New York claimed authority over New Jersey. The impasse was eventually resolved by making New Jersey a Royal Colony in 1702.

One of the most interesting aspects of the relationship between Native peoples and settlers was the means by which settlers obtained ownership of land under colonial laws of southern New Jersey. Both the early Dutch West India Company and the later Quaker Proprietors instituted formal policies requiring settlers to purchase, rather than simply appropriate, land from Native peoples of the area. This policy was deemed expedient; it was not based on any formal or legal recognition of aboriginal ownership of the land of the New World. The Proprietors attempted to regulate and monopolize these transactions, but settlers often found it more expedient to deal directly with local Native American leaders. Of course, these transactions were not necessarily fair because of the unequal wealth and power of the settlers and Natives.

Subsequent conflicts often arose between settlers and Native Americans, due at least in part to the different world-views of the two peoples regarding land and property, as well as to poor or nonexistent records of exactly what land was being traded. Records of such disputes suggest that Native Americans often did not understand the transaction in the same way as the settlers. While the settlers understood that they were buying land for their exclusive and permanent use, Native Americans often claimed they believed they were merely selling a temporary and non-exclusive right to use the land. Peter Wacker concludes, “By the time the Lenape had begun to understand the full import of European settlement and land purchase, their numbers and power had much diminished, and their desire for and actual dependence on European trade goods had grown.” (P. Wacker 1975 p. 95.)

The Provincial Government effectively extinguished any remaining aboriginal land claims in 1758 at the Easton Conference, the same conference that led to the creation of the Brotherton Reservation at Indian Mills. In treaties entered at the conference, the Provincial Government paid representatives of the remaining Lenape 1,000 Spanish dollars for any remaining Lenape claims to land in New Jersey.

EARLY PINE BARRENS INDUSTRIES

It did not take European settlers long to recognize that the Pine Barrens was different in character from the rich soils of the inner coastal plain of the Delaware River Valley and from the maritime values of the Atlantic Coast. The land was called “barren” at least as early as 1674. A report by the Polish traveler, Julian Niemcewicz, captures the dominant view of the Pine Barrens in drawing the contrast he



PHOTO: MITCHELL SMITH

Weymouth Furnace

observed while crossing from Batsto to Mount Holly in 1799. As he crossed into the inner coastal plain, he says:

“There are no longer bogs, sand, gloomy cedar and pine forests, but an open and fertile country. My eyes wearied for a long time by the sunken emptiness were cheered by this sight. With the fertility of the land there is much more settlement and the mien of the inhabitants is more prosperous.” (Quoted in P. Wacker 1975, p. 156.)

Nevertheless, by as early as 1694 Europeans were living in the Pine Barrens in settlements located along the Mullica River (then called the Little Egg Harbor River). Soon the woodcutters moved in and began to harvest the vast stands of oak, pine and white cedar of the Pine Barrens. Beginning early in the 1700s sawmills driven by waterpower dotted the Pine Barrens. The woodcutters came in such large numbers and created such devastation to the forest that people like Benjamin Franklin spoke out urging sustainable forestry practices. Hunters and trappers interested in the furs, feathers and skins of the Pinelands animals came in such droves that many species including mountain lion, wild turkey, black bear and beaver were driven to extinction.

Pitch, tar and turpentine, used in the shipbuilding industry, were early products harvested from the pitch pine forests. As important as the sawmills during those early years were the gristmills where farmers brought their wheat to be ground into usable flour and their corn into meal. Some gristmills were known to operate on a barter system

where the miller would retain a portion of the grain as payment for his work.

It appears that whites did not bring many slaves to work in Pine Barrens industries. From the early 17th Century, the Dutch brought African slaves to their American colonies to work their farms, and many later English colonists in New Jersey owned slaves. Berkeley and Carteret gave white colonists an extra incentive to bring slaves to New Jersey. While early laws provided that white (termed “Christian”) servants would obtain their freedom and grants of land after a fixed term, African, Indian and Mulatto slaves could not. But in New Jersey, the vast majority of slaves were held in East, not West Jersey. The strong Quaker influence in West Jersey did not encourage slavery in southern part of the colony, and Quaker-dominated areas led the colony in the manumission of slaves in the late 18th Century. Moreover, the census records of the colonial era indicate that the use of slaves was based on their perceived value for operating farms in the agricultural soils of the inner coastal plain.

Nevertheless, it is known that some slaves were put to work in the Pine Barrens until emancipation. For example, it is recorded that slaves working as domestic servants at Batsto were freed in 1854 at the death of Jesse Richards, owner of the village and iron works at the time.

Despite many efforts during the 18th and 19th Centuries to oppress even legally freed blacks, a number of freed or escaped slaves and their descendants managed to live independently in the region. The most famous was James Still, doctor of the Pines. Born in 1812 of escaped slaves, James Still studied the healing powers of native plants and served residents of the region for many years from his office near Medford Village, Burlington County. Still’s extraordinary life is told in his autobiography of 1877.

BOG IRON INDUSTRY

By far the most important Pine Barrens industry, and the one most devastating to the environment, was the bog iron industry. The manufacture of charcoal and the extraction of bog ore created great destruction to the environment. The manufacture of charcoal destroyed the natural turf. The excavation of the bog ore destroyed the wetlands and altered the course of some streams. Each of the 17 furnaces located in the Pine Barrens needed 20,000 acres of pine for charcoal. Each furnace produced 500 to 750 tons of cast iron a year. Bloomary forges, finery forges and blacksmith shops – which produced wrought iron products – also proliferated. The bog iron industry lasted 100 years in the Pine Barrens.

In 1766 Charles Read, a land speculator, erected a string of iron furnaces and forges within the New Jersey Pine Barrens. The remote Pine Barrens was chosen as a location for these ironworks because of three factors: the abundance of bog ore found along its streams, its great waterpower and its vast stands of forest - all of which were needed to run the furnaces and forges.

Bog ore is formed when the iron rich soils of the Pine Barrens are carried into the streams and bogs by continually flowing springs. The water-soluble ferrous iron salts become oxidized by either exposure to air or by being acted upon by bacteria. The resulting hydrous iron oxide is deposited along the beds of slowly moving streams, where mixed with soil it accumulates and becomes bog ore. Bog ore is a renewable resource and under ideal conditions can replenish itself in 20 to 30 years.

Waterpower to run the forges and furnaces was made from damming the streams to create ponds. Fuel to run the furnaces came from pine trees made into charcoal by colliers. 1000 acres of pine was needed to keep one furnace fired for a year. Charcoal was manufactured by slowly burning wood in oxygen-deprived charcoal "pits". After the collapse of the iron industry charcoal continued as a Pine Barrens industry for another 100 years.

Batsto, one of the first bog iron furnaces in the Pine Barrens, was a principal munitions supplier for the Continental Army during the Revolutionary War years. Batsto, as well as other Pine Barrens ironworks, also supplied munitions for the War of 1812. The New Jersey Pine Barrens bog iron industry lasted until the middle of the 19th century when richer ore and a more efficient fuel (coal) was discovered in Pennsylvania.

PRIVATEERS AND THE AMERICAN REVOLUTION

On March 23, 1776 the Continental Congress in Philadelphia authorized privateering. A privateer was defined as a privately owned armed vessel authorized by the Congress or state government to take prizes instead of carry cargo. Privateers operating under sanction of "Letter of Marque" (license) were authorized to harass and prey on British merchant ships. A captured vessel and its cargo could then be sold at public auction and its proceeds divided among the ship's owners, officers and crew. Many privateers operated out of the remote harbors located along the Mullica River with Chestnut Neck and the Forks (an area located one mile down river from the furnace town of Batsto) being two of their strongholds.

Cargoes looted from the British also helped to outfit the Continental Army. Large warehouses to store these goods were erected at the Forks. To provide protection for the captured goods a military post was established there in 1777. During the summer of 1778 American privateers captured 22 vessels. Alarmed over the losses of their ships, and especially of those supplying their military, the British decided they had had enough.

On September 30, 1778, a British expedition left New York under the command of Lieutenant General Sir Henry Clinton and Captain Patrick Ferguson. Their task was to find and "clean out the nest of rebel pirates" at Chestnut Neck and to destroy the storehouses at the Forks and the Batsto Ironworks where armaments, camp kettles and other equipment were being manufactured for the Continental forces. The British expedition reached the area of the Mullica River on October 5, 1778. George Washington having learned of the impending attack sent Count Casimer Pulaski and his legion of 333 men to the area to assist local militia, in fending off the British. On October 6, British troops attacked Chestnut Neck. The local militia, out-manned and out-armed, quickly retreated to the woods to await reinforcements. Count Pulaski, having left Trenton on October 5, had not yet arrived in the area. The British raided and burned all ships and dwellings in Chestnut Neck. Though the British had planned to travel upriver to Batsto and the Forks, intelligence reports warned them of the imminent arrival of Pulaski and his forces and they opted to retreat. Before retreating, the British killed over 40 men who were members of Pulaski's advance force. The privateers of the Mullica River, although experiencing a setback by the British attack, were soon back in business.

COMPANY TOWNS AND TAVERNS

Around the sawmills and gristmills small settlements sprung up for the workers of these early industries. During the iron era company towns that supported the workers and their families grew around the forges and furnaces. Owned by the company, the towns often resembled feudal establishments. The owners often paid the workers in company script that could only be used at the company store.

Taverns, though not housed in the company towns, were usually built close by. The tavern or wayside inn was an important part of the early life of Pine Barrens residents and for those traveling through on horseback or by stagecoach. The tavern was the place to hear all the news of the outside

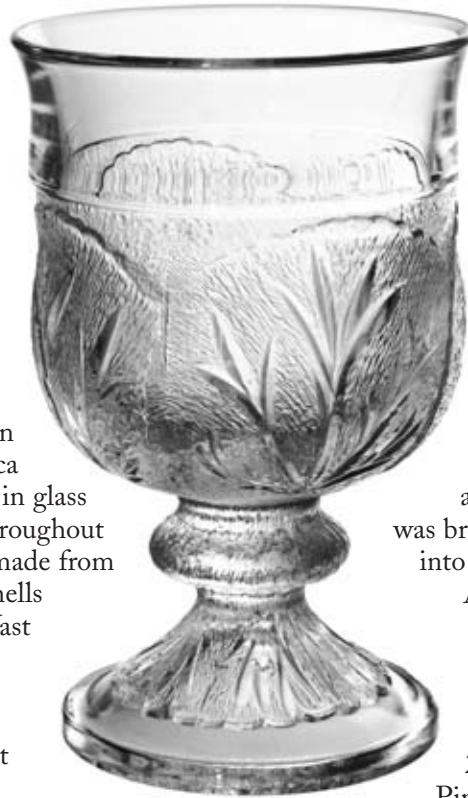
world and to discuss what was going on with your neighbors. During the war years army recruiters came to the taverns to enlist men. Weddings and other special events were held there. Taverns, most often built on stagecoach roads, were the places travelers could stop for a meal or overnight lodgings. By the mid-1800s, when the railroads began to replace the stagecoaches and when the early principal industries failed, the taverns began to close their doors.

GLASS INDUSTRY

Glass manufacture became an important industry of the New Jersey Pine Barrens beginning sometime in the 1820s. The Pine Barrens glass houses used the natural resources of the area in their production of glass. Silica (sand) is the main ingredient in glass and is found in abundance throughout the Pine Barrens. Soda Ash made from plant ash and lime from seashells could also be found nearby. Vast stands of forest provided the fuel needed to fire the glass furnaces.

The glass products made at the glass houses of the Pines included window glass, bottles and jars and specialty items like Christmas ornaments and buttons. Master glass blowers working with long hollow pipes would gather a gob of molten glass on the end of an iron pipe. In the production of window glass the blower would inflate the ball of molten glass by continually blowing and swinging the blowpipe while standing over a swing pit thus creating a cylinder that was then opened and flattened and cut into individual panes. Other glass products such as bottles were blown into the desired shape within a mold. It is said that the first Mason jar was blown in the Pinelands at Crowleytown.

The heyday of the glass industry in the Pines was between 1830-1890. Many factors contributed to its decline including distance from the developing railroads and a growing lack of fuel. The foremost reason for the decline was due to the local iron-rich sand that did not produce a clear glass. The glass produced in the Pinelands was known as "green glass" and although distinctive was not generally preferred by the end of the 19th century.



PAPER, COTTON AND CLAY

Another early, though localized industry of the Pine Barrens was the manufacture of paper. During the 1800s paper manufacture plants were operating in Harrisville (1835-1896), Pleasant Mills (1861-1915) and Weymouth (1866-1887). Prior to the mechanization of papermaking, paper had been made by hand, utilizing linen and cotton. The owners of the Harrisville plant had discovered a formula for papermaking that used salt hay as their main ingredient. Salt hay could be found in abundance in nearby marsh areas. Other ingredients used in the papermaking process included old ropes, rags, paper scraps and burlap.

The manufacture of cotton in the Pine Barrens was also a localized and limited industry. The cotton mill at Pleasant Mills operated from 1822-1856 and the mill at Atsion from 1871-1882-3. Cotton was brought to the mills and then processed into cotton yarn. The cotton mill at Atsion at one time employed 170 people and turned out 500 pounds of cotton yarn a week. Bricks were manufactured in the Pine Barrens from the 18th century well into the 20th century. The clay industry of the Pine Barrens operated from the late 1850s until the turn of the century. Two Ocean County companies, the Union Clay Works and Wheatland Manufacturing, made terra cotta sewer drain pipes and fence posts from clay mined in the area.

PINE BARRENS REAL ESTATE

Throughout the late 1800s realty development was a major business in the Pines. Thousands of acres of land were bought and sold offering prospective buyers good home sites and investment properties. Some succeeded, such as Egg Harbor City and Hammonton, but most of the Pine Barrens real estate promotions failed after too few sales. According to John McPhee in *The Pine Barrens* (published in 1967), more than a million people bought or otherwise acquired lots in the Pinelands on which no houses were ever built.

One of the more notorious of the Pine Barrens real estate schemes was a promotion to develop 1,400 acres of woodland about halfway between Tabernacle and Chatsworth. The developers pub-

lished a promotional paper called the *Paisley Gazette* that touted Paisley as the “Magic City”, an industrial center with an academy of music, conservatories, schools and colleges. In reality Paisley never consisted of anything more than a dozen or so houses, a ramshackle mattress factory and a hotel.

AGRICULTURE

Much of the soil of the Pine Barrens is considered infertile when compared to soils to the west and north. Pine Barrens soil is sandy, porous, acidic and does not retain enough moisture for most crops. Only in scattered and more southern regions, sometimes called the “shatterbelt” of the Pine Barrens, is the soil right for traditional farming, enabling commercial vegetable, grain and fruit farms to develop and thrive.

Cranberry and blueberry farming is different, because these are native fruits adapted to the conditions of the Pine Barrens. The commercial cultivation and harvesting of cranberries and blueberries have long thrived in the Pine Barrens and are considered an important part of the region’s past and present culture. The cranberry is a native North American plant that grows wild in low fields, meadows, bogs and along streams. Native Americans used the cranberry as food and for medicinal purposes. Gathered for food by the early European settlers, cranberries were first cultivated in Massachusetts around 1820 and in New Jersey sometime between 1825-1840.

Cranberries are now grown in man-made bogs utilizing the wet-harvesting method that was started in New Jersey in the 1960s. Before the advent of the wet-harvesting method cranberries were picked by hand. After 1925 they were picked using large wooden scoops. With the wet-harvesting method, the bogs are flooded and, being buoyant, the vines and ripe berries lift off the bed of the bogs. Workers then move around the flooded bogs with “beaters”



American Cranberry

mechanical cranberry machines designed to free cranberries from their vines. After being stripped from their vines by the “beaters” the cranberries float to the top of the water where they are guided onto loading conveyors, dropped into large crates on truck beds and driven to the processing plant.

Wild blueberries were also an important food for the Native Americans and early Europeans. In 1910 Elizabeth White began work with Dr. Fredrick Coville in an attempt to develop the first cultivated blueberry.

Elizabeth White was the daughter of Joseph (J.J.) White, the owner of a cranberry farm near Browns Mill called Whitesbog. She and Dr. Colville successfully cultivated the first blueberry in 1916.

Originally, blueberries were picked by hand and many still are, but the more modern method is to use a mechanical blueberry picker that straddles the rows and shakes the blueberry from the bush. Before cultivation many people in the Pines used a system they called “knocking”. “Knocking” was accomplished by strategically placing a basket under the bush and hitting the trunk with a one-foot club or rubber hose, resulting in most of the blueberries falling into the basket.

IMPACT OF THE RAILROADS

By the 1850s and 1860s railroads were becoming the preferred mode of transportation. Where the railroads went and didn’t go made all the difference for the towns of the Pines. Many of the major industrial centers of the Pine Barrens, like Harrisville and Hermann, were left behind when rail lines were not built close enough to link them to the major marketplaces. But the railroad did create new settlement opportunities on the perimeter of the Pines for several immigrant groups. Germans, Italians and Eastern European Jews settled in ethnic

communities and established towns along the rail lines running through the southern end of the Pines. The towns they established, places like Woodbine and Egg Harbor City, replicated those of their homeland. The immigrants hoped to create towns where customs, speech and recreations of their homelands could be preserved. Many of the immigrants came to farm and with the railroads nearby they were able to quickly get their farm products to market.

Egg Harbor City, settled by immigrant Germans, was first conceived when influential members of their group passed through the area on the first regular train to Atlantic City in 1854. Though the original backers hoped to attract a variety of industries to the town, agriculture and winemaking became the mainstays.

Woodbine began as an experiment, to provide a home for the wave of Eastern European Jews seeking freedom in America. In 1891, land bordering the West Jersey Railroad on the southern perimeter of the Pines was purchased for the Woodbine project. During 1892, 650 acres of farmland was cleared and twelve miles of farm roads constructed. Two factories were built but quickly failed. A school was founded in the town to teach newcomers and colony youth basic farm practices and to offer the latest in agricultural knowledge. When the school closed just prior to World War I the land and existing structures were offered to the state of New Jersey for some charitable use. The site is now used as a residential center for the developmentally disabled.

THE PINEYS

After the major industries had failed or moved away, many individuals whose families had lived in the Pine Barrens for generations stayed on and supported themselves and their families by living off the land. These individuals, often referred to as Pineys, depended largely on the cranberry and blueberry business for income but most also farmed a bit, hunted and gathered sphagnum moss, pine cones and other products in demand by florists and nurseries. They lived simple lives deep in the forest requiring little in the way of modern conveniences. Unfortunately these individuals and their lifestyle were brought into disrepute by some exaggerated, distorted publicity in the early 1900s.

In 1913 Elizabeth Kite, a psychological researcher working for the Vineland Training School for Feeble Minded Boys and Girls (now called the Vineland Developmental Center) did a two-year study on a group of people living in the Pine Barrens who were in need of public assistance.

Ms. Kite's report *The Pineys* told a story of generations of families who were criminal, illiterate, incestuous, mentally deficient, immoral and a general burden to society. Her report so incited the public that the Governor of New Jersey, James Fielder, made a special trip to the Pine Barrens to observe the people Ms. Kite had described. When Fielder returned he called a news conference where he stated the Pine Barrens should somehow be segregated from the rest of the state for the safety and welfare of the state at large. Fielder claimed that the people who lived in the Pines were a serious menace as they produced so many persons who eventually became in need of public assistance.

Shortly after Kite had published her report, her supervisor, Dr. Henry Goddard, wrote a book entitled *The Kallikak Family: A Study in the Heredity of Feeble Mindedness*. Supposedly based on extrapolated information from Ms. Kite's report, Goddard invented a family he called the Kallikaks. This invented family, all descendants from a Martin Kallikak and a nameless imbecile barmaid he impregnated and never married, were as Goddard tells it, responsible for generations of mental deficiencies, prostitutes, epileptics and drunks. Dr. Goddard's book, an attempt to prove that heredity was the sole cause of mental deficiency as well as all the rest of society's ills, became a bestseller. Though Goddard's hypothesis and tainted research did a great deal of harm that extended far beyond the New Jersey Pine Barrens, it was later discredited.

The impact of the negative publicity of the Kite report and Dr. Goddard's book created a terrible stigma for the people of the Pines. Though Ms. Kite had focused on only a small group of people living in the Pine Barrens, her study was generalized to include everyone who lived there. Even though there was an attempt to fend off the prejudicial and greatly exaggerated indictment of all the people of the Pinelands, the word Piney became a synonym for a group of anti-social characters that were dim-witted, degenerate and incestuous. In fact most of the residents of the Pine Barrens, descendants of those who worked at the bog iron furnaces, glass houses and paper mills of years gone by, are from fine families with characteristics very much like the rest of us.

Today, other than a few families who still make a living from cranberry and blueberry farming, few people who live in the Pines live entirely off the land. Paradoxically, though the Piney myth continues, many that make their home in the Pine Barrens now consider being called a Piney a badge of honor!

WATER IN THE PINES

Beginning in 1873 Joseph Wharton, wealthy Philadelphia industrialist and financier, quietly went about the Pines acquiring a number of old abandoned towns, ponds and woodlands until he had accumulated over 100,000 acres of New Jersey real estate. His plan was to dam the many Pine Barrens rivers and pump the fresh water of the Pines to the city of Philadelphia. The undertaking was blocked, however, when the New Jersey Legislature heard of the plan and enacted a measure that prevented the export of water from the state. This Act is still in force today. With his water plan thwarted, Wharton concentrated on agriculture, lumbering and cattle breeding on his New Jersey properties.



Cedar Creek

After his death the Wharton heirs attempted to sell their vast Pine Barrens land holdings to the state of New Jersey for 1 million dollars. This land deal was defeated in a referendum in 1915. In the early 1950s the United States Air Force attempted to establish a jetport supply depot on 17,000 acres of land immediately surrounding Batsto.

Recognizing the treasure of the Wharton Tract the New Jersey government quickly dismissed this plan and once more began making efforts to purchase the Wharton Pine Barrens properties. By 1956, in two separate land acquisition deals, the state of New Jersey purchased the 96,000 acre Wharton Tract for use as a state forest at a cost of 3 million dollars.

WORLD WAR I MUNITIONS PLANTS

In the waning days of World War I owners of two munitions companies, contracting with the federal government, spent millions of taxpayer dollars constructing two huge shell-loading plants

in the New Jersey Pine Barrens. With the entrance of the United States into World War I in 1917 the country's need for war materials suddenly increased. Of particular need were facilities for the loading of high explosive shells. In late 1917 the US government awarded contracts to build shell-loading plants to Bethlehem Steel and the Atlantic Loading Company.

Bethlehem Steel chose as its plant site a parcel of land located 3.5 miles south of Mays Landing. The Mays Landing plant and town that would house the workers became known as Belcoville. The Atlantic Loading Company chose a 6000-acre tract in Mullica Township, located 4 miles east of Hammonton. The Atlantic Loading Company shell-loading plant and town would be known as Amatol, named for the explosive mixture which would be loaded into the shells.

Both companies began construction of their shell loading plants and company towns in the spring of 1918. Crews worked around the clock to erect the two plants and their companion towns and after only 4 months both Belcoville and Amatol were sufficiently complete to begin production. But production at the two plants would be short-lived. With the signing of the Armistice in November 1918 the war came to an end and the two Atlantic County shell-loading plants shut down shortly thereafter.

JETPORT PROPOSAL AND BEGINNING OF CONSERVATION EFFORTS

One of the most ambitious plans for the use of the New Jersey Pine Barrens came in the 1960s. A study largely paid for by the federal government proposed the building of a city of 250,000 people and a supersonic jetport four times as large as Newark Airport, LaGuardia and Kennedy combined. The jetport proposed would have covered thirty-two thousand five hundred acres and virtually eliminated all of the Upper and Lower Plains, several ponds, a lake and a great stretch of land from what is now Brendan Byrne State Forest to the east and south towards Manahawkin.

When publicized in 1964, this project proposal united conservationists, blueberry and cranberry farmers, hunters and others who, realizing the threat to the Pinelands, began to work together on preservation efforts. Those preservation efforts finally came to fruition in the late 1970s with the establishment of the federal Pinelands National Reserve and the corroborating state legislation, the Pinelands Protection Act.

HUMAN HISTORY | Early Industries of the Pine Barrens Journal Writing

LENGTH: SEVERAL CLASS PERIODS | GRADE: 9-12

OBJECTIVES

Students will be able to...

- Describe the everyday occurrences and life of an employee of a company town in the Pine Barrens.
- Explain the role of the company town within the history of Pine Barrens settlement.
- Describe the important early industries of the Pine Barrens.
- Write a personal journal by role playing an employee of a company town of the Pine Barrens.

OVERVIEW

As early settlers moved into the Pine Barrens, they saw the resources of the Pine Barrens as raw materials as a way to make a living. As a result, many local industries began to appear which drew people together into small towns and villages. In this activity, students will research some of the various industries of the early Pine Barrens to determine the kind of lives that early settlers led. They will then write a journal encompassing one year of life on a typical company town of the Pine Barrens.

PROCEDURE

- Ask for students to volunteer sharing their journal writings with the class. Once someone has read his or her journal entry, ask the class if anyone else wrote or has had a similar experience. Use the shared entries as a springboard for class discussion.
- End the class by discussing how a similar journal entry from an employee of another industry might be similar and different. Ask the class what they could learn from reading the journals of employees of these company towns, many of which no longer exist in the Pine Barrens today.

OPTIONAL ACTIVITY

- Internet
- *A Field Guide the Pine Barrens of New Jersey* by Howard P. Boyd and *The Pine Barrens* by John McPhee

MATERIALS

- Copies of Early Industries of the Pine Barrens Journal writing Student Activity page.

NEW JERSEY CORE CURRICULUM STANDARDS

5.10.B.1, 3.2.B.5 & 3.2.D.2

WEB SITES AND ARTICLES

<http://pinelands.com/>



Cannon Industry

Early Industries of the Pines Journal Writing

Student Activity

- You will be researching the locations and the significances of some of the most important early industries of the Pine Barrens including: timber cutting and sawmills, cranberry and blueberry agriculture, charcoal making, bog iron furnaces and forges, glass factories, and paper mills. You will also read a sample journal obtained from Martha's Furnace of what life was like during this time period.
- For each industry, you should be sure to research the following:

Inquiry



1. How long did the industry exist in the Pine Barrens?
2. Where were the primary locations of the industry within the Pine Barrens?
3. What processes were involved in the production of the industry's product?
4. What natural resources were required?
5. Who were the main proprietors?
6. What was the ecological impact on the environment?



- Lying forgotten in dusty attics, or much beloved amongst our most treasured possessions, are letters, diaries, memoirs, photographs, and personal notes. Learning history through the written experiences of others can help to preserve the past and change the future. From the information that you researched, you will role-play the life of an employee of the industry in which you researched. You will write a journal covering the span of one year. In the journal you will record events and feelings associated with your daily life. You should have two journal entries per month for 12 months for a total of 24 entries. The entries should be approximately one hand written page in length.

SOME POINTS TO CONSIDER...

- How did you come to work for the industry/company town?
- How long have you worked for the industry?
- Do you have a family? If so, what do they do within the company town?
- How do you dress?
- What is in the company town? Is there a blacksmith, gristmill, school, etc.?
- Do you go to school? If so, what is it like?
- Do you travel from town to town? If so, how?
- What stories do you tell?
- What do you do for entertainment?
- What foods do you eat?
- How many people live in the town? What do other workers do?
- Where do you live? What conditions existed there?
- How are you paid?
- Where do you buy your food?
- What types of possessions do you have in your home?
- How do you hear news from places other than the Pine Barrens?
- Does anyone get sick? Is there a doctor or hospital?
- How do your life activities change from season to season?

HUMAN HISTORY | Lesson: One Good Deed

LENGTH: 2, 45 MIN. CLASSES | GRADE: 9-12

OBJECTIVES

Students will be able to...

- Write a short statement that represents a Native American “land ethic”.
- Write a short statement that represents a 1700 European “land ethic”.
- Write and negotiate a land deed.

OVERVIEW

The students will be divided into small groups. The groups will research and represent the land ethic of Native Americans of the Pine Barrens and 1700 European settlers and negotiate a land deed based on an actual Pine Barrens land deed.

PROCEDURE

(session one)

- Ask the students the inquiry questions for discussions found on the next page. (activity sheet.)
- Students will write a short statement that represent a Native American “land ethic”.
- Students will write a short statement that represent a 1700 European “land ethic”.

(session two)

- Match Native American and European Settler groups in pairs.
- Explain that each group pair will have twenty minutes to draft and agree on a deed. If the group reaches an impasse, the instructor will intervene and settle that point.
- Explain that each group pair is to appoint a representative for each side of the negotiation to present their deed agreement to the rest of the class.
- Have each group pair present their deed agreement.

OPTIONAL ACTIVITY

- Internet
- *A Field Guide the Pine Barrens of New Jersey* by Howard P. Boyd and *The Pine Barrens* by John McPhee

MATERIALS

- A brief article on land ethic
- <http://www.aldo Leopold.org/NEWSITE/about/LandEthic.pdf>
- Map or description of the PPA property
- Copy of the Deed for the PPA property

NEW JERSEY CORE CURRICULUM STANDARDS

Social Studies: 6.3, 6.4, 6.5 & 6.9

GLOSSARY

Ethics: A set of principles of right conduct.

Deed: A document sealed as an instrument of bond, contract, or conveyance, especially relating to property.

HUMAN HISTORY | Lesson: One Good Deed

WEB SITES AND ARTICLES

<http://www.news.uiuc.edu/news/04/0823land.html>

<http://www.tipiglen.dircon.co.uk/landethic.html>

<http://www.acton.org/publicat/randl/article.php?id=302>

<http://www.bilkent.edu.tr/~jast/Number8/Schweninger.html>

<http://wupcenter.mtu.edu/education/symposium/about.html>

<http://www.delawaretribeofindians.nsn.us/>

<http://www.jersey.net/~standingbear/home9.htm>

<http://www.tolatsga.org/dela.html>

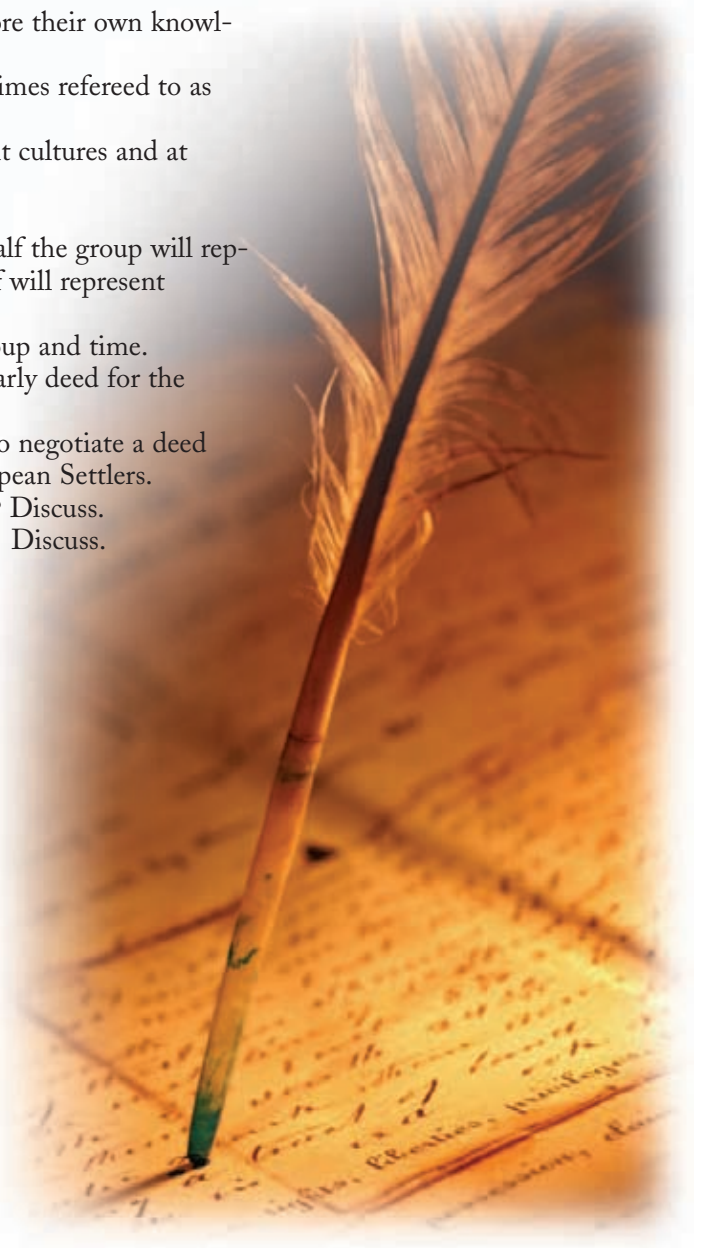
- *Fostering the Land Ethic through the legacy of Aldo Leopold*
Published in 1949 as the finale to *A Sand County Almanac*, Leopold's 'Land Ethic' defined a new relationship between people and nature and set the stage for the modern conservation movement. Leopold understood that ethics direct individuals to cooperate with each other for the mutual benefit of all. One of his philosophical achievements was the idea that this 'community' should be enlarged to include non-human elements such as soils, waters, plants, and animals, "or collectively: the land."
- "That land is a community is the basic concept of ecology, but that land is to be loved and respected is an extension of ethics." This recognition, according to Leopold, implies individuals play an important role in protecting and preserving the health of this expanded definition of a community.
- "A land ethic, then, reflects the existence of an ecological conscience, and this in turn reflects a conviction of individual responsibility for the health of land."
- Central to Leopold's philosophy is the assertion to "quit thinking about decent land use as solely an economic problem." While recognizing the influence economics have on decisions, Leopold understood that ultimately, our economic well being could not be separated from the well being of our environment. Therefore, he believed it was critical that people have a close personal connection to the land.
- "We can be ethical only in relation to something we can see, feel, understand, love, or otherwise have faith in."
- Leopold's Land Ethic
 - *What Are Ethics?*
 - People tend to use the term ethics in two different ways. Ethics help us decide how we ought to live. In their most general form, we might say that ethics are the standards we employ (among other factors) to determine our actions. They are prescriptive in that they tell us what we should or ought to do and which values we should or ought to hold. They also help us evaluate whether something is good or bad, right or wrong.
 - Leopold's example: "A land ethic changes the role of *Homo sapiens* from conqueror of the land community to plain member and citizen of it... it implies respect for his fellow-members, and also respect for the community as such."
 - Ethics explain why things are important to us. Ethics are also concerned with how and why we value certain things and what actions properly reflect those values. In this sense, ethics appear more descriptive. Just as it is possible for taste to be a neutral and descriptive term – appreciation for a work of art can be a matter of taste – ethics can operate the same way.
 - Leopold's example: "Sometimes in June, when I see unearned dividends of dew hung on every lupine, I have doubts about the real poverty of the sands... do economists know about lupines?"
 - From Dr. Michael Nelson, Professor of Philosophy, University of Idaho
"The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land." – Aldo Leopold
 - "The Land Ethic," Leopold's final essay in *A Sand County Almanac*...
"All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts. His instincts prompt him to compete for his place in that community, but his ethics prompt him also to co-operate (perhaps in order that there may be a place to compete for). The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land. This sounds simple: do we not already sing our love for and obligation to the land of the free and the home of the brave? Yes, but just what and whom do we love? Certainly not the soil, which we are sending helter-skelter downriver. Certainly not the waters, which we assume have no function except to turn turbines, float barges, and carry off sewage. Certainly not the plants, of which we exterminate whole communities without batting an eye. Certainly not the animals, of which we have already extirpated many of the largest and most beautiful species. A land ethic of course cannot prevent the alteration, management, and use of these 'resources,' but it does affirm their right to continued existence, and, at least in spots, their continued existence in a natural state. In short, a land ethic changes the role of *Homo sapiens* from conqueror of the land community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such."

Student Activity

Inquiry



1. Do you want to own a home, land, and property when you are older? Why?
2. Who first owned land in New Jersey?
3. Discuss these questions to allow the students to explore their own knowledge and opinions.
4. Explain that what they have been discussing is sometimes referred to as “land ethic”.
5. Explain that “land ethic” is different between different cultures and at different times.
6. Pass out the “land ethic” article for students to read.
7. Explain that the class will be divided into groups. Half the group will represent Native Americans of the Pine Barrens and half will represent European Settlers of the 1700’s.
8. Each group is to research the “land ethic” of their group and time.
9. Give each group a copy of the land description and early deed for the PPA property.
10. Explain that in the next class the groups will work to negotiate a deed agreement between the Native Americans and European Settlers.
11. What was the most difficult part of the negotiation? Discuss.
12. What was the biggest surprise in your negotiations? Discuss.



West Jersey Deeds, Liber AAA, p. 40

Indian Deed to
Thomas Haines,
Thomas Bishop & als
J. [Jeremiah] Basse

To all people to whome [whom] these presents shall come Wee [we] Homerson Indian Sackum, Quitowayway, Mouisunt, all Ronarque Indians and owners of the lands herein and hereto granted send Greeting. Know ye that wee the said Homerson, Quitowayway, Mouisunt all Ronarque Indians for and in consideration of the sume of ten pounds one half thereof in current silver mony [money] of West Jersey and the other moiety [moiety] in good and wares to us paid and delivered by the said Thomas Haines, Thomas Bishop and John Jennings all of the Township of Northampton in the county of Burlington within the province of West New Jersey Yeomen at and before the ensealing and delivery hereof the receipt whereof the said Homerson Quitowayway, Mouisunt all Ronarque Indians do hereby acknowledge and are sealed therewith fully satisfied contented and paid have given, granted, bargained and sold unto the said Thomas Haines, Thomas Bishop, and John Jennings the quantity of four hundred akers [acres] of land be the same more or less lying and being within the county of Burlington aforesaid that is to say one hundred akers thereof more or less bounding on John Dumbarton's lines up said Thomas Haines line of his other lands unto the said Thomas Haines his heirs and assigns forever also two hundred akers more thereof be it more or less bounding upon the Run called Ronarquet Runn unto the said Thomas Bishopp his heirs and assigns forever and the other remaining one hundred akers be it more or less bounding by Jacob Lamb's line unto the said John Jennings his heirs and assigns for ever making in the whole the aforesaid quantity four hundred akers of land. And we the said Homerson, Quitowayway, Mouisunt all Ronarque Indians for ourselves jointly and severally and for our respective survivor and survivors do hereby covenant promise and grant that we are the sole and proper owners of the said granted four hundred akers of land and premises with the appurtenances and have good right and authority to sell the same to Thomas Haines, Thomas Bishopp, and John Jennings their heirs and assigns for ever according to the true and full meaning hereof. And also that wee the said Homerson, Quitowayway, Mouisunt all Ronarque Indians and our respective successors at the Request, cost and charges of the said Thomas Haines, Thomas Bishop and John Jennings their heirs and assigns of all and every sum and sums hereafter shall and will do and perform all such Reasonable thing and things for the better securing the said granted four hundred akers of land with the appurtenances as aforesaid unto the said Thomas Haines, Thomas Bishop and John Jennings their heirs and assigns forever as by whom their heirs and assigns shall be required. In witness whereof we the said Homerson Quitowayway, Mouisunt all Ronarque Indians have thereto set our hands and seales [seals] In the year of Christ according to English act of 1703.

Homerson XX his mark Quitoway XX his mark Mouisunt XX his mark all Renarque

Signed sealed and deliver in the presence of John Woolston, Nathaniel Iups, William Petty Jr. Henry Barr,
Yawouck XX shaman Hamiserot XX
Hecato XX Wolongo XX Susaweeton XX Queetalooalum XX

Burlington May the 10th 1704 Personally appeared before me Thomas Revell Esq^r [Esquire] Judge of the Inferior Court of Common Pleas. John Woolston who being duly sworn did declare that he saw the persons within named syne [sign] seal and deliver this as their act and deed and the rest of the evidences named at the same time signed as evidence there unto

Jurat Coram [sworn before] me Tho Revell Judge of Common Pleas

James Hunt, Great March, August the same of mine the same

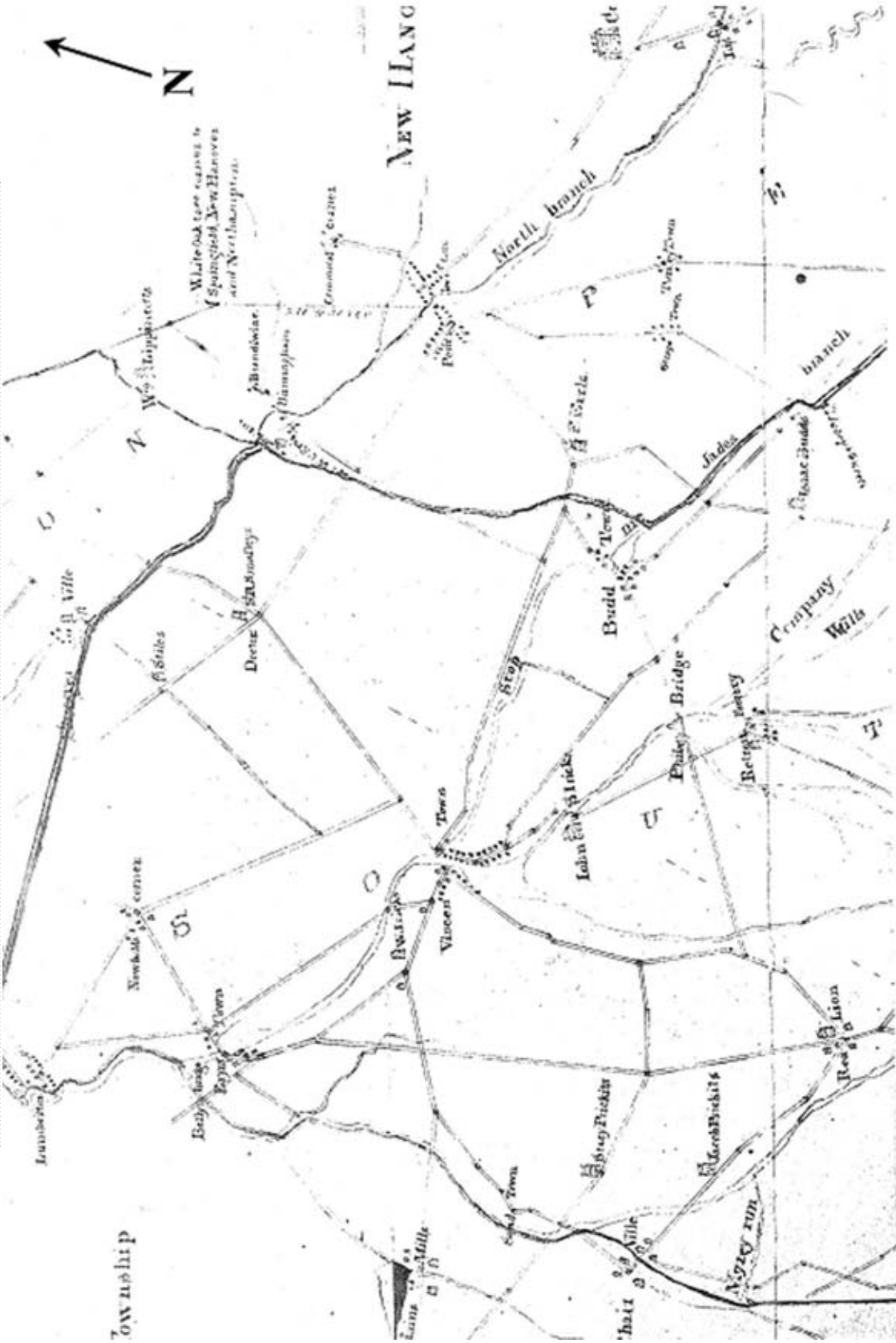
Great Court in the Chancery Judge of the

To all people To whom these presents shall come We Demetrius
Indian Sachem Quilowaway Mowjunt ab Ronarques Judiaus and owner
of the lands herein and hereby granted send greeting Know ye that we the
said Demetrius Quilowaway Mowjunt ab Ronarques for and in consideration
of the sum of ten pounds one halfe thereof in Current Silver money of West Jersey
and the

and the other parts in good Goods and wares to us paid and delivered by Thomas Dando Thomas
shop and John Jennings all of the County of Northampton in the County of Burlington within the pro-
vince of West New Jersey Dando at and before the executing and delivery hereof the receipt whereof
the said Demetrius Quilowaway Mowjunt ab Ronarques do hereby acknowledge and our Selves the
said fully satisfied contented and paid have given granted bargained and sold and by
these presents do fully clearly and absolutely give grant bargain and sell unto the said Tho-
mas Dando Thomas Dando and John Jennings the quantity of four hundred acres of land
the same more or less lying and being within the County of Burlington aforesaid that to wit
one hundred acres thereof more or less bounding on Dorset Dumbells line's said Thomas Dando
line of his other lands unto the said Thomas Dando his heirs and assigns for ever also one
hundred acres more thereof so it more or less bounding upon the Run called Ronarques
Run unto the said Thomas Dando his heirs and assigns for ever and the other remaining
two hundred acres be it more or less bounding by Dorset Dumbells line's unto the said
Jennings his heirs and assigns for ever making in the whole the aforesaid granted four
hundred acres of land And we the said Demetrius Quilowaway Mowjunt ab Ronarques
our Selves joyntly and severally and for our Respectful Successors do hereby
covenant promise and grant that we are the sole and proper owners of the said granted
four hundred acres of land and premises with the appurtenances and have good right and
authority to grant bargain and sell the same to the said Thomas Dando Thomas
shop and John Jennings their heirs and assigns for ever according to the tenor and
true meaning hereof And also that we the said Demetrius Quilowaway Mowjunt ab
Ronarques to our Respectful Successors at the Request rest and charge of the said Thomas
Dando Thomas Dando and John Jennings their heirs and assigns at all and every
time and times hereafter shall and will do and performe all such Reasonable thing and things
right for the better securing the said granted four hundred acres of land with the
appurtenances as aforesaid unto the said Thomas Dando Thomas Dando and John
Jennings their heirs and assigns for ever as by their said Deeds or assigns shall be
required In witness whereof we the said Demetrius Quilowaway Mowjunt ab Ronarques
have hereunto set our hands and Seals In the year of first arriving to English
year 1703

Demetrius his marks Quilowaway his marks Mowjunt his marks Ronarques
Signed Sealed and delivered in the presence of John Woolston Nathaniel
Nathaniel Frey William Potty Dr. Duane Burr Mawcutt 2 Y Kaoman. Amstrot
Berthalo Wolougo Susawooten Quodlakookialum
Burlington May the 10th 1704 Personally appeared before me Thomas Rowell Esq. Judge
of the Superior Court of Common Pleas John Woolston who being duly Sworn did declare
that he saw the persons within named sign Seals and Deliver the abovesaid and did
and that the Rest of the Evidence named at the same time and in the abovesaid
unto
Great Court in the Chancery Judge of Common Pleas

1835 MAP SHOWING VINCENTOWN



Found at the State Archives in Trenton, this map shows Vincentown and several of the larger hamlets and residences around it. Note the home of John Stockton Irick, clearly noted on Retreat Road and the variant spelling of "Stop Me Jades" Creek. The Bishop-Irick farmstead is not noted. [NJ State Library, Map J912.961 #E111]

HUMAN HISTORY | Lesson: Back Then in the NJ Pine Barrens

LENGTH: THREE CLASS PERIODS | GRADE: 9-12

OBJECTIVES

Students will be able to...

- Research the history of the Pine Barrens.
- Identify some key historical and geological events in the history of the Pine Barrens.
- Build a pictorial time line depicting these events.

OVERVIEW

Visual displays of our natural history attract students to museums. What has happened in our past? How are times different then and now? What did the land look like? Little glimpses into the past inspire the creative mind. This cooperative endeavor will have students preparing one portion of a whole class project resulting in a Pine Barrens Discovery Time Line allowing students to travel back in Pine Barrens time visually.

In this activity students will be asked to research historical and geological events that have occurred in the past in the Pine Barrens. Initially they will be asked to prepare a paragraph detailing the key event(s). Then they will be asked to prepare an illustration, collage, or three-dimensional depiction of the event that was researched.

The end product will be a series of time sequenced illustrations that can be strung on a wire along the edge of a wall, taped along a hall way, or sequenced as individual birthday cards celebrating those key historical or geological events that were researched in chronological order.

Students will finally stand at their position in the time line and take their classmates back in time to give them a glimpse of what life was like in the Pine Barrens “back then.” Presentations can be from past to present or from present to past. Students can be encouraged to bring in props, create poems, or design an interactive illustration where pieces of the illustration are added as they explain their event. Remember to place dates on the time line before students start their presentations.

PROCEDURE

- Engage students in the project. Tell them they have the chance to travel back into the Pine Barrens past in a special Time Machine. They can go back in time from the 1990's to 200 million years ago. Where in time will they stop the Time Machine? When they look around what will they see? What kind of weather is going on? Who is living there? Really play the role and build up interest.
- The Burlington county Library System has a Time-line History of the Pinelands that can be a local resource and starting place for identifying some key times. Let students know that they are resourceful individuals who can find background information in a variety of places.
- Give them one day in the Media Center or one evening at home on the Internet to gather information about their assigned time.
- When they return with their information have them convert their words into illustrations. A single sheet of copier paper, construction paper or cardstock might be appropriate.
- Encourage students to keep their illustration simple and uncluttered with lots of wording.

MATERIALS

- Variety of colored papers
- Scissors
- Rulers
- Glue/ Tape
- Wire or Masking Tape
- Encyclopedias
- Almanacs
- Newspapers

NEW JERSEY CORE CURRICULUM STANDARDS

5.1, 5.2, 5.3 & 5.10

GLOSSARY

Chrononauts: time watchers.

Timelines: presentation of a chronological sequence of events along a drawn line that enables a viewer to understand temporal relationships quickly.

WEB SITES AND ARTICLES

<http://www.bcls.lib.nj.us/pinelands/history.shtml>

<http://www.scc.rutgers.edu/njh/>

<http://nerrs.noaa.gov/JacquesCousteau/History.html>

<http://www.njparksandforests.org/education/index.html>

http://www.state.nj.us/state/history/topicalguideindex_t.html

<http://www.njtrails.org/selectwalk.php?RegionID=2>



Batso Village

Student Activity

Inquiry



1. How does a timeline help us to study events and put them in perspective?
2. Are there any trends that can be identified?
3. Are any of the developments over time coincidences or are there cause and effect relationships?
4. What do you suppose the Pine Barrens might look like if the Time Machine could take you one hundred years into the future? One thousand years?

A TIME-LINE HISTORY OF THE PINELANDS

- **170 to 200 million years ago** Atlantic Coastal Plain begins to form.
- **100 million years ago** Start of sequence in which the Atlantic Ocean repeatedly covered the coastal plain and then withdrew, depositing layers of geologic material now beneath the Pinelands.
- **10,000 years ago** End of the last Ice Age; present plant and animal populations begin to develop; earliest native Americans appear.
- **1624** Exploration of coastal inlets and bays reported.
- **1674** Earliest permanent European settlers occupy area north of present Burlington County line.
- **1700–1760** Many hamlets and coastal towns settled based on shipbuilding, commerce and timber-based trades.
- **1700 – present** Transportation network, roads and railroads, built throughout the Pinelands. U. S. Route 9, the Shore Road, is an historic road that runs along the coast in what is now the Pinelands National Reserve.
- **1758** Brotherton Reservation, this country's first Indian reservation, is established at Indian Mills in Shamong Township, Burlington County.
- **1760 - 1860** Iron, charcoal, and glass industries flourish.
- **1830** New Jersey census lists 655 sawmills in the state; today there are about 75 sawmills in the state.
- **1840** John Webb establishes New Jersey's first cranberry bog in Ocean County near Cassville.
- **1864** L.N. Renault Winery established in Galloway Township.
- **1878** Joseph Wharton, a Philadelphia financier, proposes exporting Pinelands water to Philadelphia. The New Jersey legislature rules against this.
- **1905** New Jersey State Forest Service established.
- **1916** Elizabeth White of Whitesbog, Burlington County, in cooperation with Dr. F. V. Coville of the U.S. Department of Agriculture, develops the first cultivated blueberry.
- **1917** Fort Dix, U.S. Army training base in Burlington and Ocean Counties, is the first major federal facility established in the Pinelands.
- **1920's** Medford Lakes, Burlington County, is developed as a summer colony with many of its buildings designed in a log cabin style.
- **1920's** Russian immigrants settle at Rova Farm in Jackson Township, Ocean County. This is one of several ethnic settlements located in the Pinelands today.
- **1926** The first State Forest Nursery for growing tree seedlings for sale to landowners throughout New Jersey is established.
- **1928** Emilio Carranza, a Mexican aviator on the return leg of a goodwill flight between Mexico and New York, dies in a Pinelands airplane crash during a thunderstorm on July 13th. A memorial to him is located on Carranza Road in Tabernacle Township, Burlington County. There is an annual memorial service held at the monument on the Saturday closest to the date of his crash. The service is open to the public.
- **1929 - 1941** The Blue Comet, New Jersey Central's luxury coach train, provides service between New York and Atlantic City and stops at Pinelands towns like Lakewood, Lakehurst, and Hammonton.
- **1948** A program of prescribed burning, a practice that is continued today, is established in New Jersey.
- **1955** State of New Jersey acquires 100,000-acre Wharton Tract as state forest.
- **1963** A series of wildfires in the Pinelands burns over 183,000 acres during the weekend of April 20-21. This is the largest wildfire in the recorded history of the region.
- **1978** Section 502 of the National Parks and Recreation Act establishes the Pinelands National Reserve.

HUMAN HISTORY | Lesson: Pine Barrens Legends Presentation

LENGTH: SEVERAL PERIODS | GRADE: 9-12

OBJECTIVES

Students will be able to...

- Research a legend of the Pine Barrens and retell it.
- Predict the conditions within a society that created the various legends of the Pine Barrens that exist today.
- Compare and contrast characteristics of folktales, myths, and legends of the Pine Barrens.

OVERVIEW

Students will work together in collaborative groups to research a local legend or folktale of the Pine Barrens. They will then create and act out a short skit about the legend for the rest of the class.

PROCEDURE

- Students present their folktale to the class.
- Ask the students to define the term folktale.
- Ask if anyone would like to share a short folktale they know.
- Pass out and review Pine Barrens Legends Presentation Student Activity page.
- Divide the students into small groups to research Pine Barrens Folktales.
- Students present their folktale to the class.

MATERIALS

- ❑ Boyd, Howard. *A Field Guide to the Pine Barrens of New Jersey*. Medford, NJ: Plexus Publishing, Inc., 1991.
- ❑ Cohen, David. *The Folklore & Folklife of New Jersey*. New Brunswick, NJ: Rutgers University Press, 1983
- ❑ Homer, Larona. *Blackbeard the Pirate and Other Stories of the Pine Barrens*. Wilmington, DE: The Middle Atlantic Press, Inc., 1985
- ❑ Homer, Larona. *The Shore Ghosts and Other Stories of New Jersey*. Wilmington, DE: The Middle Atlantic Press, Inc., 1981.
- ❑ McMahon, William. *Pine Barrens Legends, Lore and Lies*. Wilmington, DE: The Middle Atlantic Press, Inc., 1980.
- ❑ Internet

NEW JERSEY CORE CURRICULUM STANDARDS

3.3.D.2, 3.3.A.3, 3.3.B.3, 3.3.D.1 & 3.3.D.3

GLOSSARY

Folktale: A story or legend forming part of an oral tradition.

WEB SITES AND ARTICLES

<http://pinelands.com/>
<http://pinelands.com/>
www.weirdnj.com

Student Activity

People told folktales long before there were books, newspapers or televisions for entertainment purposes. Folktales were told as a way to bring news from one village to the next. Many times, these stories helped people learn and understand the customs of their village. Folktales usually tell a lot about the lives of the people who create them. For instance, the early American settlers believed in hard work. Many of their stories are about rugged individuals like Paul Bunyan and Johnny Appleseed, who were strong and brave and accomplished a great deal. Each storyteller breathes a different life into a story. The storyteller is always making choices; where to begin, where to end, where to add a dash of humor or a sprinkling of suspense. There are many folktales specific to the Pine Barrens.

In this activity you will be researching one of these folktales. You will then retell the tale by creating and performing a short skit for the rest of the class!



Inquiry

1. What is the main idea of the story?
2. Who are the main characters in the story?
3. What are the important events in the story?
4. How does the story end?

HUMAN HISTORY | Lesson: Protection in the Pines

LENGTH: SEVERAL CLASS PERIODS | GRADE: 9-12

OBJECTIVES

Students will be able to...

1. Review the events leading to the Comprehensive Management Plan (CMP).
2. Decide what were key factors in the development of the CMP.
3. Discuss how the plan could have been different and how that would have changed the present day Pine Barrens.

OVERVIEW

Students will review the CMP, determine what the key factors in the development of the plan were and discussing how the plan could have different.

PROCEDURE

- Students research the events that could have / did impact the Pinelands Ecology.
- Students will read and review the **Protection of the NJ Pinelands** article.
- In groups, students will determine the key factors in the article.
- In groups, students will discuss the different interest groups and political concerns.
- In groups, students will propose what they would change and how it might have made the Pine Barrens different.

OPTIONAL ACTIVITY

Take the students to a Pinelands Commission meeting.

MATERIALS

- Copy of *Protecting the New Jersey Pinelands: A New Direction in Land-Use Management* (Paperback) by Beryl Robichaud Collins and Emily W. B. Russell

NEW JERSEY CORE CURRICULUM STANDARDS

5.1A & 5.10 B

GLOSSARY

Pinelands Commission: The Mission of the New Jersey Pinelands Commission is to preserve, protect, and enhance the natural and cultural resources of the Pinelands National Reserve, and to encourage compatible economic and other human activities consistent with that purpose.

Takings: A government action assuming ownership of real property by eminent domain.

Pinelands Protection Act: The Pinelands Protection Act designated about 900,000 acres of the Pinelands National Reserve as the state Pinelands Area, and put land use planning for these lands in the hands of the New Jersey Pinelands Commission. The balance of the Pinelands National Reserve falls under the jurisdiction of New Jersey's Coastal Area Facilities Review Act (CAFRA), a much weaker body of regulations that govern development along the Jersey Shore.

UNESCO Biosphere Rescue: Biosphere Reserves are areas of terrestrial and coastal ecosystems promoting solutions to reconcile the conservation of biodiversity with its sustainable use. They are internationally recognized, nominated by national governments and remain under sovereign jurisdiction of the states where they are located. Biosphere reserves serve in some ways as 'living laboratories' for testing out and demonstrating integrated management of land, water and biodiversity. Each biosphere reserve is intended to fulfill three basic functions, which are complementary and mutually reinforcing: **A conservation function:** To contribute to the conservation of landscapes, ecosystems, species and genetic variation; **A development function:** To foster economic and human development which is socio-culturally and ecologically sustainable; **A logistic function:** To provide support for research, monitoring, education and information exchange related to local, national and global issues of conservation and development.

Pinelands Comprehensive Management Plan (CMP): As prepared and upheld by the Pinelands Commission – the land use and development plan for protection, preservation and management of the NJ Pinelands.



Protection in the Pines

Student Activity

1. Make a presentation of proposed changes.
2. State the key factors in the formation of the CMP

PROTECTION OF THE NJ PINELANDS

To anyone who travels the seemingly endless network of sand roads and fire break trails through the extensive upland forests and swampy lowlands of the Pinelands, it is difficult to comprehend that the integrity of this nearly 1,000,000 acre ecosystem was nearly undone by the wave of development that has approached this region from the west, east and north for decades. The year was 1979 when the state, in conjunction with the federal government who acted the year before, finally put in place the legislation necessary for protecting the Pinelands. It really is a miracle that, despite pressure and influence from dense population centers in the mid-Atlantic and northeast, the Pinelands National Reserve came to be and that, despite continued serious threats, has persisted as a largely intact system. Over the past 150 years, threats have come from various industries and ideas. Below is a timeline of these events. Your job is to probe into these and other issues that threatened the regions ecological integrity and decide which would have transformed the area most dramatically. Describe the events that occurred so that each issue did not result in ecological devastation. Your instructor may ask you to rank them or simply choose one and describe fully the effects (real or potential) brought on as a result.

TIMELINE

- **Late 1800s:** Businessman Joseph Wharton purchases thousands of acres with intentions of supplying Philadelphia with drinking water.
- **Early 1900s:** Blueberry and cranberry operations continue to develop in the heart of the Pinelands.
- **Late 1940s and early 1950s:** NJ population increases by 25%.
- **1955:** Garden State Parkway opens and coastal development enters an intense phase.
- **1960s:** Decade of controversy among several special interest groups and conservation organizations regarding the future of the Pinelands.
- **1965:** Pinelands regional Planning Board supports the development of the world's largest Jetport and adjacent New City to be built on thousands of acres in the Pinelands.
- **1969:** An additional 69,000 people are now living in the Pinelands.
- **1972:** State legislation appoints Pinelands Environmental Council to oversee 300,000 + acres in the Pinelands. Public and private interests clash and the Council does not make it to the next decade.

As a follow up, you are asked to review the three legislative proposals described by Collins and Russell in *Protecting the NJ Pinelands* and answer the question, did the state of NJ get it right, that is, is the current system the best? Are there any improvements you would recommend or elements you would eliminate? See below for the names of the proposals to be reviewed.

THREE LEGISLATIVE PROPOSALS

- Florio Proposal
- Forsythe-Hughes Proposal
- Case-Williams Proposal

CMP PINELANDS MAP

