NEW DISCOVERIES AT OLD PLACE
The Story of the Old Place Neck Site, Staten Island, New York
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INTRODUCTION TO THE OLD PLACE NECK SITE

The Old Place Neck Site is in New York City on Staten Island in an area historically known as Old Place. Old Place is in the northwestern part of Staten Island, near Goethals Bridge. New York City today seems an unlikely place to find a Native American site used thousands of years ago. The city has transformed itself many times over the last few centuries and the history of its earliest residents has seemingly disappeared beneath the streets and buildings of a growing city. Yet, fragments of ancient landscapes still survive in some unexpected places. Archaeologists working with many partners to identify important cultural resources along a planned natural gas pipeline recently discovered one of these sites. The Old Place Neck Site contained thousands of artifacts and other evidence that help us understand the people who visited and lived on Staten Island in the distant past. The site existed in a landscape of woodlands, streams, creeks, and vast stretches of tidal marsh very different from today’s world of streets, neighborhoods and factories. Its highways were well-worn foot-trails, the Hudson River, tidal creeks and bays. This rich environment supported many generations of Native Americans for thousands of years before the first European explorers arrived in North America.

This is the story of the Old Place Neck Site: how archaeologists found it and what they’ve learned about the history of Staten Island’s first peoples by studying the artifacts and features they left behind. The site provides a glimpse into the lives of Native Americans and later Euro-American settlers. Studies of the site have made an especially important contribution to our understanding of Native American history in New York City. Few places within the city’s limits remain untouched by development. The discovery of the Old Place Neck Site is a reminder of both the enduring legacy of the area’s first peoples and the unexpected places where evidence of their lives remain hidden beneath our feet.

People learning about archaeology often have questions about what archaeologists do, why they work in certain areas, and how they learn about people who lived in the past. This booklet provides some answers to these questions as part of the story of the Old Place Neck Site. Chapter 1 presents an overview of the archaeology and a summary of what archaeologists have learned about the people who lived at Old Place Neck. Chapters 2 through 12 present more detailed information about the process of archaeological research and technical information about the different parts of the investigations. Terms in italics are included in the glossary on Page 59.

CULTURAL RESOURCE MANAGEMENT

Although many people associate archaeology with work done in museums or at universities, most professional archaeologists in the United States work in the field of Cultural Resource Management (CRM)—the research, conservation, and management of cultural resources within a regulatory framework that includes The National Historic Preservation Act (NHPA). Archaeologists, architectural and industrial historians, and other professionals work together with government, industry, Native American tribes, and other interested parties to preserve pre-contact and post-contact cultural resources threatened by ground-disturbing activities.

CRM professionals assist government agencies and other organizations to identify, assess, and preserve important cultural resources that may be affected by projects funded or permitted at the federal or state level. They act as intermediaries between those planning a development and the government agency in charge of making sure all cultural resource regulations and laws are followed.

When disturbance of significant sites cannot be avoided, CRM archaeologists work with other groups to recover important information about these sites before they are damaged or lost.
Archaeologists work all over the world studying people and the places they once lived. Some of these studies are done through colleges and universities and focus on places where archaeologists know important sites are located. Other studies are done to find and preserve sites where new construction or development that might disturb important sites is planned. The archaeology at Old Place Neck is an example to the second type of study, called “cultural resource management”. Cultural resource management studies are often required by federal, state, and city laws created to preserve places that are significant to our national or local history.

So why were archaeologists looking at Old Place Neck? When Spectra Energy proposed building a new 20-mile natural gas pipeline called the New Jersey-New York Expansion Project between Manhattan and Linden, New Jersey, the company needed to know: are there any important archaeological sites located where the pipeline would be built? To answer that question, Spectra Energy worked with archaeologists to investigate the area. Archaeologists from The Public Archaeology Laboratory, Inc. (PAL) first researched the area to understand whether sites might still be found along the pipeline corridor. Some areas that would have been important sites are wet, rocky or steep, or were located far away from places for people to visit or live because they were disturbed by later development or natural changes. Other areas have been spared from construction, but would have been unlikely places for people to visit or live because they were too wet, rocky or steep, or were located far away from important resources people needed to survive. PAL’s research into local histories, maps, and information about the natural environment focused on those places that matched patterns where other archaeological sites have been found and where the evidence of sites might still survive below the ground.

The second part of the archaeological studies involved a series of field surveys of the places most likely to contain important sites. In the spring of 2011, archaeologists dug a small number of test pits, roughly 1.5 feet by 1.5 feet across and 3 to 4 feet deep, using shovels and trowels. All the soil from the test pits was screened through fine mesh to catch and collect any artifacts. Archaeologists examined the soils in each test pit for any signs of features, such as firepits or buried stone walls. The locations of artifacts were carefully recorded and all the collected material was brought back to PAL’s laboratory in Rhode Island for analysis. PAL archaeologists discovered a small number of stone artifacts from the time before the arrival of the first European explorers and settlers, called the Pre-Contact Period. The Pre-Contact Period extended from the time of the earliest Native American settlement of the region, around 12,000 years ago to around 400 years ago. The archaeologists also found brick, mortar, plaster, window glass, and nails at Old Place Neck, along with fragments of ceramic bowls and plates and broken tobacco pipes. These are remnants of buildings which once stood on the site and the refuse of the people who lived or worked in them. They date to the time after the arrival of Europeans in North America around 1600, which archaeologists call the Post-Contact Period.

PAL returned to the Old Place Neck Site in the summer of 2011 to take a closer look and collect more information about the age of the site, what people were doing there, and where the different parts of the site were located within the planned pipeline construction area. The second survey showed that the site contained many stone tools, small chips of stone (flakes) created when stone tools were made, remnants of small structures such as wigwams or drying racks for meat, fish or animal hides, and food remains. PAL also discovered artifacts spanning the 1600’s to the 1900’s. Spectra Energy, working with archaeologists at PAL, the New York State Historic Preservation Office, New York City Landmarks Preservation Commission, and the Federal Energy Regulatory Commission agreed that the discoveries at the Old Place Neck Site were important. Engineers at Spectra Energy redesigned parts of the pipeline project to avoid as much of the archaeological site as possible. For the parts of the site that could not be avoided, the archaeologists from the State and City of New York, the Federal Energy Regulatory Commission, and Spectra Energy agreed that archaeological excavation could recover much of the important information contained within the site before the pipeline was built.

Spectra Energy and PAL formed a team of specialists to collect and analyze many different types of information about the site as part of the excavation. PAL also worked with Native American Tribes and descendant groups with ancestral homelands in New York City to understand any concerns they might have and share information about the archaeological site. Although many people think of archaeology as digging, much of the time spent in an investigation takes place in laboratories and involves scientists in many different fields. PAL worked with botanists, animal bone specialists (faunal analysts), geologists, physicists, chemists, and metallurgists (scientists who study the composition of metals) to understand the people who visited and stayed at Old Place Neck at various times over the last 10,000 years. Archaeologists work with so many different specialists because so much of the material left behind by people has decayed and disappeared through time. You can think of their work as trying to put a complicated puzzle together when most of the pieces are missing. For sites that were used many times by different people like Old Place Neck, it can be like trying to put many puzzles back together when all of the remaining pieces are jumbled together. Specialists can provide important clues (data) that help archaeologists sort the jumble out and answer the basic questions of who was at the site, when they were there, and what they were doing while they stayed.

Several big questions about Native American life on Staten Island remain. The island can be viewed as a crossroads where the Native American cultures of New England, the Hudson River Valley, Long Island, coastal New Jersey, and the Delaware River Valley intersected. And Old Place Neck Site was a crossroads where the Native American cultures of New England, the Hudson River Valley, Long Island, coastal New Jersey, and the Delaware River Valley intersected. Old Place Neck Site was a place many different people visited for brief periods.

**Old Place Neck Site on Staten Island**

Artifacts used for processing foods and other materials included drills, other perforating tools, scrapers, and knives.
intersected. Were the Native peoples living on the island part of one or more of these cultural areas? Did the influence of neighboring cultures on local groups change through time? The studies of the Old Place Neck Site provide partial answers to these questions and add a few more pieces to the puzzle in place.

What the research team discovered through their work at the Old Place Neck Site is that this was a place many different people visited for brief periods. Some of those visits may have only lasted a few hours. Others probably extended over several weeks. The earliest evidence for Native American visits to the site is a type of stone spear or dart tip known as a Dalton Point, made almost 10,000 years ago. No hearths, firepits, or other types of features from this period were found, and the spear point may have been lost or discarded by a hunter passing through the area. At this time sea levels were quite low, but rising as the world’s climate warmed following the last ice age. The marshes and wetlands that would later attract people to the shores of Staten Island were absent. Some archaeologists believe that Dalton Points were made by people moving into the Northeast from the south as the region’s first Native Americans began adapting to a changing climate and environment.

Several thousand years passed before the next use of the site left enough evidence for archaeologists to identify. Around 6,200 years ago, Native Americans stayed at the site long enough to gather edible roots (tubers) from arrowhead plants growing in the developing wetlands around the site. They dug a deep hole in the earth and roasted the tubers over hot rocks placed in the pit. Microscopic residues of grasses were found inside the pit and may have been used to wrap the tubers to keep them from burning inside the earth oven. No recognizable stone tools from this visit were found at the site. This may seem strange, but the types of tools archaeologists can date to different time periods by studying their shapes and forms were mostly used in hunting and fishing. Evidence for collecting and preparing plants usually comes from analysis of features or microscopic residue left in the soil. Plant collecting and cooking sites are harder to find than hunting sites, but were probably an equally important part of Native American life for thousands of years.

By 5,000 years ago the rate of sea level rise in the region started to slow and rich coastal wetlands formed around parts of Staten Island. Native American populations in the region were growing rapidly. People stayed at Old Place Neck more often and for longer periods of time between 5,000 and 2,700 years ago. Dozens of tall and narrow stone dart tips (projectile points) made from a type of stone called argillite were found at the site. Although argillite stone is found deep below the ground surface on Staten Island, it was probably not accessible from ledges or boulders in the area. The same argillite stone was quarried by Native Americans living in the Delaware River Valley, where ledges of argillite can be found above the ground surface. The shape and size of the narrow dart tips, called Lackawaxen Points, found at the Old Place Neck Site are also very similar to tools found by archaeologists along the Delaware River. The people who stayed at the site during this period likely came from the south and west and maintained close ties with groups living in the interior of New Jersey and eastern Pennsylvania. This connection between the people living on Staten Island and in the Delaware River Valley is apparent for later visits to the Old Place Neck Site, as well. Blood residue of both bear and eel was discovered on the Lackawaxen Points, indicating that they were used in both the hunting of large game and fishing. Both bear and eels were best hunted or trapped in the fall months of the year.

At least one other distinct group of people stayed at the site between 3,700 and 2,700 years ago. Archaeologists found several caches of stone tools and the materials used in making stone tools at Old Place Neck. Archaeologists discovered several dozen broad stone knives placed together in a small area. These knives are part of what archaeologists call the Susquehanna Tradition, named for the Susquehanna River in east-central Pennsylvania and western New York State where they were first discovered. Caches are tools and materials left intentionally at a site for later use. In some cases, the people who made these tools and collected the materials never returned to claim them. That is what appears to have happened at Old Place Neck. Like the Lackawaxen Points found in other parts of the site, most of the broad knives were made from argillite. A smaller number of the tools were made from a reddish brown stone called jasper which was collected as cobbles from nearby stream beds. Archaeologists believe the Native Americans of the Susquehanna Tradition were a part of a distinct culture in eastern North America. They often lived near major rivers, captured eels, shad, and alewines when these fish migrated upstream to spawn, and ate seeds from grasses and other plants that grew along floodplains. The Susquehanna Tradition tools found at the Old Place Neck Site seem to fit parts of that pattern. Residues of grasses were discovered on one of the broad knives and it is likely that they were used to scrape seeds from the tough stems and hulls of these plants. The caches of knives may have been specialized tools and were left at the site for use during the following year’s harvesting of grass seeds.

Native Americans returned to Old Place Neck around 2,400 years ago. These people brought clay cooking pots to the site and collected hickory nuts and walnuts from the woodlands surrounding the site. A large platform made from slabs of flat stone was heated over wood charcoal to roast the nuts during the fall months. Specialists who studied the plant pollen from the wetlands near the site were able to show the local forest was very open during this time and many herbs and grasses were growing between mature trees. This type of forest may reflect the impact of Native Americans on the local environment. Archaeologists and other specialists believe that Native Americans intentionally burned brush, brambles and small trees in forests around their settlements to improve the habitat for game animals and to make hunting more efficient. Old Place Neck does not appear to have been a long term settlement during this period. Instead, it was likely used by a family or small group foraging in the woodlands for nuts and other foods to carry back to their camp somewhere nearby.
The site was probably abandoned for 1,000 years before the next visit. Around 1,300 years ago and then again around 1,100 years ago small groups of people stayed at the site briefly. They left behind two small firepits with small fragments of animal bone, raspberry and blackberry seeds, and acorn nuts. The plants found in these small cooking pits show both visits happened during the late summer or early fall. Archaeologists found small flakes of jasper that suggest these people were using the local cobbles to make stone tools while sitting around their fires. The last Pre-Contact Period use of Old Place Neck happened around 750 years ago. Archaeologists discovered the remains of a smudge pit used at this time. Smudge pits are very deep and narrow holes in the ground that were filled with smoldering wood. They allowed just enough air in to keep the wood burning slowly and producing a lot of smoke. Smudge pits were used to repel biting insects and cure (preserve) the animal hides used for clothing and containers.

Archaeologists discovered traces of the time when European settlers arrived on Staten Island in the 1600s. The Contact Period is what archaeologists call this important span when Native Americans and Europeans encountered each other. Small pieces of flint stone from France or England were found at the Old Place Neck Site. Thousands of flint cobbles were carried from Europe to the New World as ballast in the holds of ships. Ballast is material used to weigh down and stabilize empty ships sailing across the oceans. The ballast was thrown away when the ships arrived in New York, Boston and other ports and replaced with trade goods for the return trip to Europe. Although the flint had little value to the sailors, it was a good material for making stone tools and some of it was used by both Native Americans and early colonists. The flint found at Old Place Neck was fashioned into gunflints for black powder firearms. The way the flint was worked is similar to traditional Native American technology, so these small artifacts may represent a return to the site by the area’s original inhabitants. Small pieces of brass and copper sheets and a fragment of a copper tool were also found at the site. These items also suggest that Native peoples visiting the site were trading with the Dutch and English settling along the shores.

Staten Island and Old Place began to change dramatically in the years before the Revolutionary War. Farming on Staten Island expanded to take advantage of trade with Caribbean sugar plantations. The sugar plantations had to import much of their food because the farm land on the islands was devoted to sugar cane. The people working in the fields on both the farms in New York and the sugar plantations in the Caribbean were enslaved Africans. By the early 1800s’s mills were being built in northwest Staten Island. The first mill in Old Place was built in 1803, just south of the site. The flour mill operated through the 1860s and was later modified to process coconut shells and iron ore. The brick, plaster, nails and other building debris found by archaeologists may have been part of the later mill works, but no surviving maps or documents help identify the building. It was likely demolished when Goethals Bridge Road was built in the 1920’s, removing the last surviving historic building from the site.

As you can see, there are many stories to tell about the Old Place Neck Site. This place was used by many different people for many different reasons. Read on below to learn about the techniques used by the research team and explore the remarkable history of the site in more detail.
WHAT ARE CULTURAL RESOURCES AND WHY ARE THEY IMPORTANT?

A cultural resource may be anything that shows evidence of past human activity. It can be a place, object, or structure that has archaeological, architectural, or other significance to American history and culture. Cultural resources represent the continuity of events from the earliest evidence of humans to the present. Ruins that are thousands of years old, a nineteenth-century farmstead, a scatter of stone tools, and an old road are examples of potential cultural resources. Those from before the use of writing or before Native Americans had contact with Europeans are called Pre-Contact or prehistoric, and those from after the time of contact are Post-Contact or historic.

Unlike forests, which can be replanted or grow back, archaeological sites are gone forever when they are excavated. Archaeological materials have little meaning without a context— their origin and associations with other materials. An artifact from a burial pit, for example, has a much different meaning than one from a trash pit. Any activity that disturbs the ground, such as construction or even archaeological excavation itself, may disturb context and the scientific value of an archaeological site. Trained archaeologists manage a site using controlled excavations; they recover cultural materials and keep detailed records to preserve the historical information.

In 1966, the National Historic Preservation Act became the cornerstone of our efforts to identify, understand, preserve and celebrate our national heritage.

The public reaction to the destruction of Old Penn Station also moved the New York City government to action. In 1965, the city passed the Landmarks Law, which created the New York City Landmarks Preservation Commission (LPC) to safeguard the important historic buildings and sites within the five boroughs. The LPC is an important local regulatory agency and often consults with local, state, and federal agencies to assist in the assessment and preservation of cultural resources. Their role in protecting cultural resources parallels that of the SHPO at a city level and the two organizations often work together to preserve the New York City’s historic places.

When Spectra Energy proposed building a new 20-mile natural gas pipeline called the New Jersey-New York Expansion Project between Manhattan and Linden, New Jersey, the company first needed approval from the Federal Energy Regulatory Commission (FERC). Under the National Historic Preservation Act, FERC needed to consider the effects of building this new pipeline on important historic places.

OUR NATIONAL PRESERVATION PROGRAM

Following World War II, many American cities and surrounding communities experienced dramatic redevelopment. Older buildings, mills, bridges, and entire neighborhoods were demolished to make way for new construction. Although there were many important historic buildings and sites lost in those years, it was the destruction of one particular building in New York City in 1963, the iconic 1910 Pennsylvania Station (Old Penn Station), that sparked a national preservation movement. Though the public outcry at the demolition of Old Penn Station was not enough to save that building, it did spur the U.S. Congress into action. In 1966, President Lyndon B. Johnson signed into law the National Historic Preservation Act, creating a new national framework for identifying and preserving those places important to national, state and local history. Among the many important parts of the National Historic Preservation Act is a requirement that federal agencies “take into account” (consider) the effects of federally funded or permitted projects on significant cultural resources before they approve such projects. The new law also created within each state and U.S. territory a State Historic Preservation Officer (SHPO) who is responsible for representing the public’s interests in preservation of cultural resources. The SHPO works with federal agencies, developers, and the public to identify, record, and preserve those places which are significant to local, state, and national history. Native American Tribes also play an important role in this process and often consult with agencies and coordinate with archaeologists to ensure their own concerns and cultural knowledge are considered. This national preservation program remains the cornerstone of our efforts to identify, understand, preserve and celebrate our national heritage.
The National Historic Preservation Act (NHPA), passed by Congress in 1966, is the basic historic preservation legislation requiring federal agencies to check for cultural resources eligible for listing in the National Register of Historic Places before a federally enabled undertaking proceeds. The NHPA’s Section 106 is designed to help protect important cultural resources for future generations by requiring federal agencies to consider important archaeological sites, historic buildings, structures, and districts in project planning. The NHPA, as amended, has largely been responsible for the growth of the cultural resource management (CRM) industry and has created a nationwide network of federal and state agencies working toward the common goal of conserving America’s cultural heritage.

ARCHAEOLOGICAL FIELDWORK AND DOCUMENTATION

Archaeological fieldwork is about more than the recovery of artifacts; it is about the recovery of information through controlled excavation. Documentation of an archaeological site through careful excavation, note-taking, photography, and other techniques needs to be done by professionals. Without proper controls and techniques, digging can result in the loss of important cultural resources and valuable information. To learn more about archaeology in New York, visit the New York Archaeological Council website: http://nysarchaeology.org/nyac/.

Archaeology in Steps

Considering a project’s effects on important archaeological sites requires completing several phases of investigation to search for, assess, and where necessary, excavate significant sites which would otherwise be lost when the project is built. Archaeologists may use different methods at each step of an investigation because they are collecting information to answer different types of questions about a project area or an archaeological site. Each project is unique, so the specific methods used by archaeologists can also vary depending on the conditions within the project area.

The process for an archaeological investigation such as the one completed at Old Place Neck is divided into steps to answer four basic questions about each project area in this order:

1. Does the project area have the potential to contain archaeological sites?
2. Does the project area actually contain sites that may be important (significant)?
3. If the project area does contain a site, is that site important?
4. If the project area does contain an important site that cannot be preserved in place, what can we learn from studying the site before it is lost?

The first step of the cultural resource investigations is to evaluate whether important sites may be found within a specific project area. This involves extensive background research of the project area and surrounding vicinity. For the New Jersey-New York Expansion Project, archaeologists looked at information about known archaeological sites, previous archaeological studies, historic maps, local and regional histories, and other documents. PAL contacted 18 Native American Tribes to identify any concerns with the archaeological work and seek the Tribes’ input. They reviewed information about geology, plants and animals, and climate history to learn what the past environment was like and the kinds of natural resources that people would have used for food and tools. This research helped PAL identify archaeologically sensitive areas, or those areas with potential to contain cultural resources. After analyzing all of this information, archaeologists determined that part of the planned pipeline project area had the potential to contain undiscovered cultural resources and that further investigations would be needed to find out if such sites were in the areas of proposed construction.

The next step was to complete field surveys of the archaeologically sensitive areas. The purpose of the field survey is to identify potentially important sites which may lay hidden below the ground surface. This task was difficult in the built-up city environment on Staten Island. The natural landscapes that existed more than 200 years ago have been largely paved over, buried under deep deposits of fill, (sediments placed by people by to "fill in" parts of the natural landscape). Archaeologists were able to use shovels to dig test pits in undeveloped areas, but had to use other techniques to investigate paved or buried areas. Soil borings can reach depths far greater than archaeologists can excavate using hand tools, like shovels and trowels. In a small part of the Old Place Neck Site that had been buried by several feet of fill, staff from Geoarchaeological Research Associates collected soil boring samples up to 20 feet below the ground surface using a mechanical drilling rig. The borings helped to confirm if there were intact soils from now-buried landscapes that could contain archaeological deposits. Fortunately, most of the Old Place Neck Site was in an undeveloped wooded area where it was possible to dig test pits by hand. In the early spring of 2011, archaeologists from PAL completed this first part of the field survey. These excavations resulted in the initial discovery of the Old Place Neck Site. Archaeologists recovered a small number of artifacts from the Pre-Contact and Post-Contact periods in areas that appeared to be relatively undisturbed.

Field collection of soil borings using a mechanical drilling rig.
When most people think of archaeology, they think of excavations. This is obviously one very important part of an archaeologist’s work. Up to 30 archaeologists at a time worked over a period of three months on the data recovery excavations at the Old Place Neck Site. The goal of fieldwork was not just to recover things buried in the ground. It was to collect a broad range of information about the site which would help archaeologists understand who visited or lived at the site in the past. The goal of fieldwork isn’t just to recover things buried in the ground. It is to collect information about the site to help understand who visited or lived at the site in the past.

Archaeologists from PAL returned to the site in the summer of 2011. They excavated 335 new test pits and 20 larger square excavation units measuring 1 meter x 1 meter (3.3 feet x 3.3 feet). Based on the information collected by PAL at the Old Place Neck Site, the archaeologists at PAL, NY-SHPO, and LPC considered the site a significant cultural resource eligible for listing in the National Register. Sites can be eligible for the National Register for several different reasons. The Old Place Neck Site was significant because the field surveys and laboratory analyses showed the site could provide important new information about Staten Island’s early inhabitants. PAL also determined that the site retained good integrity and that the context of the archaeological deposits would allow for detailed studies. PAL worked with engineers at Spectra Energy to determine if this significant cultural resource could be preserved in place during construction. Though the engineers were able to move parts of the planned construction to reduce the impacts, there was no feasible way of avoiding a portion of site. Spectra Energy, PAL, FERC, NY-SHPO, and LPC worked together to develop a data recovery plan for the area of the site which would be affected by the pipeline construction. A data recovery is often the final step of archaeological investigations that records and preserves site information and materials before any construction begins. Although most of the Old Place Neck Site was not able to be preserved in place, information and material from the site were recovered through careful and controlled excavations that allowed reconstruction of the site’s history.

The next step of investigation, or site evaluation, began after the initial finds were determined to be potentially significant, or potentially eligible for the National Register of Historic Places (National Register). Site evaluations include the excavation of closely-spaced test pits and larger excavation units to gather more information about the age, size, contents and condition of a site. Test pits excavated during a site evaluation are usually placed on a grid which extends across the area where the site was first discovered. The regularly spaced test pits help identify the boundaries of a site, the time period(s) when the site was used, and the site’s condition, or “integrity.” Archaeologists study the patterns of artifacts and features to understand past human activity on a site. An archaeological site with good integrity is one in which the artifacts and features maintain their basic relationships to each other. In such a site, the patterns can be analyzed to reconstruct the past activities that took place within the site. Sites with poor integrity include those where the archaeological deposits have been disturbed and the locations of artifacts no longer reflect their original patterns. Once a site is disturbed, there is very little new information that archaeologists can gain from detailed studies.

Archaeologists at the Old Place Neck Site took detailed measurements and notes on a feature found during the dig. When most people think of archaeology, they think of excavations. This is obviously one very important part of an archaeologist’s work. Up to 30 archaeologists at a time worked over a period of three months on the data recovery excavations at the Old Place Neck Site. The goal of fieldwork was not just to recover things buried in the ground. It was to collect a broad range of information about the site which would help archaeologists understand who visited or lived at the site in the past. The goal of fieldwork isn’t just to recover things buried in the ground. It is to collect information about the site to help understand who visited or lived at the site in the past.

Inspecting a window screen to catch small artifacts. The artifacts from each soil layer, were placed in a plastic bag with a written tag containing information about their location within each unit. Notes on the finds, soils, and any samples taken were also recorded for each layer excavated. At the end of each day, all the collected artifacts and samples were brought to a field laboratory set up next to the site. There, the process of cleaning, identifying, and cataloging began before the artifacts and samples were taken to PAL’s laboratory facilities in Rhode Island for further analysis.

Another equally important part of an archaeologist’s work happens during and after the excavations. Artifacts from the site were cleaned, measured, weighed, photographed, and cataloged into a computer database. The catalog has detailed descriptions of the artifacts—some as small as a tenth
of a gram—and where they were found, or their provenience. Along with preparing notes, drawings, maps, and photographs in the field, completing the catalog is a critical part of documenting an archaeological site and ensuring that other archaeologists can use all of the information for further research.

Once the artifacts and associated materials were cataloged, the database was used to assist the archaeologists in detailed analyses. The analyses for the Old Place Neck Site included statistical studies of the artifacts to understand what types of materials were recovered from the site, how many of various artifact types were found, and how the artifacts such as stone tools vary in shape and form depending on when they were made and how they were used.

The catalog was also used to complete spatial analyses of the artifacts and features. Spatial analysis includes detailed studies of where artifacts were found on the site, and whether different types of artifacts are clustered near features can help archaeologists understand how a site was used through time. Spatial analysis is important for sites that were used repeatedly in the past. Because the artifacts and features associated with these many different visits are found mixed together in the soils, carefully designed studies are needed to understand which materials are associated with each other.

PAL also used use-wear analysis to learn about how specific tools were used. The stone tools from the Old Place Neck Site were examined with a microscope to find any scratches or polish that could indicate whether a tool was used to cut meat, scrape an animal hide, or to shave wood or bone. A residue analysis was also performed on some tools to possibly indicate what specific plants or animals people were eating or processing at the site.

After all analyses were complete, the artifacts were labeled and preserved, or curated, together with the field notes, maps, photographs, catalog, and other documents for the benefit of the public and future research. Today, the collection of artifacts and documentation from the Old Place Neck Site is housed at the Staten Island Museum, where it is available for future generations of researchers and the public.

Understanding Soils

Soils can reveal information about past human activity and site formation processes. Factors affecting archaeological sites include soil weathering, human-caused disturbance (e.g., plowing, trampling, and construction), cryoturbation (freeze-thaw cycles), bioturbation (e.g., natural tree falls, root disturbance, and animal burrowing), and other geological processes such as flooding. Soils in the Northeast consist mainly of mineral sediments that were deposited as glaciers from the last Ice Age melted away, leaving sandy outwash and rocky till that developed into soil. Physical and chemical processes create distinct soil horizons. From top to bottom, most soil profiles have a surface organic (O) horizon; an A horizon of topsoil consisting of a mix of organics and mineral sediments; a weathered B horizon of subsoils that typically lack organic material; and a C horizon of unweathered material.

Layers can exist as fill or as additional sediment deposited by flood waters. Understanding the different layers, or stratigraphy, is very useful for dating archaeological materials found in soil. A general rule is that older layers or strata are below younger strata.

The soils at the Old Place Neck Site were formed from sandy lake bed deposits associated with glacial Lake Bayonne, which formed from glacial meltwater. Between the end of the last Ice Age and about 13,000 years BP (before the present), this meltwater was dammed near the southern end of Staten Island and covered the western part of Staten Island. Sandy soils at the site contained few rocks and no evidence of stratigraphic layers. Both natural and human-caused processes affected the soils at the site. The effects of cryoturbation can be considerable especially in sandy soils. Bioturbation at the site was largely related to tree roots and tree falls and burrowing insects, worms, and other animals. Past human activity also affected the distribution and burial of archaeological materials. Visible evidence of plowing at the Old Place Neck Site means there was an agricultural field used by colonial settlers as early as the 1680s.

Because the artifacts and features associated with these many visits are found together in the soils, carefully designed studies are needed to understand which materials are associated with each other.
CHAPTER 5

OLD PLACE NECK: AN ENVIRONMENTAL HISTORY

How did the environment at Old Place Neck change from this

To this?

Example of a proglacial lake

This photograph shows the wooded area containing the Old Place Neck Site overlooking the adjacent tidal marsh.

The past environment of Old Place Neck and New York City was very different from today's urban landscape. Knowing what the landscape was like helps us understand what kinds of plants, animals and other resources were available to people, and how that helped them choose where to live.

The site is in northwestern Staten Island on a raised peninsula-like landform referred to as a "neck," known as Old Place Neck. Before twentieth century urban development, it was surrounded on the north, south, and west sides by low-lying tidal marshes. The natural landscape was largely shaped during the last Ice Age and, later by rising sea levels. The past environment of Old Place Neck and New York City was very different from today's urban landscape. Knowing what the landscape was like helps us understand what kinds of plants, animals and other resources were available to people, and how that helped them choose where to live.

The site is in northwestern Staten Island on a raised peninsula-like landform referred to as a "neck," known as Old Place Neck. Before twentieth century urban development, it was surrounded on the north, south, and west sides by low-lying tidal marshes. The natural landscape was largely shaped during the last Ice Age and, later by rising sea levels. Over 20,000 years ago, New York City was covered by glacial ice that extended as far south as the southeastern shoreline of Staten Island.

The end of the last Ice Age started a period of enormous and rapid changes in the environment. One of the most important of those changes was in global sea levels. As the Earth’s climate warmed around 19,000 years ago, most of the water frozen in glacial ice began to melt and drain into the sea. The Laurentide Ice Sheet, which included the glacier which once extended over the Old Place Neck Site, alone held over 6 million cubic miles(!) of ice. All of that meltwater flowing into the oceans caused sea levels to rise, drowning the ancient shoreline and submerging millions of square miles of once dry land. Around the time that the glaciers began to melt, sea level was at least 100 meters (about 330 feet) lower than today, and the coastline was near the edge of the offshore continental shelf, about 100 miles southwest from its current location.

As the glacial ice melted, water was dammed behind thick deposits of sand, gravel, and boulders at the margins of glacial

ARTIFACTS AND FEATURES

Artifacts and features represent the traces of past human activity. Their context and associations are what allow archaeologists to reconstruct the story of a site. Artifacts are objects made or modified by humans that are usually portable. Common types of artifacts found at archaeological sites are stone tools, implements of bone or wood, pottery, buttons, coins, glass, and fragments of smoking pipes.

Features are also things made or modified by humans but are usually not portable and cannot be removed from the ground intact. Common types of features are soil stains such as post molds; storage pits; charcoal stains from a hearth; burials; or the remains of a building such as a stone foundation.

Most of the artifacts found at pre-contact sites in North America are stone objects. The remains of food and items made from organic materials such as wood and bone do not easily survive in the acidic soils of the Northeast. Archaeologists often rely on information from features to interpret past material culture. For example, features like cooking pits or hearths contain charred organic materials. Charred wood, seeds, and nuts survive much longer in the soils than unburned material.

Use-wear analysis and residue analysis of stone tools can provide information about the types of materials processed with these tools. Wet environments low in oxygen such as bogs are good for preserving organic items, as are very dry environments. For example, archaeologists found 3,000-year-old duck decoys made from cattail reeds at the Lovelock Cave Site in Nevada; the dry environment and protective characteristics of the cave helped to preserve the items. In the Northeast, shell middens are good environments for preservation. Shells are rich in calcium carbonate, which creates an alkaline environment that counteracts the effects of acidic soils.

Photograph of proglacial Lake Jökulsárlón in Iceland by Ira Goldstein

Left: Examples of pre-contact Native American artifacts consisting of a stone tools and pottery fragments.
Right: Examples of post-contact artifacts consisting of smoking pipe bowl, gunflints, and ceramic sherds.

Left: Pre-contact period stone-lined feature.
Right: Shell midden eroding out of a bluff.

Map with the location of the moraine left behind by glacial ice.
R.D. Salisbury 1902 – Geological survey of New Jersey

Photograph of proglacial Lake Jökulsárlón in Iceland by Ira Goldstein
ice called moraines. Lake Bayonne was one such lake in the area of today’s Arthur Kill Valley. Portions of western Staten Island, including the Old Place Neck Site, were covered by Lake Bayonne until about 13,000 years ago, when the moraine that had acted as a dam was breached. Erosion of the newly exposed lake bed resulted in low-lying basins along each side of Old Place Neck that left behind the long raised peninsula, or “neck,” for which the area is named.

By 12,000 years ago, sea water was in the Hudson River even though the coastline at this time was still far away from where it is today. Finds of oyster remains and other marine and brackish water organisms in the Hudson River were present and indicate the beginnings of estuary-like conditions. The especially deep channel of the Hudson River was one reason it was possible for sea water to be so far inland. It is around this time that people migrated into the Lower Hudson Valley region for the first time. So what was the environment like for these first settlers?

Research on ancient climate, ecosystems, and habitats—called Paleoenvironmental studies—have shown that the climate after about 18,000 years ago was cool and humid. Vegetation was most likely a mixture of open areas and spruce woodlands with patches of oak, ash, larch, fir, and pine trees. A sudden change in climate occurred about 12,800 years ago, with conditions becoming very cold and dry. Known as the Younger Dryas event, it was a kind of “mini Ice Age” so severe that the glaciers that had withdrawn to the northern regions of North America began to grow again. This cold period happened at the same time that people probably first came to the Hudson Valley, and lasted until about 11,600 years ago.

Evidence of ancient vegetation from pollen records dating to the Younger Dryas suggests any people in the area would have seen more open land and woods with fewer oak and pine trees, and more cold-tolerant trees like spruce, fir, larch, birch and alder. In the lowest-lying areas along Old Place Neck, developing salt marshes would have been present. Possible sources of food were waterfowl and fish from the Hudson River, the Arthur Kill, the Kill Van Kull and adjacent streams and bays.

When the Younger Dryas ended, the climate suddenly and dramatically warmed. Over time this caused pine trees to increase, and cold-loving spruce trees to decline. Forest animals familiar to us today, such as white-tailed deer, black bear, and turkey, became widespread and caribou, mammoth, and mastodon went extinct. Over the next several thousand years, new species of oak, hemlock, hickory, chestnut, beech, and other deciduous trees expanded northward until the forests in the region resembled those of today.

The rate of sea level rise began to slow by 6,000 years ago, and the coastline began to resemble that of today. However, soil borings from the tidal marsh on the north side of the Old Place Neck Site indicate that rising sea levels periodically eroded out marsh sediments up to about 4,000 years ago. At this point, the rate of sea-level rise stabilized, allowing continuous development and growth of the tidal marsh around Old Place Neck. These marshlands were an important source of food and other materials for visiting Native Americans.

Pollen samples from these soil borings indicate that the salt marsh and coastal woodland forest at the Old Place Neck Site did not change much over the last 2,700 years. The forest contained mostly oak trees, but also chestnut, beech, blackgum, hop-hornbeam, willow, hickory, walnut, maple, pine, cherry, and hornbeam and/or hazelnut trees. Many of these trees produced nuts, a valuable source of food. The soil borings showed a brief increase in charcoal and pollen from weedy plants dating to around 2,300 to 2,400 years ago. These changes indicate a more open wooded environment and disturbance that is most likely related to increased human activity. Similar changes are seen again toward the end of the Pre-Contact Period, most likely between 500 and 800 years ago. Beginning in the 1600s, European settlers cut down trees, replacing the woodlands with agricultural fields and pastures. This rural landscape characterized the area around Old Place Neck into the early twentieth century.

Reconstruction of the Old Place Neck landscape at different points in time (adapted from environmental reconstruction by Geoarcheological Research Associates).
PALEOENVIRONMENTAL STUDY OF THE OLD PLACE NECK SITE

Archaeological investigations for the NJ-NY Expansion Project involved collecting and analyzing numerous soil borings to help characterize belowground conditions along the pipeline route. These soil borings were taken by Geoarcheological Research Associates (GRA) of Yonkers, New York. GRA further analyzed some soil cores from the Bridges Creek wetland basin next to the Old Place Neck Site as part of the data recovery program.

Stratigraphic and sediment analysis showed that the lowest (and oldest) layers consisted of lake bed sands. A successive series of salt marsh and peat deposits were found above the lake deposits. Layers closest to the top consisted of post-contact or modern era peat and fill deposits that were probably added to raise the ground surface to make it suitable for development. Radiocarbon dating of organic material from the various layers provided a chronological history of landscape development spanning 18,000 years.

A palynologist, an expert in the identification of pollen from PaleoResearch Institute of Golden, Colorado examined the soil cores. Pollen consists of small grains produced by flowering plants for reproduction. These grains are transported between plants by wind or insects. The outer shell of pollen is resistant to decay and can be preserved for thousands or even millions of years. Wet settings such as bogs, marshes, and ponds are good environments for preserving pollen remains.

Pollen has shapes and characteristics unique to the species of plant that produced it, which makes it useful for environmental reconstructions. A palynologist looks at the stratigraphy of a core and any associated radiocarbon dates to identify the types and amounts of pollen and to develop of a diagram that illustrates changes in vegetation through time.

This diagram shows changes through time in the percentage of wetland (aquatic) plants, herbs and grasses, and tree pollen near the Old Place Neck Site. Changes in the number of tiny charcoal fragments found within the core are shown on the right side of the diagram.

ARCHAEOLOGISTS HAVE CREATED A CHRONOLOGY BASED ON DIFFERENT CULTURAL PATTERNS, TECHNOLOGIES, ARTIFACT TYPES AND OTHER TRAITS. IN THE EASTERN UNITED STATES, ARCHAEOLOGISTS HAVE DEFINED SEVERAL MAJOR CULTURAL PERIODS WITHIN THE PRE-CONTACT PERIOD ERA, WHICH STARTS WITH THE PALEOINDIAN PERIOD AND ENDS WITH THE LATE WOODLAND PERIOD.

The First Arrivals
The PaleoIndian Period is the time when the first people moved into the Northeast. Native Americans were likely present in the Lower Hudson Valley by 12,000 or more years ago. The region was locked in the grip of a very cold and dry period with plants and animals that are no longer present in the area. Artifacts at PaleoIndian sites typically include fluted spear points, which consist of lanceolate-shaped projectile points that have been thinned by removing one or more flakes from the base to the tip leaving a long flake scar, or “flute” on each side. These points are often found together with large flake scraping tools, spokeshaves, and burins or gravers. PaleoIndian sites are among the rarest of all sites in the Northeast.

Radiocarbon dating of organic material from the various layers provided a chronological history of landscape development spanning 18,000 years.

PaleoIndian

Early Archaic

Middle Archaic

Late Archaic

Early Woodland

Middle Woodland

Late Woodland

Contact
subsisted on a wider variety of game animals and plants. The poor preservation of food remains at these early sites leaves our understanding of their subsistence patterns more speculative than for later periods.

Many fluted points and other PaleoIndian tools found in the Northeast were made from high quality stone called chert. The sources of the cherts used by these people can be several hundred miles from the sites where the tools are discovered, lending support to the idea that people travelled long distances each year. Stone from several of the known quarries used by PaleoIndians appear to have been favored even when high quality chert was available from local sources. This leads some archaeologists to believe that the stone had a deeper cultural significance to people during this period and wasn’t chosen solely based on its quality.

PaleoIndian sites in southeastern New York differ from the regional pattern in that local stone was frequently used for tool making. For example, jasper is a common type of stone used by PaleoIndians to make tools, and is often assumed to have come from Pennsylvania. However, most of the stone tools found during excavations in the 1970s at the Port Mobil Site on Staten Island were made from a yellow to tan jasper that came from Staten Island.

The Archaic Period

The Archaic Period follows the PaleoIndian Period and is divided into three main sub-periods: the Early, Middle, and Late Archaic periods. Early Archaic sites are rare in the Northeast, but some of the first found in New York are on Staten Island. The climate at this time was becoming much warmer and dense pine forests extended across much of the region. Early Archaic sites are usually identified by the presence of distinct artifacts, such as bifurcate-base or “bifurcated” projectile points. This style of point was first used in what is now the southeastern United States. Between 9,000 and 10,000 years ago people making bifurcate-base points traveled north along the East Coast into the Lower Hudson Valley region. Other new tool types also appeared, such as chipped stone adzes used for woodworking. These points and other tool types reflect a shift in technology associated with the warming climate and the migration of new people into the region.

By the Middle Archaic Period, pine forests were replaced by mixed hardwoods such as oak and hickory trees. This was an ideal environment that supported a wide variety of wild game and birds, as well as plants that supplied edible roots, berries, and nuts. Middle Archaic projectile points include Neville/Stanly and Otter Creek types. Other tool types include netsinkers (stone weights attached to nets), nutting stones (pitted stones used for processing plant foods like nuts) and other ground-stone. The diversity of stone tools used in the Middle Archaic reflects a wider variety of foods and other resources used by people. Sea levels were rising much more slowly by the end of the Middle Archaic period, and marine estuaries and coastal marshes were developing in some areas. Middle Archaic radiocarbon dates from oyster shells also provide the earliest evidence that people were shellfishing in the lower Hudson River area and had likely started to spend more time along coastal areas for at least parts of each year.

Middle Archaic sites are more common than those from earlier periods, suggesting Native American populations in the region were growing. People also began to move around less. Middle Archaic sites consist of larger, seasonal base camps inhabited by people for longer periods that were supported by short-term foraging camps. People may have lived at base camps for weeks or months at a time. This basic settlement pattern would change very little for the remainder of the Pre-Contact Period.

The Late Archaic Period is better understood than earlier periods, partly because of the large numbers of sites that date to this period. Late Archaic sites are mainly associated with Narrow Stemmed Tradition projectile points, including Bare Island, Sylvan Stemmed, and Wading River varieties. There is good evidence that many of these point types continued to be used during the following Early Woodland Period.

Late Archaic populations throughout the Northeast expanded and became more diverse. Differences in artifact styles and types recovered at sites across the region suggest that group territories had developed by the Late Archaic. Late Archaic Sites are found in many different environments along the coast and in the interior of the Northeast. The diversity locations used during this period is likely related to intense use of resources within shrinking territories. Although Late Archaic sites have been found in many settings, large settlements were concentrated in major river valleys and coastal areas.

The rate of sea level rise which started slowing during the Middle Archaic dramatically slowed by 5,000 years ago, allowing continuous, stable development and expansion of estuarine environments. The tidal marshes and flats of the estuary along the Lower Hudson River Valley provided a steady supply of food: shellfish, fish, migratory birds, and plants. Shell middens are an especially common type of Late Archaic archaeological site in the Lower Hudson Valley.

The Transitional Archaic Period overlaps the end of the Late Archaic Period and the beginning of the Early Woodland Period. New kinds of artifacts and complex burial traditions appear during this period that are associated with what is known as the Susquehanna Tradition. Artifact types include broadspel and fishtail points and steatite (soapstone) vessels or bowls, which are among the oldest surviving containers used by Native peoples in the Northeast. Broadspel points include the Snook Kill, Susquehanna, and Perkiomen types. Though broadspears are often called “points,” it is unlikely that most of them were used for hunting. Several use-wear studies of these items indicate they were more likely used as knives and scraping tools, than as points for weapons. Susquehanna Tradition artifacts overlap in time with both Late Archaic Narrow Stemmed and Early Woodland tradition materials. Archaeologists debate about whether Susquehanna materials reflect the migration of people into the area or the adoption of new technology and cultural beliefs by groups already living in the Northeast.

The Woodland Period

The Woodland Period is also divided into early, middle and late sub-periods. It was a time when some Native peoples transformed from hunter-gatherers to farmers. The Late Woodland marks the first widespread use of pottery, the development of permanent village settlements, and horticulture that involved growing maize, beans, squash and other plants. This way of life was not adopted by all Native Americans during the Woodland Period. Even during the Late Woodland Period many groups appear to have continued living in dispersed...
argue that artifacts from the Late and Transitional Archaic periods continued to be used during the Early Woodland Period, making Early Woodland sites harder to recognize. The cultural and settlement patterns defined by known sites did not change dramatically in the Early Woodland Period. Sites continued to be concentrated in coastal areas. Early Woodland sites found around New York City were mostly used as temporary camps where people gathered shellfish, hunted, and likely made a broad range of wooden tools. Personal decorative items like shell beads have been found at several of these sites. Early Woodland archaeological sites often contain a variety of projectile point types, including Lagoon, Rossville, Adena, and Meadowood. Rossville points, found throughout the Northeast, were named after the Rossville Site on Staten Island where they were first recognized as a point type. Many Early Woodland points are similar in form to Late Archaic Narrow Stemmed points, suggesting a strong connection to earlier cultures in the region. The use of pottery became widespread at this time, replacing the older stone vessels used for cooking. Called “Vinette I” pottery by archaeologists, it has very little decoration, thick walls, and pointed bottoms for placement between stones in a hearth or within a pit filled with hot stones or charcoal.

During the Middle Woodland Period people in the Lower Hudson Valley created more elaborate pottery vessels decorated with incised (carved) and stamped designs. Middle Woodland sites also commonly contain projectile points known as Fox Creek and Jack’s Reef point types. One important characteristic of the period is the evidence for long-distance trade networks that linked peoples in the Northeast with the so-called “Mound Building” Hopewell cultures in the Midwest. The complex interactions among Native peoples throughout the eastern half of North America during this period is apparent in the changing burial customs incorporating copper items and distinctive ground stone tobacco pipes and ground stone animal effigies. For example, grave goods in a child’s burial at Tottenville on Staten Island, included a stone platform pipe, a copper gorget, and a mica ornament. These types of items are usually associated with people who lived hundreds of miles west of the site. The grave also contained marginella and olivella shells possibly from as far away as the Gulf of Mexico. The participation of Northeastern groups in this vast trade network coincided with an apparent rise in conflict among groups living along New York Bay. Three adult male skeletons discovered at the Tottenville site contained embedded projectile points.

The Late Woodland Period is the last stage of the Pre-Contact Period before the arrival of the earliest European explorers and colonists. Artifacts found on Late Woodland sites include triangular projectile points called Levanna and Madison points, which were the first true arrowheads used with bow and arrow technology. Fragments of pottery from finely made vessels with rounded bottoms are also common. A variety of Late Woodland pottery types have been found at Staten Island sites, including stamped and incised Bowman’s Brook pottery named for the Bowman’s Brook Site on Staten Island. Much of the pottery on Staten Island appears closely related to styles found at sites along the Delaware Valley in neighboring New Jersey. Artifacts like this and other characteristics indicate that defined group territories were likely present by the Late Woodland Period. For example, documents written by early European settlers indicate that the area of New Jersey and adjacent Lower Hudson Valley north of the Raritan River was considered the “territory” of Munsee-speaking Lenape groups who were separate from the Unami-speaking Munsee to the south of the river. These territorial divisions are mirrored in the archaeological record by differences in Late Woodland pottery types and burial traditions.

Tidal marshes like this one provided a wide variety of foods and materials for people including waterfowl, turtles, fish, shellfish, roots and reeds. Cattails, for example, could be used for a variety of things—the roots provided food, the leaves could be woven into baskets, or mats for shelters, and the fuzzy flower used as a source of soft material for lining things, or as tinder for starting fires.
CHAPTER 7
CONTACT: A TIME OF TRANSFORMATION AND UPHEAVAL

The Contact Period is the shared history of interactions between Native Americans and early European explorers and settlers. Life for both Native Americans and early European settlers changed dramatically as a result of cultural contact. For Native Americans, epidemic disease, loss of their lands, and hostilities had substantial impacts almost immediately after the Dutch traders and colonists became a permanent presence in the area.

A record of Giovanni da Verrazano’s voyage of 1524 is the earliest description of a visit by Europeans to what is today New York City. Verrazano had been hired by King Francis I of France and a silk merchant group to find a shipping passage to the “Indies” and is believed to have first seen the East Coast of North America near Cape Fear, North Carolina. Verrazano and his crew then traveled north up the coast. They probably anchored off Raritan Bay and sent a smaller boat up the river into New York Harbor, where he and his men saw people “...dressed in bird’s feathers of various colors, and they came toward us joyfully, uttering loud cries of wonderment, and showing us the safest place to beach the boat.” Verrazano never actually landed his boat due to sudden bad weather, but continued his voyage northeast along the coasts of Long Island, New England and Maine.

Mariners, fishermen, and merchants frequently visited the East Coast after Verrazano, and some may have visited New York Bay and the Hudson River. Nevertheless, there was no sustained, regular contact between Europeans and Native Americans in the area until Henry Hudson’s voyage 85 years later in 1609. Hudson was hired by the Dutch East India Company to search for the elusive passage to the Indies. He traveled up the river that now bears his name and had several contacts with Native Americans. Only a few excerpts of Hudson’s original journal have survived, in which he wrote, “They had no houses, but slept under the blue heavens, some on mats of bulrushes interwoven, and some on the leaves of trees. They always carry with them all their goods, as well as their food and green tobacco, which is strong and good for use.”

The journal of Robert Juet, a crewmate of Hudson’s, did survive and provides the most complete account of the journey. According to Juet, the expedition anchored for several days within Raritan Bay along Sandy Hook. While there they took soundings in the bay, fished, and traded with the area’s Native residents, exchanging knives, beads, and clothes for tobacco. About one of these encounters he wrote, “This day many of the people

WHAT’S THE POINT?
ARROWHEAD VS. SPEARHEAD

Projectile points are what most people think of as “arrowheads,” but most projectile points are not true arrowheads. True arrowheads came into widespread use a little over 1,000 years ago with the adoption of bow and arrow technology. Weapons technology during most of the Pre-Contact Period consisted of points mounted on spears thrown with an atlatl, an Aztec word for “throwing stick.” The atlatl was a hooked, baton-like stick used for throwing spears. A person grasped the atlatl toward its “front” to throw the projectile. The atlatl served to increase the length of the thrower’s arm and acted as a lever, so that a spear could be thrown with many times the force and distance of one thrown by hand. Weights attached to the atlatl may have improved balance, stability during throwing, and accuracy.

Stone weights attached to an atlatl may have improved stability and accuracy. The type of atlatl weight pictured is also known as a bannerstone. Some experiments suggest that the winged appearance of these types of atlatl weights had a muffling effect on the noise made during throwing that could prematurely startle prey.
The exact territories of these groups are not known because there were no fixed boundaries and because the native residents encountered by early explorers in the Lower Hudson River Valley were Lenape who spoke a dialect of an Eastern Algonquian language called Munsee. The Lenape, or Munsee, were organized into loosely structured groups that lived in small dispersed settlements. Some women also came to us with Hemp. They had red Copper Tobacco pipes, and other things of Copper they did wear about their necks. At night they went on Land again, so wee rode very quiet, but durst not trust them. Whether or not Juet’s distrust was reasonable, five men sent out the following day in a smaller boat to explore what is now the Hudson River were attacked and out the following day in a smaller boat to explore.

These early images of Native Americans come from the notes published in 1655 of David Peter de Vries, who first settled Staten Island in 1639.

In exchange for furs and other goods, Native Americans received iron objects (axes and hoes), brass and copper kettles, glass beads, duffel or broad cloth, tobacco pipes, bells, necklaces, bangles, mirrors, rings, ceramics, and more. Beads, mirrors, and other “trinkets” were valued by the Natives for what they thought were spiritually charged or prestigious qualities. As they learned the practical usefulness of some European goods, they began to prefer them, and some were reshaped for Native purposes. For example, brass kettles acquired in trade could be cut into pieces to make arrowheads.

Within a few years, the focus of trade shifted from furs to wampum, perhaps because valuable fur-bearing animals like beaver were overhunted. Made mostly from quahog and whelk shells, wampum had an important symbolic role in Native American society. Marriages and alliances were sealed with the exchange of goods and gifts, including wampum. Europeans instead viewed wampum as monetary currency for business transactions rather than social ones. Dutch traders would get large amounts of wampum from coastal Munsee groups and transport it up the Hudson River to northern groups where it was traded for furs. In doing so, they unknowingly became middlemen for a Native American system of social reciprocity and exchange.

Dutch merchants prospered from trade along the Hudson River but knew they needed to create settlements of their own to strengthen their claim to New Netherland territory. As early as 1613, the English tried to get the Dutch to leave this area, but the Dutch stayed in control. In 1621, the Netherlands government granted a charter to establish the Dutch West India Company, which allowed wealthy merchants or company officials to buy land from Native Americans. It was initially difficult to establish settlements, and by 1624, the company offered free travel and land for individuals willing to settle in New Netherland for at least six years. The company’s intent was for patroons to bring settlers to plant crops to support the new colonies, but the patroons instead often selected land best situated for trade with Native groups or planted their fields with trade crops like tobacco. For example, Michael Pauw was granted a large parcel of land in 1630 that included modern-day Staten Island, but he never established a colony there. It was not until nine years later that David Pietersen de Vries came back and brought a few settlers with him.

Colonization meant new social, economic, and cultural challenges for Native groups as they struggled to maintain their independence and way of life. They increasingly resisted the Dutch presence, which at times took the form of violence. In 1641, when pigs were stolen from de Vries’ settlement on
Staten Island, William Kieft (then Governor of New Netherland) either wrongly or intentionally blamed the Raritan. He sent Dutch troops to a Raritan village to get compensation for the pigs. Instead, the troops killed many of the Raritan, tortured at least one, and burned the village. The Raritan fought back by destroying the settlement at Staten Island. Kieft was ultimately blamed for the incident, known as the “Pig War.”

Forced taxes and other unfair treatment of Native Americans continued to create resentment that spurred two other major armed conflicts with the Dutch over the next 20 years. From 1643 to 1645, the Dutch-Indian Wars, or Governor Kieft’s War, caused widespread destruction and abandonment of Dutch settlements throughout most of New Netherland, including the one on Staten Island for the second time. Incapable of sustained warfare because of their need to hunt, fish, and plant crops and because of losses from fighting, Native Americans signed a peace treaty with the Dutch in 1645. Ten years later, the “Peach War” broke out between the Dutch and Native groups, and the settlement first established by de Vries was destroyed for a third time. This war reportedly started as retaliation by the Natives for the killing of a Lenape woman who had supposedly stolen some peaches from a Dutch orchard. Frustrated Munsee groups responded by attacking settlers, taking captives, and destroying farms on Staten Island and along the west side of the Hudson River at Pavonia. After extensive negotiations, Kieft’s replacement, Peter Stuyvesant, finally managed to end the hostilities.

Epidemics caused by diseases brought to the region by Europeans also decimated Native populations. Native Americans had never been exposed to these diseases before, and had no resistance to them. The result was that diseases like smallpox killed Native Americans in much higher numbers than Europeans. Manhattan’s Native inhabitants, for example, may have been reduced to 200–300 individuals by 1628 due to disease. Native groups later experienced as many as five epidemics (including smallpox) between 1633 and 1680. In 1670, Daniel Denton, a resident of Long Island, noted of Native American settlements where there had been “...six towns, they are reduced to two small Villages....” Lenape groups in the area responded to their dwindling numbers by regrouping themselves into new communities. By 1700, however, most of the remaining Lenape in the region had moved out of the area to the west.

**ETHNOHISTORY**

Ethnohistory involves creating a kind of cultural biography of a group of people by relying on ethnographic and/or historic sources of information. Ethnography involves developing a systematic description of an ethnic group’s culture typically from direct interviews. Historic resources can include written firsthand accounts in journals and letters, maps, and drawings. This research approach has been used to learn about indigenous Native American communities such as the Lenape to reconstruct Native lifeways before and at the time of European contact and to understand interactions between Native Americans and Europeans.

Trade and interaction with Europeans produced immediate and profound changes in many aspects of Native Americans’ lives, and descriptions of Native Americans written by colonial Europeans did not always accurately depict the Native American culture. Nevertheless, colonial journals, records, and drawings can supplement the archaeological record.

**THE “INDIES” AND EUROPEAN DISCOVERY OF THE AMERICAS**

Many history book writers have incorrectly told us that Christopher Columbus discovered the Americas in 1492, and scholars now believe that Vikings visited the shores of Newfoundland, Canada, much earlier—about 1,000 years ago. However, the distinction of “discovery” belongs to those Native Americans who were already living here thousands of years before European explorers arrived.

For Europeans, however, it was a “New World.” Many European merchants, particularly those from Venice, had previously made their fortunes trading for exotic and valuable Asian goods, such as spices and silk. Already long and arduous, overland trading routes could not be used by the mid-1400s due to the rise of the Ottoman Empire and the collapse of Constantinople. The search for alternative routes to Asian markets, particularly by sea, was the start of the Age of Exploration. Finding a passage to the “Indies,” or south and east Asia, was risky, required a large financial investment, and was only made possible by advances in navigation and sailing technology. By the late 1400s, Portuguese explorers who had managed to navigate around Africa learned that the Atlantic Ocean was connected to the Indian Ocean and that passage to East Asian markets was possible. Christopher Columbus intended to sail straight west to avoid the long and dangerous route around Africa, but did not expect to find the North and South American continents between Europe and Asia.

Many subsequent explorations of the eastern coasts of the Americas focused on finding a way past the American continents (eventually known as the West Indies) to the “East Indies.” Ferdinand Magellan eventually found the only real route by sailing around the south end of South America to the Pacific. Although an easy passage to the East Indies was never found, these early explorations produced maps of the New World that would guide future expeditions and colonization.
CHAPTER 8

POST-CONTACT HISTORY OF THE OLD PLACE NECK SITE

The first record of Europeans visiting Old Place Neck was in 1674. Dutch immigrant Jan Theunissen (also known as John Tunisson and John Tunissen in some English documents) was granted the land by then New Amsterdam Governor Anthony Colve. In 1680, Tunisson received a second land patent from then British Governor of the New York Colony, Edmond Andros, after the British permanently wrested control of the area from the Dutch. According to this second document, Tunisson's plot of land contained 101 acres of upland, 15 acres of meadow, and was subject to a quit rent (a kind of land tax) of one and a half bushels of winter wheat.

Tunisson's land was in an area then known as "Black Point," but soon became known as "Tunissen's Neck." Tunisson built a house most likely near today's intersection of Western Avenue and Washington/Goethals Road. The house was also used by the community for religious services, and local lore suggests that this house was the source of the "Old Place" name. A new place had been established for church services when Tunisson's original house became run-down. However, the new location was so inconvenient that the original building was repaired and religious services resumed at the "Old Place." Little else is known of Tunisson, but legal petitions from a "John Teunissen van Pelt" of Richmond County in 1692 indicate that he had adopted the surname Van Pelt by that time.

Tunisson's will stated that his land was to go to his wife Mary Van Pelt, and that at her death it was to be equally divided among their ten children. Property deeds indicate that Tunisson's children came into their inheritance during the 1730s. Several of his descendants sold their portions of the original land between 1741 and 1752 to Christian and Daniel Corsen. The parcel containing the Old Place Neck Site was most likely owned by the Corsens as parcels of land on either side of the site belonged to the Van Peltts into the nineteenth century. The Corsens may have been recombining Tunisson's divided landholdings in an attempt to profit from increased demand for food produce in the Caribbean. At that time, much of the commercial trade in New York was driven by the Caribbean sugar trade. Because Caribbean plantations devoted as much land as possible to sugar cane, they did not grow much of their own food and it had to be imported. The demand for food resulted in a substantial increase in commercial farming on Staten Island and in the other rural communities surrounding Manhattan. Enslaved Africans were the source of labor for these farms.

The history of the property becomes murky for the years after one of the Corsens bought it, as many land records were destroyed when the British burned down the courthouse on Staten Island during the Revolutionary War. During the war, however, local histories tell of at least one skirmish between American and British troops that occurred near Old Place Neck in 1777. Known as "Battle Hill," the site of the fight was likely along today's Western Road, very near to the Old Place Neck Site. In the early twentieth century, remains of soldiers were discovered nearby.

After the war, the Old Place Neck Site property was bought by Captain David Mersereau, a notable citizen of Staten Island who established several businesses there including a tannery, two mills, and a ferry at Port Richmond. One of these was a flour mill built in 1803 known as the Old Place Mill. The mill and a house for the miller were next to Old Place Creek just south of the Old Place Neck Site. Local histories indicate that enslaved Africans and Native Americans built the mill and worked in it. A small community grew around the mill, with new houses built along the road that ran the length of Old Place Neck. Old Place Mill did not rely exclusively on local trade, but was a large business that shipped flour to other cities. As a sign of its importance to the local economy, the mill was kept under constant guard during the War of 1812 by local military to prevent its capture or use by the British.

The mill property changed hands several times over the next several decades. By 1869, it belonged to John Carpenter, who used it to grind flour and to process coconut shells and local iron ore into pigment for paint. Converting the mill to make products other than flour was likely related to the fact that large industrial flour mills in Minneapolis and elsewhere in the Midwest had made running smaller gristmills unprofitable. The mill continued to operate under other owners until it burned in the late 1890s. The miller's house survived and was used at some point during the 1890s as a "Fresh Air Home" for groups of children brought from the city.

By 1907, the presence of a Procter and Gamble factory and Milliken Brothers steel foundry to the north and east of Old Place Neck began to change the rustic landscape of northwestern Staten Island, though the area along Old Place Neck itself kept its rural character for several years. This changed in the 1920s, when the Port Authority of New York acquired property in the area to build the Howland Hook Bridge (today's Goethals Bridge). By 1927, the Old Place Neck Site property belonged to a real estate speculator named Owen Boylan. He subdivided the property to sell as individual lots, expecting to financially benefit from the bridge development. The bridge was completed the following year, but the collapse of the stock market in 1929 that triggered the Great Depression doomed the real estate venture. Of the 161 individual lots, Boylan managed to sell only two by 1930. As devastating as the Great Depression was, at least one good thing came of it. The property containing the Old Place Neck Site would remain undeveloped for the next 83 years, giving archaeologists a chance to discover it and preserve its information.
CHAPTER 9
NATIVE AMERICAN ARTIFACTS AND FEATURES:
WHAT ARCHAEOLOGISTS FOUND

The archaeologists recovered more than 10,000 artifacts and found numerous features during the investigations at the Old Place Neck Site. There were a wide variety of artifacts used for hunting, making stone tools, processing food or other materials, and cooking. The most common type of tools were projectile points that were mainly used for hunting. Of the 80 points found, only one is a true arrowhead, and the rest are spear or dart points. Several of the points showed a type of use-wear that suggested they were used or re-used as knives or scraping tools.

Artifacts associated with making stone tools, or flintknapping, include hammerstones, abraders, cores, preforms, and debitage or chipping debris. Hammerstones were used to remove flakes from a piece of raw stone material called a core. Abraders were used to grind the edge of a stone core to prepare a striking platform. This would help the hammerstone “grip” the edge or platform, which made knapping easier and more accurate. These artifacts may have been used for other things as well. The hammerstones could also be used for pounding or processing nuts and tree bark, and the abraders could have smoothed wood, antler, or bone. Preforms are stone tool “blanks” flaked into a standard shape and size; they are not finished tools, but reflect the earliest incomplete stage of a tool like a projectile point. Debitage is the by-product of flintknapping. Similar to the wood shavings that result from whittling and carving a piece of wood, thousands of flakes or stone chips could result from knapping stone. Debitage is the most common type of artifact found at pre-contact archaeological sites. Most debitage was discarded or ignored by Native American tool makers, though the larger flakes could be kept as cutting tools or as blanks to be made into other tools.

The artifacts that were used to process, prepare, or cook foods or other materials included knives, scrapers, a pestle, nutting stones, choppers, drills, gravers and perforators, and fire-cracked rock. Scrapers were used on animal hides, wood, or bone, while nutting stones were used as anvils for cracking nuts. The pestle could have been used to grind up or crush things like seeds for food, or minerals for paint. The choppers were likely used for heavy tasks, such as butchering large animals. People used drills and perforators to make holes, like those in beads or the socket ends of arrow or spear shafts. Gravers were used to carve bone, wood and antler and make notches in these materials and animal hides. Rocks used to line hearths, build roasting platforms and boil liquids are called “fire-cracked rock” because of the

HISTORICAL MAPS

Historical maps help archaeologists provide context for an area or indicate the presence and type of archaeological site. Maps often depict structures, roads, or features that may no longer be visible above the ground and the names of past property owners. PAL archaeologists studied historical maps before starting fieldwork at the Old Place Neck Site.

1639 map of the New York City area including Staten Island. No settlements are depicted for Staten Island, but the first settlement there was established in that same year.

1781 map of Staten Island that shows a road traversing Old Place Neck. The road would become known as Old Place Road.

1845 map of Old Place showing houses along the road.

1874 map of Old Place showing that the property at this time was owned by John Carpenter, and the location of the Old Place flour mill and miller’s house.

Projectile points and the remains of tool making activity from the Old Place Neck Site consisting of hammerstones (lower left), and a core and debitage (lower right).
Cracks and discoloration that develop when they are exposed to heat and fire.

The archaeologists also found woodworking tools and fragments of containers used for cooking food. The woodworking tools consisted of an adze, an axe, and axe fragments. Axes were used for cutting wood, and adzes were used to shape it. The container remains were sherds of pottery and fragments of stone bowls carved from steatite, or soapstone.

Many of the features discovered at the Old Place Neck Site contained evidence of the time of year that people were at a site, what types of food they ate, and how long ago they were there. The types of features found included two small pits, the remains of a hearth, a deep fire pit, a roasting platform formed of stone, a ground oven used for baking, and two caches. The fire pits, hearth, roasting platform and ground oven were all used for cooking food. Based on its narrow, deep shape, one of the fire pits was likely used as a smudge pit, or fire pit used to produce smoke. The pit’s shape would have created a low oxygen environment where wood would only smolder and smoke rather than burn. Native Americans were known to use smudge pits to smoke hides as part of the process of making leather, or to blacken pottery vessels. As they were camped next to a marsh, the people at the Old Place Neck Site could also have used the smudge pit to repel annoying insects like mosquitoes. The caches consisted of collections of tools that were intentionally buried in the ground for safe-keeping, which suggests that people intended to return to the site at a later date. Stored tools in caches meant that they would have the tools or supplies they needed on hand when they returned.

Tools like the axe or adze found at the Old Place Neck Site could be used for making a wooden canoe.

Illustrations by Dana Richardi, PAL

Making a stone tool involves striking large flakes from a core or large stone with a hammer to shape it (left), then using pressure to remove small flakes to create the final form (right). Many pieces of chipping debris (debitage) are produced during the tool-making process (center).

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Making a stone tool involves striking large flakes from a core or large stone with a hammer to shape it (left), then using pressure to remove small flakes to create the final form (right). Many pieces of chipping debris (debitage) are produced during the tool-making process (center).
Relative dating and absolute dating techniques were used to determine the age of the finds from the Old Place Neck Site. The relative dating technique used at Old Place Neck consisted of comparing diagnostic artifacts from the site to an established typological sequence. This involved identifying diagnostic artifacts types that are known to date to specific cultural periods or defined ranges of time based on their style and shape. The technique doesn’t provide an exact age, but allows archaeologists to determine which artifacts are older or younger than others. Absolute dating uses techniques that provide a more specific point in time, or a calendar date. The absolute dating technique used at the Old Place Neck Site was radiocarbon dating.

Projectile points are types of diagnostic artifacts that are especially useful for relative dating based on how their form changed through time. Based on their style and shape, the projectile points from the Old Place Neck Site ranged in age from about 10,000 years old during the late PaleoIndian Period to the Late Woodland Period, which spans a period of time from about 1,000 to 450 years ago. Most of the projectile points were made and used during the Late Archaic through Early Woodland periods, while those dating to cultural periods before and after this time were very rare. The large number of points from these time periods indicate that the site was used most often by people between about 5,000 to 2,000 years ago.

Interestingly, most of the radiocarbon dates from features at the site did not date to the period.
of time when the site was used most often. They instead dated to the periods before and after the most intensive periods of use—Middle Archaic, Middle Woodland, Late Woodland and contact. So why is there a difference between the age of the features and artifacts? It’s likely that visitors to the Old Place Neck Site in the Late Archaic through Early Woodland periods were making features, but they were likely shallower features, such as hearths. The site was formerly used as an agricultural field, and plowing, which had disturbed the upper soils to a depth of a foot or more, likely destroyed any shallow features made during this time. In contrast, people who stayed at the site during the Middle Archaic, Middle Woodland, Late Woodland and Contact periods made deeper features, such as small pits. The lower portions of these pits were below the plowzone so they remained undisturbed.

Most of the projectile points at the Old Place Neck Site date to the Late Archaic through Early Woodland cultural periods, suggesting that this was the time that the site was used most often.

Late Paleoindian Occupation Around 10,000 Years Ago
A single broken projectile point found at the site provided evidence that people visited Old Place Neck toward the end of the Paleoindian Period. The point’s deep, concave base indicated it is a Dalton or Dalton-like point made around 10,000 years ago. Its presence suggests that the people visiting the site were hunters. No other artifacts or features dating to this time frame were found, indicating the hunters stayed at the site for a brief period of time, perhaps only a few hours. After their visit, no one would leave anything behind at the site for the next several thousand years.

Middle Archaic Occupation Around 6,200 Years Ago
The next evidence of people visiting the site is a ground oven feature dating to the Middle Archaic Period. The feature consisted of a round area of soil that had been reddened by exposure to heat. A few stone flake tools possibly associated with the feature were found nearby that may have been used to prepare foods. There were no artifact types, like projectile points that could be dated to the period, but radiocarbon dating of a tiny amount of charcoal from the feature indicated that it was about 6,200 years old. The charcoal was of burned hickory wood, so it’s likely these trees were present in the environment at this time. The ground oven is an important finding as it is some of the earliest direct evidence of plant use from New York State. Common sense suggests that people have always gathered plants for food, but most of what we know about plant use in the Northeast dates to later periods.

A soil sample from the feature contained microscopic plant remains consisting of burned phytoliths from grass and starch from the edible tubers, or large bulbs, of Sagittaria, a plant commonly known as arrowhead or wapato (see Residue Analysis sidebar on page 38). The arrowhead plant grows in wetlands, and at least one species in New York State grows in tidal marshes like the one next to Old Place Neck. The reddened soils, burned phytoliths, and tuber starch indicated the feature had been used for cooking, but there was almost no charcoal left from a fire. There was, however, a dense concentration of fire-cracked rock found next to the feature, which was a hint that the cooking was done with hot rocks instead of fire. The evidence suggests that the people visiting the site at this time wrapped arrowhead plant tubers gathered from the adjacent wetland with grass, and placed them in a cooking pit with hot rocks heated in a fire nearby. Once the tubers were ready to eat, they removed the rocks, placing them in a pile next to the ground oven pit. This most likely occurred during the late summer or fall months, as arrowhead tubers are at their largest at this time, and are best eaten after the leaves die back in September or October.

CHAPTER 11
NATIVE AMERICAN OCCUPATIONS AT OLD PLACE NECK THROUGH TIME

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RESIDUE ANALYSIS

Residue analysis allows archaeologists to determine the types of foods or materials that people were processing. Some of the tools at the Old Place Neck Site had residues containing microscopic pieces of the plants. Specialists from PaleoResearch Institute analyzed these residues to assist PAL’s interpretation of the site. Phytoliths are made of silica, a mineral taken up by plants as they absorb water from the ground. Because silica is a mineral and not organic, it can survive for a very long time after a plant dies, preserving the plant’s cellular structures. Starch granules also preserve well and are common to plants with “storage” organs such as tubers, bulbs, and corms. The unique shapes of phytoliths and starch granules help to identify the type of plant. Protein residues were also found on a few tools indicating they might have been used to hunt or butcher animals.

Blood proteins like hemoglobin can bind themselves to soil particles and the surface of stone tools. These proteins can “glue” themselves to a surface and be preserved over long periods of time. An immunological technique known as cross-over immunoelectrophoresis is used to detect the proteins based on an antibody/antigen reaction. The residue is exposed to a group of antibodies, or antisera, from known animal families to test for positive reactions. The antisera can generally only identify a family of animals, rather than individual species. Bear protein on one projectile point from the Old Place Neck Site was processed, so we can be confident that these artifacts were used by at least two different groups of people visiting the site at different points in time. But the Narrow Stemmed materials of argillite do overlap in time with both the Susquehanna and Sylvan Lake artifacts. One possibility is that people using the Susquehanna or Sylvan Lake tools were also using the Narrow Stemmed points of argillite. It is also possible that the Narrow Stemmed materials of argillite were used by a third group of people, given that these materials were found in a different part of the site than the Susquehanna and Sylvan Lake materials.

Late to Transitional Archaic Occupations Between 5,000 to 2,700 Years Ago

Because the archaeologists carefully noted the provenience or location of all the artifacts, they were able to determine that three different point traditions dating to the Late to Transitional Archaic periods were grouped into separate areas. The differences between the three traditions were based on the different types of stone they were made from, their style, and the techniques used to make them. They consist of two different Narrow Stemmed point traditions, and points and materials associated with the Susquehanna Tradition. Narrow Stemmed points are so named because of their tall narrow shapes and small stems where the point was attached to a dart, spear, or handle. The Susquehanna Tradition is named for a series of sites along the Susquehanna River where the distinctive tools of this tradition were first described by archaeologists. Of the two kinds of Narrow Stemmed tradition points at the site, one can be associated with what is known as the Sylvan Lake Complex, described in the following section. The other kind of Narrow Stemmed Tradition artifacts included a collection of points and associated tools that were mostly made of a type of stone from New Jersey called argillite. These argillite points are virtually identical to Lackawaxen-series points commonly found at sites in the Delaware Valley in Pennsylvania and New Jersey. Lackawaxen-like points of argillite are very common on Staten Island, which has led several researchers to conclude that sites containing these point types were affiliated with groups from present-day New Jersey.

It’s not clear whether these three different point traditions reflect visits to the site by at least three different groups of people. Based on known point typologies and radiocarbon dates from other sites, the Susquehanna Tradition materials likely do not overlap in time with the Sylvan Lake points, so we can be confident that these artifacts were used by at least two different groups of people visiting the site at different points in time. But the Narrow Stemmed materials of argillite do overlap in time with both the Susquehanna and Sylvan Lake artifacts. One possibility is that people using the Susquehanna or Sylvan Lake tools were also using the Narrow Stemmed points of argillite. It is also possible that the Narrow Stemmed materials of argillite were used by a third group of people, given that these materials were found in a different part of the site than the Susquehanna and Sylvan Lake materials.
**Sylvan Lake Occupations Between 5,000 and 4,000 Years Ago**

Projectile points and artifacts associated with the Sylvan Lake Complex were first found and defined by noted New York archaeologist Robert Funk at the Sylvan Lake Rockshelter Site near Poughkeepsie, New York. Projectile point types assigned to this complex by Funk include Sylvan Lake stemmed points and Sylvan Lake side-notched points, and others similar to Lamoka, Wading River, and Bare Island point types. Sylvan Lake stemmed and Sylvan Lake side-notched types were recovered from the Old Place Neck Site. The Sylvan Lake points at the site were made differently, and from different materials than the other Narrow Stemmed points at the site. They had thicker bases, and were made from small cobbles or pebbles of chert, quartz, and jasper instead of argillite. Based on radiocarbon dates from the Sylvan Lake Rockshelter Site near Poughkeepsie, the Sylvan Lake points at the Old Place Neck Site were most likely made and used by people between about 4,000 to 5,000 years ago.

The Sylvan Lake points found at the Old Place Neck Site were in an area that also contained a very dense concentration of jasper debitage. Jasper from archaeological sites in the Northeast is usually thought to be from Pennsylvania, but it is also found on Staten Island. The jasper found at Old Place Neck almost certainly comes from local sources. The large amounts of jasper debitage indicates a workshop area where people made stone tools, including some of the Sylvan Lake points. A high percentage of the jasper debitage also had cortex, or the weathered surface of the cobbles, indicating that the tools made from the cobbles were being made from scratch. Several hammerstones, Jasper cores, and broken jasper tools that appear to have been broken during flintknapping were also found. Few finished stone tools were found within this workshop area, suggesting that the projectile points and other tools made in this area were used elsewhere.

Jasper was a highly desirable type of stone for making stone tools, but getting or trading for the material from Pennsylvania could have been costly or difficult. A more local source of jasper for residents of the Lower Hudson Valley likely made Staten Island an attractive place to visit not just for hunting and gathering foods, but also for collecting valuable jasper for making stone tools.

**Lackawaxen-Like Narrow Stemmed Occupations Between 5,000 and 2,700 Years Ago**

The most common types of points found at the Old Place Neck Site belong to the Lackawaxen-like group of Narrow Stemmed points that were mostly made from large flakes of argillite. Radiocarbon dates from other sites indicate that some of these point types continued to be used into the Early Woodland Period as late as 2,000 years ago, and some researchers believe they were used as recently as 1,500 years ago.

The area containing these argillite Narrow Stemmed points also contained many other argillite tools, and was the only area at the site where perforating tools were found. Projectile points were the most common type of tool in this area. Compared to the Sylvan Lake occupation area, there was a much higher density of tools. This suggests that this part of the site was used for activities related to processing of food or other materials and for the maintenance of tools used in these activities. This contrasts with the Sylvan Lake Complex pattern where most of the activity appears to be focused on making tools for use in an off-site location. Some argillite tools showed signs of use-wear that indicated they were used on hard materials like wood or bone.

One possibility suggested by the use-wear was the tools were used to repair hunting equipment, which is supported by the large numbers of projectile points found here. The wooden shafts attached to projectile points often broke during hunting, and the people visiting the site probably would have needed to make new ones.

A sample of the Narrow Stemmed points were tested for the presence of protein residues to find out what people were hunting. Proteins from blood left behind on a point or tool used for hunting or butchering an animal can be identified for particular species or families of animals. Protein residues were detected on two of the points. One point had bear protein, that based on the known historical distribution of bear species, most likely came from black bear. Protein from an American eel was
Proteins from bear and eel were detected on two of the Narrow Stemmed points.

detected on another point, indicating that it may have been used to spear an eel or as a knife to process it.

The protein residue evidence of eel protein is important because there is little direct archaeological evidence for fishing in the Lower Hudson Valley due to poor preservation of fragile fish bones and fishing equipment such as nets and bone fish hooks. The presence of the eel protein also suggests that people may have visited the site during the fall months. Eels are catadromous fish, which means they travel down the river to the Atlantic Ocean to spawn. They are present in the lowest reaches of the Hudson River year-round, but their numbers would have increased enormously during the September through November spawning runs. Native Americans had a detailed and sophisticated understanding of the region’s plants and animals and would likely have harvested them during this time of the year.

Susquehanna Occupations Between 3,700 and 2,700 Years Ago

Artifacts from the area containing the Susquehanna Tradition materials included Snook Kill blades and Susquehanna and Perkiomen projectile points. Unlike the Narrow Stemmed artifacts made from flakes or cobbles, the Susquehanna Tradition artifacts were made from carefully prepared bifaces, or thin, bifacially flaked pieces of stone. Snook Kill blades and points are generally older than other Susquehanna Tradition tools, ranging in age from about 3,700 to 3,500 years ago in New York. Susquehanna and Perkiomen points appear later, dating between about 3,500 and 2,700 years ago. All but one of the Snook Kill blades were made from argillite, while the Susquehanna and Perkiomen points were made from chert and jasper.

The two cache features found at the site were both located in the area containing the Susquehanna Tradition occupations. The first cache contained 25 Snook Kill blades, most of which were made of argillite. Twenty more blades came from the overlying plowed soils near the cache, suggesting it had been disturbed when the site was used as an agricultural field. Residue analysis of the Snook Kill blades revealed microscopic plant remains consisting of phytoliths and starch from grass seeds. Many types of grass seeds are good sources of edible starches, but processing the seeds was likely very time consuming.

The two caches found at the site contained well-used hammer-stone, an adze, and a large piece of unworked quartzite stone. The adze appeared unfinished or damaged, and its presence in the cache indicates the toolmaker planned to return to finish making or repairing the tool. The presence of both caches shows that people were supplying the site with tools, and storing them there with an intent to return. This suggests that the Old Place Neck Site was probably a favorite campsite area visited during certain times of the year on a regular basis.

In addition to the Perkiomen and Susquehanna points, there were also higher numbers of jasper and chert tools in the area containing the Susquehanna Tradition materials compared to other areas at the site. Use-wear on these tools indicates they were often used on soft materials like hides or non-woody plants. Protein residue from a catfish or carp was detected on a jasper knife used to cut up the fish. In addition to the toolmaker’s cache, several bifaces that were broken before being finished as knives or points were found in this area. These finds suggest that repairing and finishing stone tools was another activity during the Transitional Archaic Period use of the Old Place Neck Site.

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The finds from the area containing the Susquehanna Tradition materials reflect several visits by people who clearly planned to return to the site. They did a variety of things during these visits, including gathering and processing grass seeds for food, hunting, fishing, and carrying out the final steps of making and repairing stone tools.

Early Woodland Occupation Between 2,700 and 2,300 Years Ago

Artifacts clearly associated with the Early Woodland Period were found in an area that overlaps with the location of the Lackawaxen Series-like Narrow Stemmed Tradition materials. The artifacts consist of Tear Drop type bifaces, a Meadowood point and drill of chert, and possible Vinette I type ceramic sherds. Large amounts of charcoal and vegetation changes seen in a pollen record from the tidal marsh next to the site suggest that Native American activity at the site peaked at this time. The site use was intensive enough to disrupt the environment and change the composition of the local woodland plant communities.

The archaeologists also discovered a very dense concentration of fire-cracked rock believed to be the remains of a roasting platform used for cooking. Much of the feature had been disturbed by plowing and an uprooted tree so that its original shape could

A cache of Snook Kill blades.

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dating of a charred acorn fragment from the second pit showed that it was a little older, about 1,300 years old. In addition to the burned acorn nutshell, the older pit also contained blackberry or raspberry seeds.

When people visited the site during the Middle Woodland Period, the environment contained hickory, conifer, walnut, and oak trees based on the wood charcoal and charred nutshell from the pits. The two small pits were used to cook food, leaving behind minute burned remains of animal bone, acorn husks, and raspberry or blackberry seeds. Although archaeologists know people stayed at the site at least twice during this period, the absence of other artifacts dating to this period suggests that visits were brief, stopping only long enough to cook a meal before moving on.

**Late Woodland Occupations Between 1,000 and 450 Years Ago**

The only artifacts that could be dated to the Late Woodland Period were a chert Levanna projectile point and some ceramic sherds found in the northern portion of the site. These artifacts could date to any time between about 1,000 and 450 years ago. The archaeologists also discovered a narrow and deep smudge (or smoke) pit in the southeastern part of the site. Still preserved within the pit were two small charred logs of wood from a walnut tree that were stood upright and against one side of the pit. Radiocarbon dating of the logs showed that the smudge pit was about 700 to 800 years old. The pit also contained a charred piece of fruit and starch from a tuber of the arrowhead plant.

The Late Woodland finds scattered across the Early Woodland artifacts at the site consisting of a Meadowood projectile point and Tear Drop bifaces.

**Middle Woodland Occupations Between 1,300 and 1,000 Years Ago**

There were no artifacts at the site that could be associated with the Middle Woodland Period. The archaeologists did, however, find other evidence of people visiting the site during this period in the form of two small pit features at the northern end of the site. The upper portions of both pits had been disturbed by plowing, which had introduced material dating to the Post-Contact Period into the features, but radiocarbon dates from charcoal in the undisturbed portions of the features indicate they were made and used during the Middle Woodland Period. Materials found in the first pit consisted of a piece of burned animal bone, jasper flakes and wood charcoal fragments from a walnut tree. Radiocarbon dating of the walnut charcoal indicated that the features was about 1,100 years old.

Residue analysis detected microscopic remains of grass seeds on the Snook Kill blades, and protein from catfish on a jasper knife.

**Tool Family/Subfamily (Possible Species)**

<table>
<thead>
<tr>
<th>TOOL</th>
<th>FAMILY/SUBFAMILY (POSSIBLE SPECIES)</th>
<th>COMMON NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snook Kill</td>
<td>Poaceae seed phytoliths and starch</td>
<td>Grass</td>
</tr>
<tr>
<td>Jasper Uniface</td>
<td>Ictaluridae/Cyprinidae/Catastomidae</td>
<td>Catfish (bullhead catfish, carp, suckers)</td>
</tr>
</tbody>
</table>

A large number of the stone tools associated with the area containing the Susquehanna Tradition materials were made of jasper and chert.
site suggest that it was visited several times during this period. The Levanna projectile point indicates that at least one of these visits could have been related to hunting. People brought pottery containers with them during other visits that they used for cooking. During one visit between 700 and 800 years ago, people visiting the site dug a deep pit to make smoke, possibly to keep insects away. The small burned fragments of food found within the pit include wetland plants and fruit that may have been prepared or consumed when the pit was in use. Similar to the earlier Middle Woodland Period, the scarce amounts of artifacts dating to the Late Woodland Period indicate that the visits did not last long.

Contact Period Occupations Between 450 and 300 Years Ago

A feature and a few artifacts indicated that Native Americans continued to visit the Old Place Neck Site during the Contact Period, when European explorers, traders, and settlers first began arriving in the New York City area. The feature consisted of the bottom of a hearth that had been disturbed by plowing. Radiocarbon dating of hickory charcoal from the hearth showed that it dates to the sixteenth or seventeenth century (about 1510–1660). The artifacts included items obtained through trade with European explorers or colonists. During the Contact Period, the European items acquired by Native Americans were often altered or “reworked” to suit their own purposes, and the items archaeologists found seem to reflect this practice. These European gunflints, pieces of metal and glass from the Old Place Neck Site were likely obtained and reworked by Native Americans during the Contact Period.

The deep, narrow shape of this Late Woodland pit feature suggested that it was designed to produce smoke.

Metallographic Analysis

The types of metal artifacts recovered during the data recovery investigations at the Old Place Neck Site suggested the items were left during the Contact Period by Native Americans. To learn more, the items underwent metallographic analysis at the Archaeometallurgy Lab at Lehigh University in Pennsylvania. The analysis involves looking at the microstructure of a thin section of a piece of metal to determine when and how the artifacts were made.

Most of the tested metal objects were not associated with Native American use or re-use. Several were manufactured using nineteenth century technology, much later than the Contact or early Post-Contact periods. Two artifacts made of nearly pure copper showed evidence of reworking, and could have been made by Native Americans from sheet copper acquired from trade with Europeans. The microstructure of one piece of metal sheet or thin plate showed it was made of cast brass of European origin that was subsequently reworked, most likely by Native Americans. This piece of brass was rough cut into a rectangular shape and an unusual T-shape had been scored or incised out of one end. The microstructure of this brass artifact and its surface marks further indicated reworking through cold hammering, a technique used by both Europeans and Native Americans. The function of this brass piece is unknown, and it may have been discarded in an unfinished state.

When considered together with other items found at the Old Place Neck Site (a reworked gunflint, knapped glass, and a hearth feature radiocarbon dated to the Contact Period), the recovered metal objects clearly suggest Native Americans continued to use the site into the Contact Period.

These images show the same copper artifact at three levels of magnification. This object was made by repeatedly folding and hammering a thin sheet of copper to form the three dimensional shape. The scale bar on the bottom left image is 0.004-inches long.

Metallographic analysis of metal artifacts from the Old Place Neck Site consisted of examining thin sections for microstructural characteristics that could provide details on the type of technology used to make or rework the artifacts.
CHAPTER 13
EUROAMERICAN SETTLEMENT AT OLD PLACE NECK

The archaeologists recovered many post-contact artifacts that provided information about what was happening at the Old Place Neck Site after Europeans arrived and settled there. Land records for the property showed that it was likely settled in the 1670s by Dutch settler Jan Tunisson, after which the property was used as an agricultural field well into the eighteenth century. Archaeologists found many artifacts from the seventeenth and eighteenth centuries, including ceramics, gunflints, and smoking pipe fragments. One piece of a smoking pipe bowl was clearly Dutch-made and had been stamped with a windmill design.

Most of the post-contact materials dated later to the nineteenth century. The remains of a brick building were found in the southern part of the site close to present-day Goethals Bridge Road. The building’s remains were not intact, and consisted of a layer demolition debris. Construction of this road during the 1920s probably destroyed the building. The archaeologists at first thought it could have been the miller’s house next to the Old Place Mill, but maps showed that the miller’s house would have been too far south. A search of land records like deeds, maps, and other historical documents did not show any other buildings other than the mill and miller’s house that could have been on the property.

The only information about what the structure might have been came from the archaeological evidence. The stays at the base camp could have lasted several days or weeks. The evidence shows that people were coming back to the site on a regular basis during the Late Archaic through Early Woodland periods. The caches of tools and unworked slabs and chunks of argillite brought to the site from New Jersey indicate that people were supplying the site with tools and materials for future use. The strongest cultural connections linking the people living on Staten Island to other groups was to the Delaware River Valley. Strong links with contemporary cultures in the Hudson River Valley and areas east of Staten Island are absent at Old Place Neck.

The Contact Period finds at the Old Place Neck Site may be related to other finds dating to this period from a village-like site known as the Old Place Site located further west along the neck landform. The handful of Contact Period items from the Old Place Neck Site are likely materials left or dropped at the site as they traveled to and from the settlement at the Old Place Site along the neck landform.

CHAPTER 12
NATIVE AMERICAN LIFE AT OLD PLACE NECK

The Old Place Neck Site was not a place where people stayed for long periods of time. There were no large features like storage or refuse pits, or evidence of structures like wigwams that would indicate people were living at the site on a permanent or semi-permanent basis. Instead, people made short-term visits to the site to hunt, fish, and collect and process nuts and other foods. The evidence for the types of food that people were harvesting indicates that most of these temporary visits occurred during the fall months. Bear hunting would have been best in the fall, after these animals spent the summer eating berries and other foods to develop the winter store of fat they would need to hibernate through the winter. The fall spawning runs of eel would have dramatically increased their numbers in the streams and rivers of the area. Nuts and acorns would become ripe and ready to eat in the fall, and tubers of the wapato plant are at their largest in the fall.

The brief visits to the site during the PaleoIndian, Middle Archaic, and Middle to Late Woodland periods likely lasted no more than a few hours or days. When the site was visited most often during the Late Archaic through Early Woodland periods, people used the site as a base camp for longer periods of time to hunt, fish, and to collect and process nuts and other foods. Their stays at the base camp could have lasted several days or weeks. The evidence shows that people were coming back to the site on a regular basis during the Late Archaic through Early Woodland periods. The caches of tools and unworked slabs and chunks of argillite brought to the site from New Jersey indicate that people were supplying the site with tools and materials for future use. The strongest cultural connections linking the people living on Staten Island to other groups was to the Delaware River Valley. Strong links with contemporary cultures in the Hudson River Valley and areas east of Staten Island are absent at Old Place Neck.

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The information about the Old Place Neck Site collected by archaeologists included not just artifacts, but also field notes, excavation forms, maps, drawings, photographs, a catalog of the findings, and other documentary records. All these data and materials are ultimately part of the cultural heritage of Native American descendants of the Lenape, the residents of what are now New York City and Staten Island, and the public. The collection of materials from the investigations at the Old Place Neck Site has been permanently transferred to the Staten Island Museum, where it is available to future generations of researchers and the public.

Glossary of Terms

**Abrader**: A general term for a stone used to grind wood, antler, or another stone. Abraders are typically identified by the scratches and other wear on their surfaces produced during their use.

**Absolute dating**: The determination of age with reference to a specific point in time, such as a fixed calendrical system. It is also referred to as chronometric dating. Examples of absolute dating are tree-ring dating and radiocarbon dating.

**Adze (or Adz)**: An axe-like tool used for splitting, smoothing or dressing wood timbers. An adze is hafted at a right angle to a wood handle.

**Archaeology**: A subdiscipline of anthropology involving the study of the human past through material remains.

**Archaeologist**: Anyone with an interest in the aims and methods of archaeology. At a professional level, the archaeologist usually holds a degree in anthropology, with a specialization in archaeology. The professional archaeologist is one who is capable of collecting archaeological information in a proper scientific way, and interpreting that information in light of existing scientific theories and methods.

**Arrowhead**: A common name used by non-archaeologists for projectile points. Many archaeologists believe that bow and arrow technology was introduced to the Northeast around 3,000 years ago. Most "arrowheads" found in the region were hafted to spears or atlatl darts or were used as knives. See Projectile Point, below.

**Artifact**: Any portable object that shows evidence of modification by humans. Examples of artifacts are spear points chipped from stone, fragments of pottery vessels and coins. Whether ancient or recent, artifacts are the traces of human behavior, and therefore one of the main categories of things studied by archaeologists.

**Atlatl**: Also called a throwing stick, an implement used to throw a spear or dart. The butt of the spear shaft would fit one end of the atlatl and lie along it facing the direction of the throw. The thrower would hold the other end of the atlatl and the spear shaft together, then release the spear shaft but not the atlatl while throwing, so that the spear would be launched from the end of the atlatl rather than from the hand. The atlatl acted as a kind of lever, artificially extending the length of the thrower's arm resulting in the spear being thrown with up to three times the force and distance as one thrown by hand.

**Before Present or BP**: A chronological term used by archaeologists as an alternative to "BC." Technically, the "present" is 1950 because that is the time to which radiocarbon dating is standardized.

**Biface**: An artifact that has been knapped (chipped) on both its surfaces. These artifacts represent a basic class of artifact that either could have been further knapped into finished tools; were expediently produced to serve an immediate purpose (e.g. scraping, chopping, cutting, etc.); were used as a source of material for producing flakes tools; or are formal or broken tool remnants. Knives and projectile points are examples of bifacial tools.

**Early 18th century ceramics and an 1805 half-dime from the Old Place Neck Site.**
Bioturbation: The movement of soils and sediments by plants and animals. Burrowing by small mammals, worms, and insects is a significant factor in the movement of sediments. The growth and decay of plant roots creates voids in the soil that fill with sediments from the surrounding topsoils and subsoils. Large volumes of soils can be disturbed when mature trees blow down in storms or topple after dying. Bioturbation is largely responsible for the gradual burial of artifacts left on the ground surface at most archaeological sites found in the Northeast.

Cache: A group or objects intentionally left in a location for future use. Caches at archaeological sites can include both raw material, such as stone for the manufacture of tools, or the tools, themselves. Caches are evidence of someone's intention to return to a site at some point in the future.

Context: Archaeological context refers to the setting within a site from which the relationship of archaeological features, artifacts, and environmental evidence are connected. Usually the meaning of artifacts cannot be discerned without information about their setting. One example is determining how old an object is by its depth in the ground. Unless the depth of an object is carefully recorded against a fixed point of reference, it may be impossible to relate objects to the dimension of time. Another example is finding an artifact in a ceremonial pit versus a trash pit, which gives that object different meaning.

Core: A piece of raw stone material from which flakes or blades have been taken, in order to provide blanks for tools.

Cryoturbation: The movement of soils and sediments from freezing and thawing. The formation of ice crystals below the ground surface displaces soils and sediments, including cobbles and even small boulders. In humid temperate climates with distinct summer and winter seasons, cryoturbation is often a significant factor in soil turnover and soil formation.

Cultigens: A type of plant that was altered through human selection. Cultigens are also called “domesticated plants” and reflect the selective crossing of many generations of plants to make them more useful or reliable resources for humans. Familiar cultigens include corn (“maize”), wheat, barley, and rice.

Cultural chronology: An outline of major cultural developments through time – adaptations, subsistence and settlement patterns, technological innovations, etc. Archaeologists have come up with cultural chronologies for major areas around the world, usually presented in a chart from earliest to latest traits.

Cultural resources: The remains that compose our nonrenewable heritage from the past, including both the archaeological and the historical records. Archaeologically, even the smallest fragments of cultural objects potentially hold important information concerning past lifeways. Archaeologists have developed specialized techniques to recover, analyze, and preserve this information in the form of physical remains. While some artifacts from ancient sites may appear insignificant to those outside the cultural group, such items may indeed hold important meaning to the descendants of those who created the artifacts. Therefore, it is vital that the broadest and most inclusive definitions of material culture be used when identifying and consulting on Native American issues.

Cultural resource management (CRM): Development of programs and policies aimed at conservation of archaeological properties and information. Such programs exist within the federal and state governments, academic institutions and private agencies.

Data recovery: An archaeological data recovery is the systematic collection of scientific, prehistoric, historic, and/or archaeological data from a site. Data recovery usually entails intensive excavations. Because excavations are destructive, data recovery investigations are typically confined to sites or parts of sites which cannot be feasibly preserved in place. Data recovery investigations always include a detailed research plan that guides the work in the field and laboratory.

Debitage or chipping debris: A term for the characteristic types of stone flakes produced from manufacture (knapping) of stone tools by chipping (as, for example, stone spear or arrow points). One of the most common types of pre-contact Native American artifacts, these distinctive flakes frequently alert the archaeologist to the presence of a site.

Deposit: A layer of materials, such as artifacts or sediments, left behind by natural action or human activity.

Estuary: A body of water at the mouth of one or more rivers where freshwater and saltwater mix. Estuaries are ecologically rich habitats that support a great variety of plant and animal species.

Feature: In archaeology, something made or modified by humans that cannot be removed from the ground without destroying it. Many things of archaeological interest are portable, such as fragments of bone, pottery and stone tools (artifacts). However, archaeological sites frequently contain human made things that are not portable, but are part of the earth itself. Examples of these features are hearths, foundations of buildings, storage pits, burial pits and canals.

Fire-cracked rock: Stone which has been altered and usually broken through deliberate exposure to fire.

Flintknapping: The process of removing flakes from a piece of stone to form tools. Flintknapping shapes stone through the controlled removal of material by striking the stone with a hammer made of stone, antler or wood, called percussion. Flintknapping can also involve the removal of flakes by pressing on the edge of the stone with sufficient force to detach a flake, a process called “pressure flaking”. Knapped or “chipped” stone tools are distinct from “ground stone tools” which are made through the abrasion or grinding of a stone to form a tool.

Graver: A stone tool used to score or engraver a softer material, such as bone, wood, antler or shell. Gravers have a narrow point or prominence at their working end. Gravers can be made from simple flakes, scrapers, and bifaces.

Grid: A system of numbered squares or coordinates printed on a map or stored in a computer and used to record the provenience of artifacts and their relationships to each other and other natural or cultural features.

Hammerstone: A stone with scarring or pitting on its end or edges from banging, that functioned as a hammer. Hammerstones were often used to split cobbles and flake cores in stone tool manufacture. They were also used to split bones to extract marrow.

Hearth: A place where a fire is built, often ringed by stones.

Isotopes: Forms of a chemical element with the same number of protons in their nuclei, but numbers of neutrons. Different isotopes of the same element share the same basic chemical properties. Isotopes can be stable or unstable (radioactive).

Lanceolate-shaped projectile point: Lanceolate: term used for leaf-shaped knapped stone points, made without a stem, shoulders, notches, or other features that aid in attachment to a shaft.
Dirt, rocks, and other non-organic material cannot be radiocarbon dated.

Radiocarbon dating: A form of absolute dating, this is the calculation of the absolute age of an organic sample by comparing the amount of carbon-12 with that of its unstable isotope, carbon-14. C-14 in all organic matter starts to decay at a known rate once an organism dies, and ceases to take in carbon. This technique works only on organic material such as wood, bone, fibers, shell, etc. Dirt, rocks, and other non-organic material cannot be radiocarbon dated.

Relative dating: Determining chronological sequence without reference to a fixed point in time. Dates expressed relative to one another (for instance, earlier vs. later). Examples of relative dating are stratigraphic and typological dating.

Provenience: The location from which an artifact was collected. Archaeologists usually record provenience in three dimensions to aid in spatial analysis of a site. Provenience can be recorded relative to a fixed reference point, called a datum, or in relationship to some other common reference, such as “20 centimeters below the ground surface.”

Soil horizon: A layer of soil developed from sediments over a long period of time that is distinct from those above or below. Soil horizons vary in their color, chemical composition, organic content, and rates of turbation (turnover). Mature soils with multiple horizons may take centuries to develop.

Pestle: A ground stone tool used to grind seeds, nuts, and other materials into flour.

Rut: A refuse deposit; a garbage dump.
LEARN MORE ABOUT THE OLD PLACE NECK SITE: POWERING THE FUTURE, PROTECTING THE PAST

If we hadn’t been looking closely, we might have missed it. After all, who expects to find a historic treasure trove in Staten Island—in 2012?

Fortunately, Spectra Energy and Public Archaeology Laboratory, Inc. (PAL) were looking closely as part of our cultural resource assessment work associated with the New Jersey-New York Expansion Project. And we discovered a remarkable archaeological site, dating back at least 5,000 years, designated the Old Place Neck Site. With painstaking care, PAL excavated more than 6,000 square feet, uncovering a unique timeline of the region’s history – from Native American tribes to colonial Dutch settlers to eighteenth- and nineteenth-century activity. In all, more than 24,000 artifacts were recovered, ranging from stone tools and projectile points to cooking utensils and ceramics.

See more at: youtube.com/watch?v=Ng7e07YKkmk

LEARN MORE ABOUT THE PARTNERS WORKING TO PRESERVE NEW YORK’S HISTORIC PLACES:

New York State Historic Preservation Office
New York’s State Historic Preservation Office (SHPO) helps communities identify, evaluate, preserve, and revitalize their historic, archaeological, and cultural resources. nysparks.com/shpo

New York City Landmarks Preservation Commission
The Landmarks Preservation Commission (LPC) is the largest municipal preservation agency in the nation. It is responsible for protecting New York City’s architecturally, historically, and culturally significant buildings and sites by granting them landmark or historic district status, and regulating them once they’re designated. nyc.gov/landmarks

Spectra Energy
As one of North America’s leading natural gas, natural gas liquids and crude oil infrastructure companies, Spectra Energy considers environmental stewardship a fundamental priority. spectraenergy.com/Sustainability/Environmental

The Staten Island Museum
Especially for thinkers, doers and the curious who are seeking diverse and engaging experiences in a unique setting, Staten Island Museum is the place for exploring the dynamic connection between natural science, art and history. statenislandmuseum.org